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Title 10—Energy

(This book contains parts 51 to 199)

Part

CHAPTER I—Nuclear Regulatory Commission (Continued) 51

CHAPTER I—NUCLEAR REGULATORY COMMISSION (CONTINUED)

EDITORIAL NOTE: Nomenclature changes to chapter I appear at 70 FR 69421, Nov. 16, 2005, and at 72 FR 33386, June 18, 2007.

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Subpart B [Reserved]

AUTHORITY: Atomic Energy Act of 1954, secs. 161, 193 (42 U.S.C. 2201, 2243); Energy Reorganization Act of 1974, secs. 201, 202 (42 U.S.C. 5841, 5842); National Environmental Policy Act of 1969 (42 U.S.C. 4332, 4334, 4335); Nuclear Waste Policy Act of 1982, secs. 144(f), 121, 135, 141, 148 (42 U.S.C. 10134(f), 10141, 10155, 10161, 10168); 44 U.S.C. 3504 note.

Sections 51.20, 51.30, 51.60, 51.80, and 51.97 also issued under Nuclear Waste Policy Act secs. 135, 141, 148 (42 U.S.C. 10155, 10161, 10168).

Section 51.22 also issued under Atomic Energy Act sec. 274 (42 U.S.C. 2021) and under Nuclear Waste Policy Act sec. 121 (42 U.S.C. 10141).

Sections 51.43, 51.67, and 51.109 also issued under Nuclear Waste Policy Act sec. 114(f) (42 U.S.C. 10134(f)).

SOURCE: 49 FR 9381, Mar. 12, 1984, unless otherwise noted.

EDITORIAL NOTE: Nomenclature changes to part 51 appear at 80 FR 74980, Dec. 1, 2015.

§51.1 Scope.

This part contains environmental protection regulations applicable to NRC's domestic licensing and related regulatory functions. These regulations do not apply to export licensing matters within the scope of part 110 of this chapter or to any environmental effects which NRC's domestic licensing and related regulatory functions may have upon the environment of foreign nations. Subject to these limitations, the regulations in this part implement:

(a) Section 102(2) of the National Environmental Policy Act of 1969, as amended.

§51.2 Subparts.

(a) The regulations in subpart A of this part implement section 102(2) of the National Environmental Policy Act of 1969, as amended.

§51.3 Resolution of conflict.

In any conflict between a general rule in subpart A of this part and a special rule in another subpart of this part or another part of this chapter applicable to a particular type of proceeding, the special rule governs.

§51.4 Definitions.

As used in this part:

Act means the Atomic Energy Act of 1954 (Pub. L. 83–703, 68 Stat. 919) including any amendments thereto.

Commission means the Nuclear Regulatory Commission or its authorized representatives.

Construction means:

(1) For production and utilization facilities, the activities in paragraph (1)(i) of this definition, and does not mean the activities in paragraph (1)(ii) of this definition.

(i) Activities constituting construction are the driving of piles, subsurface preparation, placement of backfill, concrete, or permanent retaining walls within an excavation, installation of foundations, or in-place assembly, erection, fabrication, or testing, which are for:

(A) Safety-related structures, systems, or components (SSCs) of a facility, as defined in 10 CFR 50.2;

(B) SSCs relied upon to mitigate accidents or transients or used in plant emergency operating procedures;

(C) SSCs whose failure could prevent safety-related SSCs from fulfilling their safety-related function;

(D) SSCs whose failure could cause a reactor scram or actuation of a safety-related system;

(E) SSCs necessary to comply with 10 CFR part 73;

(F) SSCs necessary to comply with 10 CFR 50.48 and criterion 3 of 10 CFR part 50, appendix A; and

(G) Onsite emergency facilities (*i.e.*, technical support and operations support centers), necessary to comply with 10 CFR 50.47 and 10 CFR part 50, appendix E.

(ii) Construction does not include:

(A) Changes for temporary use of the land for public recreational purposes;

(B) Site exploration, including necessary borings to determine foundation conditions or other preconstruction monitoring to establish background information related to the suitability of the site, the environmental impacts of construction or operation, or the protection of environmental values;

(C) Preparation of a site for construction of a facility, including clearing of the site, grading, installation of drainage, erosion and other environmental mitigation measures, and construction of temporary roads and borrow areas;

(D) Erection of fences and other access control measures that are not safety or security related, and do not pertain to radiological controls;

(E) Excavation;

(F) Erection of support buildings (e.g., construction equipment storage sheds, warehouse and shop facilities, utilities, concrete mixing plants, docking and unloading facilities, and office buildings) for use in connection with the construction of the facility;

(G) Building of service facilities (e.g., paved roads, parking lots, railroad spurs, exterior utility and lighting systems, potable water systems, sanitary sewerage treatment facilities, and transmission lines);

(H) Procurement or fabrication of components or portions of the proposed facility occurring at other than the final, in-place location at the facility;

(I) Manufacture of a nuclear power reactor under a manufacturing license under subpart F of part 52 of this chapter to be installed at the proposed site and to be part of the proposed facility; or

(J) With respect to production or utilization facilities, other than testing facilities and nuclear power plants, required to be licensed under section 104.a or section 104.c of the Act, the erection of buildings which will be used for activities other than operation of a facility and which may also be used to house a facility (e.g., the construction of a college laboratory building with space for installation of a training reactor).

(2) For materials licenses, taking any site-preparation activity at the site of a facility subject to the regulations in 10 CFR parts 30, 36, 40, and 70 that has a reasonable nexus to radiological health and safety or the common defense and security; provided, however, that construction does not mean:

(i) Those actions or activities listed in paragraphs (1)(ii)(A)–(H) of this definition; or

(ii) Taking any other action that has no reasonable nexus to radiological health and safety or the common defense and security.

NRC means the Nuclear Regulatory Commission, the agency established by Title II of the Energy Reorganization Act of 1974, as amended.

NRC staff means any NRC officer or employee or his/her authorized representative, except a Commissioner, a member of a Commissioner's immediate staff, an Atomic Safety and Licensing Board, a presiding officer, an administrative judge, an administrative law judge, or any other officer or employee of the Commission who performs adjudicatory functions.

NRC Staff Director means:

Executive Director for Operations;
Director, Office of Nuclear Reactor Regulation;
Director, Office of Nuclear Material Safety and Safeguards;
Director, Office of Nuclear Regulatory Research;
Director, Office of Governmental and Public Affairs; and
The designee of any NRC staff director.

[49 FR 9381, Mar. 12, 1984, as amended at 51 FR 35999, Oct. 8, 1986; 52 FR 31612, Aug. 21, 1987; 72 FR 57443, Oct. 9, 2007; 73 FR 5723, Jan. 31, 2008; 76 FR 56964, Sept. 15, 2011; 77 FR 46599, Aug. 3, 2012; 79 FR 75740, Dec. 19, 2014; 84 FR 65644, Nov. 29, 2019]

§ 51.5 Interpretations.

Except as specifically authorized by the Commission in writing, no interpretation of the regulations in this part by any officer or employee of the Commission other than a written interpretation by the General Counsel will be recognized to be binding upon the Commission.

§ 51.6 Specific exemptions.

The Commission may, upon application of any interested person or upon its own initiative, grant such exemptions from the requirements of the regulations in this part as it determines

are authorized by law and are otherwise in the public interest.

Subpart A—National Environmental Policy Act—Regulations Implementing Section 102(2)

§51.10 Purpose and scope of subpart; application of regulations of Council on Environmental Quality.

(a) The National Environmental Policy Act of 1969, as amended (NEPA) directs that, to the fullest extent possible: (1) The policies, regulations, and public laws of the United States shall be interpreted and administered in accordance with the policies set forth in NEPA, and (2) all agencies of the Federal Government shall comply with the procedures in section 102(2) of NEPA except where compliance would be inconsistent with other statutory requirements. The regulations in this subpart implement section 102(2) of NEPA in a manner which is consistent with the NRC's domestic licensing and related regulatory authority under the Atomic Energy Act of 1954, as amended, the Energy Reorganization Act of 1974, as amended, and the Uranium Mill Tailings Radiation Control Act of 1978, and which reflects the Commission's announced policy to take account of the regulations of the Council on Environmental Quality published November 29, 1978 (43 FR 55978–56007) voluntarily, subject to certain conditions. This subpart does not apply to export licensing matters within the scope of part 110 of this chapter nor does it apply to any environmental effects which NRC's domestic licensing and related regulatory functions may have upon the environment of foreign nations.

(b) The Commission recognizes a continuing obligation to conduct its domestic licensing and related regulatory functions in a manner which is both receptive to environmental concerns and consistent with the Commission's responsibility as an independent regulatory agency for protecting the radiological health and safety of the public. Accordingly, the Commission will:

(1) Examine any future interpretation or change to the Council's NEPA regulations;

(2) Follow the provisions of 40 CFR 1501.5 and 1501.6 relating to lead agencies and cooperating agencies, except that the Commission reserves the right to prepare an independent environmental impact statement whenever the NRC has regulatory jurisdiction over an activity even though the NRC has not been designated as lead agency for preparation of the statement; and

(3) Reserve the right to make a final decision on any matter within the NRC's regulatory authority even though another agency has made a predecisional referral of an NRC action to the Council under the procedures of 40 CFR part 1504.

(c) The regulations in this subpart[1] also address the limitations imposed on NRC's authority and responsibility under the National Environmental Policy Act of 1969, as amended, by the Federal Water Pollution Control Act Amendments of 1972, Pub. L. 92–500, 86 Stat. 816 *et seq.* (33 U.S.C. 1251 *et seq.*) In accordance with section 511(c)(2) of the Federal Water Pollution Control Act (86 Stat. 893, 33 U.S.C 1371(c)(2)) the NRC recognizes that responsibility for Federal regulation of nonradiological pollutant discharges[2] into receiving waters rests by statute with the Environmental Protection Agency.

(d) Commission actions initiating or relating to administrative or judicial civil or criminal enforcement actions or proceedings are not subject to Section 102(2) of NEPA. These actions include issuance of notices of violation, orders, and denials of requests for action pursuant to subpart B of part 2 of this chapter; matters covered by part 15 and part 160 of this chapter; and issuance of confirmatory action letters, bulletins, generic letters, notices

[1] See also Second Memorandum of Understanding Regarding Implementation of Certain NRC and EPA Responsibilities and Policy Statement on Implementation of Section 511 of the Federal Water Pollution Control Act (FWPCA) attached as Appendix A thereto, which were published in the FEDERAL REGISTER on December 31, 1975 (40 FR 60115) and became effective January 30, 1976.

[2] On June 1, 1976, the U.S. Supreme Court held that "'pollutants' subject to regulation under the FWPCA [Federal Water Pollution Control Act] do not include source, byproduct, and special nuclear materials, . . ." *Train* v. *Colorado PIRG,* 426 U.S. 1 at 25.

of deviation, and notices of nonconformance.

[49 FR 9381, Mar. 12, 1984, as amended at 54 FR 43578, Oct. 26, 1989; 61 FR 43408, Aug. 22, 1996; 86 FR 67843, Nov. 30, 2021]

§ 51.11 Relationship to other subparts. [Reserved]

§ 51.12 Application of subpart to ongoing environmental work.

(a) Except as otherwise provided in this section, the regulations in this subpart shall apply to the fullest extent practicable to NRC's ongoing environmental work.

(b) No environmental report or any supplement to an environmental report filed with the NRC and no environmental assessment, environmental impact statement or finding of no significant impact or any supplement to any of the foregoing issued by the NRC before June 7, 1984, need be redone and no notice of intent to prepare an environmental impact statement or notice of availability of these environmental documents need be republished solely by reason of the promulgation on March 12, 1984, of this revision of part 51.

[49 FR 9381, Mar. 12, 1984, as amended at 49 FR 24513, June 14, 1984]

§ 51.13 Emergencies.

Whenever emergency circumstances make it necessary and whenever, in other situations, the health and safety of the public may be adversely affected if mitigative or remedial actions are delayed, the Commission may take an action with significant environmental impact without observing the provisions of these regulations. In taking an action covered by this section, the Commission will consult with the Council as soon as feasible concerning appropriate alternative NEPA arrangements.

§ 51.14 Definitions.

(a) As used in this subpart:

Categorical Exclusion means a category of actions which do not individually or cumulatively have a significant effect on the human environment and which the Commission has found to have no such effect in accordance with procedures set out in § 51.22, and for which, therefore, neither an environmental assessment nor an environmental impact statement is required.

Cooperating Agency means any Federal agency other than the NRC which has jurisdiction by law or special expertise with respect to any environmental impact involved in a proposal (or a reasonable alternative) for legislation or other major Federal action significantly affecting the quality of the human environment. By agreement with the Commission, a State or local agency of similar qualifications or, when the effects are on a reservation, an Indian Tribe, may become a cooperating agency.

Council means the Council on Environmental Quality (CEQ) established by Title II of NEPA.

DOE means the U.S. Department of Energy or its duly authorized representatives.

Environmental Assessment means a concise public document for which the Commission is responsible that serves to:

(1) Briefly provide sufficient evidence and analysis for determining whether to prepare an environmental impact statement or a finding of no significant impact.

(2) Aid the Commission's compliance with NEPA when no environmental impact statement is necessary.

(3) Facilitate preparation of an environmental impact statement when one is necessary.

Environmental document includes an environmental assessment, an environmental impact statement, a finding of no significant impact, an environmental report and any supplements to or comments upon those documents, and a notice of intent.

Environmental Impact Statement means a detailed written statement as required by section 102(2)(C) of NEPA.

Environmental report means a document submitted to the Commission by an applicant for a permit, license, or other form of permission, or an amendment to or renewal of a permit, license or other form of permission, or by a petitioner for rulemaking, in order to aid the Commission in complying with section 102(2) of NEPA.

Finding of No Significant Impact means a concise public document for

which the Commission is responsible that briefly states the reasons why an action, not otherwise excluded, will not have a significant effect on the human environment and for which therefore an environmental impact statement will not be prepared.

NEPA means the National Environmental Policy Act of 1969, as amended (Pub. L. 91–190, 83 Stat. 852, 856, as amended by Pub. L. 94–83, 89 Stat. 424, 42 U.S.C. 4321, *et seq.*).

Notice of Intent means a notice that an environmental impact statement will be prepared and considered.

Uranium enrichment facility means:

(1) Any facility used for separating the isotopes for uranium or enriching uranium in the isotope 235, except laboratory scale facilities designed or used for experimental or analytical purposes only; or

(2) Any equipment or device, or important component part especially designed for such equipment or device, capable of separating the isotopes of uranium or enriching uranium in the isotope 235.

(b) The definitions in 40 CFR 1508.3, 1508.7, 1508.8, 1508.14, 1508.15, 1508.16, 1508.17, 1508.18, 1508.20, 1508.23, 1508.25, 1508.26, and 1508.27, will also be used in implementing section 102(2) of NEPA.

[49 FR 9381, Mar. 12, 1984, as amended at 57 FR 18391, Apr. 30, 1992]

§51.15 Time schedules.

Consistent with the purposes of NEPA, the Administrative Procedure Act, the Commission's rules of practice in part 2 of this chapter, §§51.100 and 51.101, and with other essential considerations of national policy:

(a) The appropriate NRC staff director may, and upon the request of an applicant for a proposed action or a petitioner for rulemaking shall, establish a time schedule for all or any constituent part of the NRC staff NEPA process. To the maximum extent practicable, the NRC staff will conduct its NEPA review in accordance with any time schedule established under this section.

(b) As specified in 10 CFR part 2, the presiding officer, the Atomic Safety and Licensing Board or the Commissioners acting as a collegial body may establish a time schedule for all or any part of an adjudicatory or rulemaking proceeding to the extent that each has jurisdiction.

[49 FR 9381, Mar. 12, 1984, as amended at 69 FR 2276, Jan. 14, 2004]

§51.16 Proprietary information.

(a) Proprietary information, such as trade secrets or privileged or confidential commercial or financial information, will be treated in accordance with the procedures provided in §2.390 of this chapter.

(b) Any proprietary information which a person seeks to have withheld from public disclosure shall be submitted in accordance with §2.390 of this chapter. When submitted, the proprietary information should be clearly identified and accompanied by a request, containing detailed reasons and justifications, that the proprietary information be withheld from public disclosure. A non-proprietary summary describing the general content of the proprietary information should also be provided.

[69 FR 2276, Jan. 14, 2004]

§51.17 Information collection requirements; OMB approval.

(a) The Nuclear Regulatory Commission has submitted the information collection requirements contained in this part to the Office of Management and Budget (OMB) for approval as required by the Paperwork Reduction Act (44 U.S.C. 3501 *et seq.*). The NRC may not conduct or sponsor, and a person is not required to respond to, a collection of information unless it displays a currently valid OMB control number. OMB has approved the information collection requirements contained in this part under control number 3150–0021.

(b) The approved information collection requirements in this part appear in §§51.6, 51.16, 51.41, 51.45, 51.49, 51.50, 51.51, 51.52, 51.53, 51.54, 51.55, 51.58, 51.60, 51.61, 51.62, 51.66, 51.68, and 51.69.

[49 FR 24513, June 14, 1984, as amended at 62 FR 52188, Oct. 6, 1997; 67 FR 67100, Nov. 4, 2002; 72 FR 57443, Oct. 9, 2007]

PRELIMINARY PROCEDURES

CLASSIFICATION OF LICENSING AND REGULATORY ACTIONS

§ 51.20 Criteria for and identification of licensing and regulatory actions requiring environmental impact statements.

(a) Licensing and regulatory actions requiring an environmental impact statement shall meet at least one of the following criteria:

(1) The proposed action is a major Federal action significantly affecting the quality of the human environment.

(2) The proposed action involves a matter which the Commission, in the exercise of its discretion, has determined should be covered by an environmental impact statement.

(b) The following types of actions require an environmental impact statement or a supplement to an environmental impact statement:

(1) Issuance of a limited work authorization or a permit to construct a nuclear power reactor, testing facility, or fuel reprocessing plant under part 50 of this chapter, or issuance of an early site permit under part 52 of this chapter.

(2) Issuance or renewal of a full power or design capacity license to operate a nuclear power reactor, testing facility, or fuel reprocessing plant under part 50 of this chapter, or a combined license under part 52 of this chapter.

(3) Issuance of a permit to construct or a design capacity license to operate or renewal of a design capacity license to operate an isotopic enrichment plant pursuant to part 50 of this chapter.

(4) Conversion of a provisional operating license for a nuclear power reactor, testing facility or fuel reprocessing plant to a full term or design capacity license pursuant to part 50 of this chapter if a final environmental impact statement covering full term or design capacity operation has not been previously prepared.

(5)–(6) [Reserved]

(7) Issuance of a license to possess and use special nuclear material for processing and fuel fabrication, scrap recovery, or conversion of uranium hexafluoride pursuant to part 70 of this chapter.

(8) Issuance of a license to possess and use source material for uranium milling or production of uranium hexafluoride pursuant to part 40 of this chapter.

(9) Issuance of a license pursuant to part 72 of this chapter for the storage of spent fuel in an independent spent fuel storage installation (ISFSI) at a site not occupied by a nuclear power reactor, or for the storage of spent fuel or high-level radioactive waste in a monitored retrievable storage installation (MRS).

(10) Issuance of a license for a uranium enrichment facility.

(11) Issuance of renewal of a license authorizing receipt and disposal of radioactive waste from other persons pursuant to part 61 of this chapter.

(12) Issuance of a license amendment pursuant to part 61 of this chapter authorizing (i) closure of a land disposal site, (ii) transfer of the license to the disposal site owner for the purpose of institutional control, or (iii) termination of the license at the end of the institutional control period.

(13) Issuance of a construction authorization and license pursuant to part 60 or part 63 of this chapter.

(14) Any other action which the Commission determines is a major Commission action significantly affecting the quality of the human environment. As provided in § 51.22(b), the Commission may, in special circumstances, prepare an environmental impact statement on an action covered by a categorical exclusion.

[49 FR 9381, Mar. 12, 1984, as amended at 53 FR 31681, Aug. 19, 1988; 53 FR 24052, June 27, 1988; 54 FR 15398, Apr. 18, 1989; 54 FR 27870, July 3, 1989; 57 FR 18392, Apr. 30, 1992; 66 FR 55790, Nov. 2, 2001; 72 FR 49509, Aug. 28, 2007]

§ 51.21 Criteria for and identification of licensing and regulatory actions requiring environmental assessments.

All licensing and regulatory actions subject to this subpart require an environmental assessment except those identified in § 51.20(b) as requiring an environmental impact statement, those identified in § 51.22(c) as categorical exclusions, and those identified in § 51.22(d) as other actions not requiring environmental review. As provided in

§51.22(b), the Commission may, in special circumstances, prepare an environmental assessment on an action covered by a categorical exclusion.

[54 FR 27870, July 3, 1989]

§51.22 Criterion for categorical exclusion; identification of licensing and regulatory actions eligible for categorical exclusion or otherwise not requiring environmental review.

(a) Licensing, regulatory, and administrative actions eligible for categorical exclusion shall meet the following criterion: The action belongs to a category of actions which the Commission, by rule or regulation, has declared to be a categorical exclusion, after first finding that the category of actions does not individually or cumulatively have a significant effect on the human environment.

(b) Except in special circumstances, as determined by the Commission upon its own initiative or upon request of any interested person, an environmental assessment or an environmental impact statement is not required for any action within a category of actions included in the list of categorical exclusions set out in paragraph (c) of this section. Special circumstances include the circumstance where the proposed action involves unresolved conflicts concerning alternative uses of available resources within the meaning of section 102(2)(E) of NEPA.

(c) The following categories of actions are categorical exclusions:

(1) Amendments to parts 1, 2, 4, 5, 7, 8, 9, 10, 11, 12, 13, 15, 16, 19, 21, 25, 26, 55, 75, 95, 110, 140, 150, 160, 170, or 171 of this chapter, and actions on petitions for rulemaking relating to parts 1, 2, 4, 5, 7, 9, 10, 11, 12, 13, 14, 15, 16, 19, 21, 25, 26, 55, 75, 95, 110, 140, 150, 160, 170, or 171 of this chapter.

(2) Amendments to the regulations in this chapter which are corrective or of a minor or nonpolicy nature and do not substantially modify existing regulations, and actions on petitions for rulemaking relating to these amendments.

(3) Amendments to parts 20, 30, 31, 32, 33, 34, 35, 37, 39, 40, 50, 51, 52, 54, 60, 61, 63, 70, 71, 72, 73, 74, 81, and 100 of this chapter which relate to—

(i) Procedures for filing and reviewing applications for licenses or construction permits or early site permits or other forms of permission or for amendments to or renewals of licenses or construction permits or early site permits or other forms of permission;

(ii) Recordkeeping requirements;

(iii) Reporting requirements;

(iv) Education, training, experience, qualification or other employment suitability requirements or

(v) Actions on petitions for rulemaking relating to these amendments.

(4) Entrance into or amendment, suspension, or termination of all or part of an agreement with a State pursuant to section 274 of the Atomic Energy Act of 1954, as amended, providing for assumption by the State and discontinuance by the Commission of certain regulatory authority of the Commission.

(5) Procurement of general equipment and supplies.

(6) Procurement of technical assistance, confirmatory research provided that the confirmatory research does not involve any significant construction impacts, and personal services relating to the safe operation and protection of commercial reactors, other facilities, and materials subject to NRC licensing and regulation.

(7) Personnel actions.

(8) Issuance, amendment, or renewal of operators' licenses pursuant to part 55 of this chapter.

(9) Issuance of an amendment to a permit or license for a reactor under part 50 or part 52 of this chapter that changes a requirement or issuance of an exemption from a requirement, with respect to installation or use of a facility component located within the restricted area, as defined in part 20 of this chapter; or the issuance of an amendment to a permit or license for a reactor under part 50 or part 52 of this chapter that changes an inspection or a surveillance requirement; provided that:

(i) The amendment or exemption involves no significant hazards consideration;

(ii) There is no significant change in the types or significant increase in the amounts of any effluents that may be released offsite; and

(iii) There is no significant increase in individual or cumulative occupational radiation exposure.

(10) Issuance of an amendment to a permit or license issued under this chapter which—

(i) Changes surety, insurance and/or indemnity requirements;

(ii) Changes recordkeeping, reporting, or administrative procedures or requirements;

(iii) Changes the licensee's or permit holder's name, phone number, business or e-mail address;

(iv) Changes the name, position, or title of an officer of the licensee or permit holder, including but not limited to, the radiation safety officer or quality assurance manager; or

(v) Changes the format of the license or permit or otherwise makes editorial, corrective or other minor revisions, including the updating of NRC approved references.

(11) Issuance of amendments to licenses for fuel cycle plants and radioactive waste disposal sites and amendments to materials licenses identified in § 51.60(b)(1) which are administrative, organizational, or procedural in nature, or which result in a change in process operations or equipment, provided that (i) there is no significant change in the types or significant increase in the amounts of any effluents that may be released offsite, (ii) there is no significant increase in individual or cumulative occupational radiation exposure, (iii) there is no significant construction impact, and (iv) there is no significant increase in the potential for or consequences from radiological accidents.

(12) Issuance of an amendment to a license under parts 50, 52, 60, 61, 63, 70, 72, or 75 of this chapter relating solely to safeguards matters (*i.e.*, protection against sabotage or loss or diversion of special nuclear material) or issuance of an approval of a safeguards plan submitted under parts 50, 52, 70, 72, and 73 of this chapter, provided that the amendment or approval does not involve any significant construction impacts. These amendments and approvals are confined to—

(i) Organizational and procedural matters;

(ii) Modifications to systems used for security and/or materials accountability;

(iii) Administrative changes; and

(iv) Review and approval of transportation routes pursuant to 10 CFR 73.37.

(13) Approval of package designs for packages to be used for the transportation of licensed materials.

(14) Issuance, amendment, or renewal of materials licenses issued pursuant to 10 CFR parts 30, 31, 32, 33, 34, 35, 36, 39, 40 or part 70 authorizing the following types of activities:

(i) Distribution of radioactive material and devices or products containing radioactive material to general licensees and to persons exempt from licensing.

(ii) Distribution of radiopharmaceuticals, generators, reagent kits and/or sealed sources to persons licensed pursuant to 10 CFR 35.18.

(iii) Nuclear pharmacies.

(iv) Medical and veterinary.

(v) Use of radioactive materials for research and development and for educational purposes.

(vi) Industrial radiography.

(vii) Irradiators.

(viii) Use of sealed sources and use of gauging devices, analytical instruments and other devices containing sealed sources.

(ix) Use of uranium as shielding material in containers or devices.

(x) Possession of radioactive material incident to performing services such as installation, maintenance, leak tests and calibration.

(xi) Use of sealed sources and/or radioactive tracers in well-logging procedures.

(xii) Acceptance of packaged radioactive wastes from others for transfer to licensed land burial facilities provided the interim storage period for any package does not exceed 180 days and the total possession limit for all packages held in interim storage at the same time does not exceed 50 curies.

(xiii) Manufacturing or processing of source, byproduct, or special nuclear materials for distribution to other licensees, except processing of source material for extraction of rare earth and other metals.

(xiv) Nuclear laundries.

(xv) Possession, manufacturing, processing, shipment, testing, or other use of depleted uranium military munitions.

(xvi) Any use of source, byproduct, or special nuclear material not listed above which involves quantities and forms of source, byproduct, or special nuclear material similar to those listed in paragraphs (c)(14) (i) through (xv) of this section.

(15) Issuance, amendment or renewal of licenses for import of nuclear facilities and materials pursuant to part 110 of this chapter, except for import of spent power reactor fuel.

(16) Issuance or amendment of guides for the implementation of regulations in this chapter, and issuance or amendment of other informational and procedural documents that do not impose any legal requirements.

(17) Issuance of an amendment to a permit or license under parts 30, 40, 50, 52, or part 70 of this chapter which deletes any limiting condition of operation or monitoring requirement based on or applicable to any matter subject to the provisions of the Federal Water Pollution Control Act.

(18) Issuance of amendments or orders authorizing licensees of production or utilization facilities to resume operation, provided the basis for the authorization rests solely on a determination or redetermination by the Commission that applicable emergency planning requirements are met.

(19) Issuance, amendment, modification, or renewal of a certificate of compliance of gaseous diffusion enrichment facilities pursuant to 10 CFR part 76.

(20) Decommissioning of sites where licensed operations have been limited to the use of—

(i) Small quantities of short-lived radioactive materials;

(ii) Radioactive materials in sealed sources, provided there is no evidence of leakage of radioactive material from these sealed sources; or

(iii) Radioactive materials in such a manner that a decommissioning plan is not required by 10 CFR 30.36(g)(1), 40.42(g)(1), or 70.38(g)(1), and the NRC has determined that the facility meets the radiological criteria for unrestricted use in 10 CFR 20.1402 without further remediation or analysis.

(21) Approvals of direct or indirect transfers of any license issued by NRC and any associated amendments of license required to reflect the approval of a direct or indirect transfer of an NRC license.

(22) Issuance of a standard design approval under part 52 of this chapter.

(23) The Commission finding for a combined license under §52.103(g) of this chapter.

(24) Grants to institutions of higher education in the United States, to fund scholarships, fellowships, and stipends for the study of science, engineering, or another field of study that the NRC determines is in a critical skill area related to its regulatory mission, to support faculty and curricular development in such fields, and to support other domestic educational, technical assistance, or training programs (including those of trade schools) in such fields, except to the extent that such grants or programs include activities directly affecting the environment, such as:

(i) The construction of facilities;

(ii) A major disturbance brought about by blasting, drilling, excavating or other means;

(iii) Field work, except that which only involves noninvasive or non-harmful techniques such as taking water or soil samples or collecting non-protected species of flora and fauna; or

(iv) The release of radioactive material.

(25) Granting of an exemption from the requirements of any regulation of this chapter, provided that—

(i) There is no significant hazards consideration;

(ii) There is no significant change in the types or significant increase in the amounts of any effluents that may be released offsite;

(iii) There is no significant increase in individual or cumulative public or occupational radiation exposure;

(iv) There is no significant construction impact;

(v) There is no significant increase in the potential for or consequences from radiological accidents; and

(vi) The requirements from which an exemption is sought involve:

(A) Recordkeeping requirements;

(B) Reporting requirements;

(C) Inspection or surveillance requirements;

(D) Equipment servicing or maintenance scheduling requirements;

(E) Education, training, experience, qualification, requalification or other employment suitability requirements;

(F) Safeguard plans, and materials control and accounting inventory scheduling requirements;

(G) Scheduling requirements;

(H) Surety, insurance or indemnity requirements; or

(I) Other requirements of an administrative, managerial, or organizational nature.

(d) In accordance with section 121 of the Nuclear Waste Policy Act of 1982 (42 U.S.C. 10141), the promulgation of technical requirements and criteria that the Commission will apply in approving or disapproving applications under part 60 or 63 of this chapter shall not require an environmental impact statement, an environmental assessment, or any environmental review under subparagraph (E) or (F) of section 102(2) of NEPA.

[49 FR 9381, Mar. 12, 1984]

EDITORIAL NOTE: For FEDERAL REGISTER citations affecting § 51.22, see the List of CFR Sections Affected, which appears in the Finding Aids section of the printed volume and at *www.govinfo.gov*.

§ 51.23 Environmental impacts of continued storage of spent nuclear fuel beyond the licensed life for operation of a reactor.

(a) The Commission has generically determined that the environmental impacts of continued storage of spent nuclear fuel beyond the licensed life for operation of a reactor are those impacts identified in NUREG–2157, ''Generic Environmental Impact Statement for Continued Storage of Spent Nuclear Fuel.''

(b) The environmental reports described in §§ 51.50, 51.53, and 51.61 are not required to discuss the environmental impacts of spent nuclear fuel storage in a reactor facility storage pool or an ISFSI for the period following the term of the reactor operating license, reactor combined license, or ISFSI license. The impact determinations in NUREG–2157 regarding continued storage shall be deemed incorporated into the environmental impact statements described in §§ 51.75, 51.80(b), 51.95, and 51.97(a). The impact determinations in NUREG–2157 regarding continued storage shall be considered in the environmental assessments described in §§ 51.30(b) and 51.95(d), if the impacts of continued storage of spent fuel are relevant to the proposed action.

(c) This section does not alter any requirements to consider the environmental impacts of spent fuel storage during the term of a reactor operating license or combined license, or a license for an ISFSI in a licensing proceeding.

[49 FR 34694, Aug. 31, 1984, as amended at 55 FR 38474, Sept. 18, 1990; 72 FR 49509, Aug. 28, 2007; 75 FR 81037, Dec. 23, 2010; 79 FR 56260, Sept. 19, 2014]

DETERMINATIONS TO PREPARE ENVIRONMENTAL IMPACT STATEMENTS, ENVIRONMENTAL ASSESSMENTS OR FINDINGS OF NO SIGNIFICANT IMPACT, AND RELATED PROCEDURES

§ 51.25 Determination to prepare environmental impact statement or environmental assessment; eligibility for categorical exclusion.

Before taking a proposed action subject to the provisions of this subpart, the appropriate NRC staff director will determine on the basis of the criteria and classifications of types of actions in §§ 51.20, 51.21 and 51.22 of this subpart whether the proposed action is of the type listed in § 51.22(c) as a categorical exclusion or whether an environmental impact statement or an environmental assessment should be prepared. An environmental assessment is not necessary if it is determined that an environmental impact statement will be prepared.

§ 51.26 Requirement to publish notice of intent and conduct scoping process.

(a) Whenever the appropriate NRC staff director determines that an environmental impact statement will be prepared by NRC in connection with a proposed action, a notice of intent will be prepared as provided in § 51.27, and

will be published in the FEDERAL REGISTER as provided in §51.116, and an appropriate scoping process (see §§51.27, 51.28, and 51.29) will be conducted.

(b) The scoping process may include a public scoping meeting.

(c) Upon receipt of an application and accompanying environmental impact statement under §60.22 or §63.22 of this chapter (pertaining to geologic repositories for high-level radioactive waste), the appropriate NRC staff director will include in the notice of docketing required to be published by §2.101(f)(8) of this chapter a statement of Commission intention to adopt the environmental impact statement to the extent practicable. However, if the appropriate NRC staff director determines, at the time of such publication or at any time thereafter, that NRC should prepare a supplemental environmental impact statement in connection with the Commission's action on the license application, the NRC shall follow the procedures set out in paragraph (a) of this section.

(d) Whenever the appropriate NRC staff director determines that a supplement to an environmental impact statement will be prepared by the NRC, a notice of intent will be prepared as provided in §51.27, and will be published in the FEDERAL REGISTER as provided in §51.116. The NRC staff need not conduct a scoping process (see §§51.27, 51.28, and 51.29), provided, however, that if scoping is conducted, then the scoping must be directed at matters to be addressed in the supplement. If scoping is conducted in a proceeding for a combined license referencing an early site permit under part 52, then the scoping must be directed at matters to be addressed in the supplement as described in §51.92(e).

[49 FR 9381, Mar. 12, 1984, as amended at 54 FR 27870, July 3, 1989; 66 FR 55791, Nov. 2, 2001; 72 FR 49510, Aug. 28, 2007]

§51.27 Notice of intent.

(a) The notice of intent required by §51.26(a) shall:

(1) State that an environmental impact statement will be prepared;

(2) Describe the proposed action and, to the extent sufficient information is available, possible alternatives;

(3) State whether the applicant or petitioner for rulemaking has filed an environmental report, and, if so, where copies are available for public inspection;

(4) Describe the proposed scoping process, including the role of participants, whether written comments will be accepted, the last date for submitting comments and where comments should be sent, whether a public scoping meeting will be held, the time and place of any scoping meeting or when the time and place of the meeting will be announced; and

(5) State the name, address and telephone number of an individual in NRC who can provide information about the proposed action, the scoping process, and the environmental impact statement.

(b) The notice of intent required by §51.26(d) shall:

(1) State that a supplement to a final environmental impact statement will be prepared in accordance with §51.72 or §51.92. For a combined license application that references an early site permit, the supplement to the early site permit environmental impact statement will be prepared in accordance with §51.92(e);

(2) Describe the proposed action and, to the extent required, possible alternatives. For the case of a combined license referencing an early site permit, identify the proposed action as the issuance of a combined license for the construction and operation of a nuclear power plant as described in the combined license application at the site described in the early site permit referenced in the combined license application;

(3) Identify the environmental report prepared by the applicant and information on where copies are available for public inspection;

(4) Describe the matters to be addressed in the supplement to the final environmental impact statement;

(5) Describe any proposed scoping process that the NRC staff may conduct, including the role of participants, whether written comments will be accepted, the last date for submitting comments and where comments should be sent, whether a public scoping meeting will be held, the time and place of

any scoping meeting or when the time and place of the meeting will be announced; and

(6) State the name, address, and telephone number of an individual in NRC who can provide information about the proposed action, the scoping process, and the supplement to the environmental impact statement.

[49 FR 9381, Mar. 12, 1984, as amended at 72 FR 49510, Aug. 28, 2007]

SCOPING

§ 51.28 Scoping—participants.

(a) The appropriate NRC staff director shall invite the following persons to participate in the scoping process:

(1) The applicant or the petitioner for rulemaking;

(2) Any person who has petitioned for leave to intervene in the proceeding or who has been admitted as a party to the proceeding;

(3) Any other Federal agency which has jurisdiction by law or special expertise with respect to any environmental impact involved or which is authorized to develop and enforce relevant environmental standards;

(4) Affected State and local agencies, including those authorized to develop and enforce relevant environmental standards;

(5) Any affected Indian Tribe; and

(6) Any person who has requested an opportunity to participate in the scoping process.

(b) The appropriate NRC staff director may also invite any other appropriate person to participate in the scoping process.

(c) Participation in the scoping process for an environmental impact statement does not entitle the participant to become a party to the proceeding to which the environmental impact statement relates. Participation in an adjudicatory proceeding is governed by the procedures in §§ 2.309 and 2.315 of this chapter. Participation in a rulemaking proceeding in which the Commission has decided to have a hearing is governed by the provisions in the notice of hearing.

[49 FR 9381, Mar. 12, 1984, as amended at 74 FR 62682, Dec. 1, 2009]

§ 51.29 Scoping-environmental impact statement and supplement to environmental impact statement.

(a) The scoping process for an environmental impact statement shall begin as soon as practicable after publication of the notice of intent as provided in § 51.116, and shall be used to:

(1) Define the proposed action which is to be the subject of the statement or supplement. For environmental impact statements other than a supplement to an early site permit final environmental impact statement prepared for a combined license application, the provisions of 40 CFR 1502.4 will be used for this purpose. For a supplement to an early site permit final environmental impact statement prepared for a combined license application, the proposed action shall be as set forth in the relevant provisions of § 51.92(e).

(2) Determine the scope of the statement and identify the significant issues to be analyzed in depth.

(3) Identify and eliminate from detailed study issues which are peripheral or are not significant or which have been covered by prior environmental review. Discussion of these issues in the statement will be limited to a brief presentation of why they are peripheral or will not have a significant effect on the quality of the human environment or a reference to their coverage elsewhere.

(4) Identify any environmental assessments and other environmental impact statements which are being or will be prepared that are related to but are not part of the scope of the statement under consideration.

(5) Identify other environmental review and consultation requirements related to the proposed action so that other required analyses and studies may be prepared concurrently and integrated with the environmental impact statement.

(6) Indicate the relationship between the timing of the preparation of environmental analyses and the Commission's tentative planning and decision-making schedule.

(7) Identify any cooperating agencies, and as appropriate, allocate assignments for preparation and schedules for completion of the statement to the NRC and any cooperating agencies.

(8) Describe the means by which the environmental impact statement will be prepared, including any contractor assistance to be used.

(b) At the conclusion of the scoping process, the appropriate NRC staff director will prepare a concise summary of the determinations and conclusions reached, including the significant issues identified, and will send a copy of the summary to each participant in the scoping process.

(c) At any time prior to issuance of the draft environmental impact statement, the appropriate NRC staff director may revise the determinations made under paragraph (b) of this section, as appropriate, if substantial changes are made in the proposed action, or if significant new circumstances or information arise which bear on the proposed action or its impacts.

[49 FR 9381, Mar. 12, 1984, as amended at 72 FR 49510, Aug. 28, 2007]

ENVIRONMENTAL ASSESSMENT

§51.30 Environmental assessment.

(a) An environmental assessment for proposed actions, other than those for a standard design certification under 10 CFR part 52 or a manufacturing license under part 52, shall identify the proposed action and include:

(1) A brief discussion of:

(i) The need for the proposed action;

(ii) Alternatives as required by section 102(2)(E) of NEPA;

(iii) The environmental impacts of the proposed action and alternatives as appropriate; and

(2) A list of agencies and persons consulted, and identification of sources used.

(b) As stated in §51.23, the generic impact determinations regarding the continued storage of spent fuel in NUREG–2157 shall be considered in the environmental assessment, if the impacts of continued storage of spent fuel are relevant to the proposed action.

(c) An environmental assessment for a proposed action regarding a monitored retrievable storage installation (MRS) will not address the need for the MRS or any alternative to the design criteria for an MRS set forth in section 141(b)(1) of the Nuclear Waste Policy Act of 1982 (96 Stat. 2242, 42 U.S.C. 10161(b)(1)).

(d) An environmental assessment for a standard design certification under subpart B of part 52 of this chapter must identify the proposed action, and will be limited to the consideration of the costs and benefits of severe accident mitigation design alternatives and the bases for not incorporating severe accident mitigation design alternatives in the design certification. An environmental assessment for an amendment to a design certification will be limited to the consideration of whether the design change which is the subject of the proposed amendment renders a severe accident mitigation design alternative previously rejected in the earlier environmental assessment to become cost beneficial, or results in the identification of new severe accident mitigation design alternatives, in which case the costs and benefits of new severe accident mitigation design alternatives and the bases for not incorporating new severe accident mitigation design alternatives in the design certification must be addressed.

(e) An environmental assessment for a manufacturing license under subpart F of part 52 of this chapter must identify the proposed action, and will be limited to the consideration of the costs and benefits of severe accident mitigation design alternatives and the bases for not incorporating severe accident mitigation design alternatives in the manufacturing license. An environmental assessment for an amendment to a manufacturing license will be limited to consideration of whether the design change which is the subject of the proposed amendment either renders a severe accident mitigation design alternative previously rejected in an environmental assessment to become cost beneficial, or results in the identification of new severe accident mitigation design alternatives, in which case the costs and benefits of new severe accident mitigation design alternatives and the bases for not incorporating new severe accident mitigation design alternatives in the manufacturing license must be addressed. In either case, the environmental assessment will not

address the environmental impacts associated with manufacturing the reactor under the manufacturing license.

[49 FR 9381, Mar. 12, 1984, as amended at 49 FR 34694, Aug. 31, 1984; 53 FR 31681, Aug. 19, 1988; 72 FR 49510, Aug. 28, 2007; 79 FR 56260, Sept. 19, 2014]

§ 51.31 Determinations based on environmental assessment.

(a) *General*. Upon completion of an environmental assessment for proposed actions other than those involving a standard design certification or a manufacturing license under part 52 of this chapter, the appropriate NRC staff director will determine whether to prepare an environmental impact statement or a finding of no significant impact on the proposed action. As provided in § 51.33, a determination to prepare a draft finding of no significant impact may be made.

(b) *Standard design certification*. (1) For actions involving the issuance or amendment of a standard design certification, the Commission shall prepare a draft environmental assessment for public comment as part of the proposed rule. The proposed rule must state that:

(i) The Commission has determined in § 51.32 that there is no significant environmental impact associated with the issuance of the standard design certification or its amendment, as applicable; and

(ii) Comments on the environmental assessment will be limited to the consideration of SAMDAs as required by § 51.30(d).

(2) The Commission will prepare a final environmental assessment following the close of the public comment period for the proposed standard design certification.

(c) *Manufacturing license*. (1) Upon completion of the environmental assessment for actions involving issuance or amendment of a manufacturing license (manufacturing license environmental assessment), the appropriate NRC staff director will determine the costs and benefits of severe accident mitigation design alternatives and the bases for not incorporating severe accident mitigation design alternatives in the design of the reactor to be manufactured under the manufacturing license. The NRC staff director may determine to prepare a draft environmental assessment.

(2) The manufacturing license environmental assessment must state that:

(i) The Commission has determined in § 51.32 that there is no significant environmental impact associated with the issuance of a manufacturing license or an amendment to a manufacturing license, as applicable;

(ii) The environmental assessment will not address the environmental impacts associated with manufacturing the reactor under the manufacturing license; and

(iii) Comments on the environmental assessment will be limited to the consideration of severe accident mitigation design alternatives as required by § 51.30(e).

(3) If the NRC staff director makes a determination to prepare and issue a draft environmental assessment for public review and comment before making a final determination on the manufacturing license application, the assessment will be marked, ''Draft.'' The NRC notice of availability on the draft environmental assessment will include a request for comments which specifies where comments should be submitted and when the comment period expires. The notice will state that copies of the environmental assessment and any related environmental documents are available for public inspection and where inspections can be made. A copy of the final environmental assessment will be sent to the U.S. Environmental Protection Agency, the applicant, any party to a proceeding, each commenter, and any other Federal, State, and local agencies, and Indian Tribes, State, regional, and metropolitan clearinghouses expressing an interest in the action. Additional copies will be made available in accordance with § 51.123.

(4) When a hearing is held under the regulations in part 2 of this chapter on the proposed issuance of the manufacturing license or amendment, the NRC staff director will prepare a final environmental assessment which may be subject to modification as a result of review and decision as appropriate to the nature and scope of the proceeding.

(5) Only a party admitted into the proceeding with respect to a contention on the environmental assessment, or an entity participating in the proceeding pursuant to §2.315(c) of this chapter, may take a position and offer evidence on the matters within the scope of the environmental assessment.

[72 FR 49510, Aug. 28, 2007]

FINDING OF NO SIGNIFICANT IMPACT

§51.32 Finding of no significant impact.

(a) A finding of no significant impact will:

(1) Identify the proposed action;

(2) State that the Commission has determined not to prepare an environmental impact statement for the proposed action;

(3) Briefly present the reasons why the proposed action will not have a significant effect on the quality of the human environment;

(4) Include the environmental assessment or a summary of the environmental assessment. If the assessment is included, the finding need not repeat any of the discussion in the assessment but may incorporate it by reference;

(5) Note any other related environmental documents; and

(6) State that the finding and any related environmental documents are available for public inspection and where the documents may be inspected.

(b) The Commission finds that there is no significant environmental impact associated with the issuance of:

(1) A standard design certification under subpart B of part 52 of this chapter;

(2) An amendment to a design certification;

(3) A manufacturing license under subpart F of part 52 of this chapter; or

(4) An amendment to a manufacturing license.

[49 FR 9381, Mar. 12, 1984, as amended at 72 FR 49511, Aug. 28, 2007]

§51.33 Draft finding of no significant impact; distribution.

(a) As provided in paragraph (b) of this section, the appropriate NRC staff director may make a determination to prepare and issue a draft finding of no significant impact for public review and comment before making a final determination whether to prepare an environmental impact statement or a final finding of no significant impact on the proposed action.

(b) Circumstances in which a draft finding of no significant impact may be prepared will ordinarily include the following:

(1) A finding of no significant impact appears warranted for the proposed action but the proposed action is (i) closely similar to one which normally requires the preparation of an environmental impact statement, or (ii) without precedent; and

(2) The appropriate NRC staff director determines that preparation of a draft finding of no significant impact will further the purposes of NEPA.

(c) A draft finding of no significant impact will (1) be marked ''Draft'', (2) contain the information specified in §51.32, (3) be accompanied by or include a request for comments on the proposed action and on the draft finding within thirty (30) days, or such longer period as may be specified in the notice of the draft finding, and (4) be published in the FEDERAL REGISTER as required by §§51.35 and 51.119.

(d) A draft finding will be distributed as provided in §51.74(a). Additional copies will be made available in accordance with §51.123.

(e) When a draft finding of no significant impact is issued for a proposed action, a final determination to prepare an environmental impact statement or a final finding of no significant impact for that action shall not be made until the last day of the public comment period has expired.

§51.34 Preparation of finding of no significant impact.

(a) Except as provided in paragraph (b) of this section, the finding of no significant impact will be prepared by the NRC staff director authorized to take the action.

(b) When a hearing is held on the proposed action under the regulations in subpart G of part 2 of this chapter or when the action can only be taken by the Commissioners acting as a collegial body, the appropriate NRC staff director will prepare a proposed finding of no significant impact, which may be

subject to modification as a result of review and decision as appropriate to the nature and scope of the proceeding. In such cases, the presiding officer, or the Commission acting as a collegial body, as appropriate, will issue the final finding of no significant impact.

[49 FR 9381, Mar. 12, 1984, as amended at 77 FR 46600, Aug. 3, 2012; 79 FR 66604, Nov. 10, 2014]

§ 51.35 Requirement to publish finding of no significant impact; limitation on Commission action.

(a) Whenever the Commission makes a draft or final finding of no significant impact on a proposed action, the finding will be published in the FEDERAL REGISTER as provided in § 51.119.

(b) Except as provided in § 51.13, the Commission shall not take the proposed action until after the final finding has been published in the FEDERAL REGISTER.

ENVIRONMENTAL REPORTS AND INFORMATION—REQUIREMENTS APPLICABLE TO APPLICANTS AND PETITIONERS FOR RULEMAKING

GENERAL

§ 51.40 Consultation with NRC staff.

(a) A prospective applicant or petitioner for rulemaking is encouraged to confer with NRC staff as early as possible in its planning process before submitting environmental information or filing an environmental report.

(b) Requests for guidance or information on environmental matters may include inquiries relating to:

(1) Applicable NRC rules and regulations;

(2) Format, content and procedures for filing environmental reports and other environmental information, including the type and quantity of environmental information likely to be needed to address issues and concerns identified in the scoping process described in § 51.29 in a manner appropriate to their relative significance;

(3) Availability of relevant environmental studies and environmental information;

(4) Need for, appropriate level and scope of any environmental studies or information which the Commission may require to be submitted in connection with an application or petition for rulemaking;

(5) Public meetings with NRC staff.

(c) Questions concerning environmental matters should be addressed to the following NRC staff offices as appropriate:

(1) *Utilization facilities:* ATTN: Document Control Desk, Director, Office of Nuclear Reactor Regulation, U.S. Nuclear Regulatory Commission, Washington, DC 20555–0001, telephone (301) 415–1270, e-mail *RidsNrrOd@nrc.gov*.

(2) *Production facilities:* ATTN: Document Control Desk, Director, Office of Nuclear Material Safety and Safeguards, U.S. Nuclear Regulatory Commission, Washington, DC 20555–0001, telephone (301) 415–7800, e-mail *RidsNmssOd@nrc.gov*.

(3) *Materials licenses:* ATTN: Document Control Desk, Director, Office of Nuclear Material Safety and Safeguards, U.S. Nuclear Regulatory Commission, Washington, DC 20555–0001, telephone (301) 415–7800, e-mail *RidsNmssOd@nrc.gov*.

(4) *Rulemaking:* ATTN: Chief, Regulatory Analysis and Rulemaking Support Branch, Division of Rulemaking, Environmental, and Financial Support, Office of Nuclear Material Safety and Safeguards, U.S. Nuclear Regulatory Commission, Washington, DC 20555–0001, telephone (800) 368–5642.

(5) *General Environmental Matters:* Executive Director for Operations, U.S. Nuclear Regulatory Commission, Washington, DC 20555, Telephone: (301) 415–1700.

[49 FR 9381, Mar. 12, 1984, as amended at 53 FR 13399, Apr. 25, 1988; 60 FR 24552, May 9, 1995; 68 FR 58810, Oct. 10, 2003; 73 FR 5724, Jan. 31, 2008; 84 FR 65644, Nov. 29, 2019]

§ 51.41 Requirement to submit environmental information.

The Commission may require an applicant for a permit, license, or other form of permission, or amendment to or renewal of a permit, license or other form of permission, or a petitioner for rulemaking to submit such information to the Commission as may be useful in aiding the Commission in complying with section 102(2) of NEPA. The

Commission will independently evaluate and be responsible for the reliability of any information which it uses.

ENVIRONMENTAL REPORTS—GENERAL REQUIREMENTS

§51.45 Environmental report.

(a) *General.* As required by §§51.50, 51.53, 51.54, 51.55, 51.60, 51.61, 51.62, or 51.68, as appropriate, each applicant or petitioner for rulemaking shall submit with its application or petition for rulemaking one signed original of a separate document entitled ''Applicant's'' or ''Petitioner's Environmental Report,'' as appropriate. An applicant or petitioner for rulemaking may submit a supplement to an environmental report at any time.

(b) *Environmental considerations.* The environmental report shall contain a description of the proposed action, a statement of its purposes, a description of the environment affected, and discuss the following considerations:

(1) The impact of the proposed action on the environment. Impacts shall be discussed in proportion to their significance;

(2) Any adverse environmental effects which cannot be avoided should the proposal be implemented;

(3) Alternatives to the proposed action. The discussion of alternatives shall be sufficiently complete to aid the Commission in developing and exploring, pursuant to section 102(2)(E) of NEPA, ''appropriate alternatives to recommended courses of action in any proposal which involves unresolved conflicts concerning alternative uses of available resources.'' To the extent practicable, the environmental impacts of the proposal and the alternatives should be presented in comparative form;

(4) The relationship between local short-term uses of man's environment and the maintenance and enhancement of long-term productivity; and

(5) Any irreversible and irretrievable commitments of resources which would be involved in the proposed action should it be implemented.

(c) *Analysis.* The environmental report must include an analysis that considers and balances the environmental effects of the proposed action, the environmental impacts of alternatives to the proposed action, and alternatives available for reducing or avoiding adverse environmental effects. An environmental report required for materials licenses under §51.60 must also include a description of those site preparation activities excluded from the definition of construction under §51.4 which have been or will be undertaken at the proposed site (*i.e.*, those activities listed in paragraphs (2)(i) and (2)(ii) in the definition of construction contained in §51.4); a description of the impacts of such excluded site preparation activities; and an analysis of the cumulative impacts of the proposed action when added to the impacts of such excluded site preparation activities on the human environment. An environmental report prepared at the early site permit stage under §51.50(b), limited work authorization stage under §51.49, construction permit stage under §51.50(a), or combined license stage under §51.50(c) must include a description of impacts of the preconstruction activities performed by the applicant at the proposed site (*i.e.*, those activities listed in paragraph (1)(ii) in the definition of ''construction'' contained in §51.4), necessary to support the construction and operation of the facility which is the subject of the early site permit, limited work authorization, construction permit, or combined license application. The environmental report must also contain an analysis of the cumulative impacts of the activities to be authorized by the limited work authorization, construction permit, or combined license in light of the preconstruction impacts described in the environmental report. Except for an environmental report prepared at the early site permit stage, or an environmental report prepared at the license renewal stage under §51.53(c), the analysis in the environmental report should also include consideration of the economic, technical, and other benefits and costs of the proposed action and its alternatives. Environmental reports prepared at the license renewal stage under §51.53(c) need not discuss the economic or technical benefits and costs of either the proposed action or alternatives except if these benefits

and costs are either essential for a determination regarding the inclusion of an alternative in the range of alternatives considered or relevant to mitigation. In addition, environmental reports prepared under § 51.53(c) need not discuss issues not related to the environmental effects of the proposed action and its alternatives. The analyses for environmental reports shall, to the fullest extent practicable, quantify the various factors considered. To the extent that there are important qualitative considerations or factors that cannot be quantified, those considerations or factors shall be discussed in qualitative terms. The environmental report should contain sufficient data to aid the Commission in its development of an independent analysis.

(d) *Status of compliance.* The environmental report shall list all Federal permits, licenses, approvals and other entitlements which must be obtained in connection with the proposed action and shall describe the status of compliance with these requirements. The environmental report shall also include a discussion of the status of compliance with applicable environmental quality standards and requirements including, but not limited to, applicable zoning and land-use regulations, and thermal and other water pollution limitations or requirements which have been imposed by Federal, State, regional, and local agencies having responsibility for environmental protection. The discussion of alternatives in the report shall include a discussion of whether the alternatives will comply with such applicable environmental quality standards and requirements.

(e) *Adverse information.* The information submitted pursuant to paragraphs (b) through (d) of this section should not be confined to information supporting the proposed action but should also include adverse information.

[49 FR 9381, Mar. 12, 1984, as amended at 61 FR 28486, June 5, 1996; 61 FR 66542, Dec. 18, 1996; 68 FR 58810, Oct. 10, 2003; 72 FR 49511, Aug. 28, 2007; 72 FR 57443, Oct. 9, 2007; 73 FR 22787, Apr. 28, 2008; 76 FR 56965, Sept. 15, 2011]

ENVIRONMENTAL REPORTS—PRODUCTION AND UTILIZATION FACILITIES

§ 51.49 Environmental report—limited work authorization.

(a) *Limited work authorization submitted as part of complete construction permit or combined license application.* Each applicant for a construction permit or combined license applying for a limited work authorization under § 50.10(d) of this chapter in a complete application under 10 CFR 2.101(a)(1) through (a)(4), shall submit with its application a separate document, entitled, ''Applicant's Environmental Report—Limited Work Authorization Stage,'' which is in addition to the environmental report required by § 51.50 of this part. Each environmental report must also contain the following information:

(1) A description of the activities proposed to be conducted under the limited work authorization;

(2) A statement of the need for the activities; and

(3) A description of the environmental impacts that may reasonably be expected to result from the activities, the mitigation measures that the applicant proposes to implement to achieve the level of environmental impacts described, and a discussion of the reasons for rejecting mitigation measures that could be employed by the applicant to further reduce environmental impacts.

(b) *Phased application for limited work authorization and construction permit or combined license.* If the construction permit or combined license application is filed in accordance with § 2.101(a)(9) of this chapter, then the environmental report for part one of the application may be limited to a discussion of the activities proposed to be conducted under the limited work authorization. If the scope of the environmental report for part one is so limited, then part two of the application must include the information required by § 51.50, as applicable.

(c) *Limited work authorization submitted as part of an early site permit application.* Each applicant for an early site permit under subpart A of part 52 of this chapter requesting a limited work authorization shall submit with

its application the environmental report required by §51.50(b). Each environmental report must contain the following information:

(1) A description of the activities proposed to be conducted under the limited work authorization;

(2) A statement of the need for the activities; and

(3) A description of the environmental impacts that may reasonably be expected to result from the activities, the mitigation measures that the applicant proposes to implement to achieve the level of environmental impacts described, and a discussion of the reasons for rejecting mitigation measures that could be employed by the applicant to further reduce environmental impacts.

(d) *Limited work authorization request submitted by early site permit holder.* Each holder of an early site permit requesting a limited work authorization shall submit with its application a document entitled, ''Applicant's Environmental Report—Limited Work Authorization under Early Site Permit,'' containing the following information:

(1) A description of the activities proposed to be conducted under the limited work authorization;

(2) A statement of the need for the activities;

(3) A description of the environmental impacts that may reasonably be expected to result from the activities, the mitigation measures that the applicant proposes to implement to achieve the level of environmental impacts described, and a discussion of the reasons for rejecting mitigation measures that could be employed by the applicant to further reduce environmental impacts; and

(4) Any new and significant information for issues related to the impacts of construction of the facility that were resolved in the early site permit proceeding with respect to the environmental impacts of the activities to be conducted under the limited work authorization.

(5) A description of the process used to identify new and significant information regarding NRC's conclusions in the early site permit environmental impact statement. The process must be a reasonable methodology for identifying this new and significant information.

(e) *Limited work authorization for a site where an environmental impact statement was prepared, but the facility construction was not completed.* If the limited work authorization is for activities to be conducted at a site for which the Commission has previously prepared an environmental impact statement for the construction and operation of a nuclear power plant, and a construction permit was issued but construction of the plant was never completed, then the applicant's environmental report may incorporate by reference the earlier environmental impact statement. In the event of such referencing, the environmental report must identify:

(1) Any new and significant information material to issues related to the impacts of construction of the facility that were resolved in the construction permit proceeding for the matters required to be addressed in paragraph (a) of this section; and

(2) A description of the process used to identify new and significant information regarding the NRC's conclusions in the construction permit environmental impact statement. The process must use a reasonable methodology for identifying this new and significant information.

(f) *Environmental report.* An environmental report submitted in accordance with this section must separately evaluate the environmental impacts and proposed alternatives attributable to the activities proposed to be conducted under the limited work authorization. At the option of the applicant, the ''Applicant's Environmental Report—Limited Work Authorization Stage,'' may contain the information required to be submitted in the environmental report required under §51.50, which addresses the impacts of construction and operation for the proposed facility (including the environmental impacts attributable to the limited work authorization), and discusses the overall costs and benefits balancing for the proposed action.

[72 FR 57444, Oct. 9, 2007]

§ 51.50 Environmental report—construction permit, early site permit, or combined license stage.

(a) *Construction permit stage.* Each applicant for a permit to construct a production or utilization facility covered by § 51.20 shall submit with its application a separate document, entitled ''Applicant's Environmental Report—Construction Permit Stage,'' which shall contain the information specified in §§ 51.45, 51.51, and 51.52. Each environmental report shall identify procedures for reporting and keeping records of environmental data, and any conditions and monitoring requirements for protecting the non-aquatic environment, proposed for possible inclusion in the license as environmental conditions in accordance with § 50.36b of this chapter. As stated in § 51.23, no discussion of the environmental impacts of the continued storage of spent fuel is required in this report.

(b) *Early site permit stage.* Each applicant for an early site permit shall submit with its application a separate document, entitled ''Applicant's Environmental Report—Early Site Permit Stage,'' which shall contain the information specified in §§ 51.45, 51.51, and 51.52, as modified in this paragraph.

(1) The environmental report must include an evaluation of alternative sites to determine whether there is any obviously superior alternative to the site proposed.

(2) The environmental report may address one or more of the environmental effects of construction and operation of a reactor, or reactors, which have design characteristics that fall within the site characteristics and design parameters for the early site permit application, provided however, that the environmental report must address all environmental effects of construction and operation necessary to determine whether there is any obviously superior alternative to the site proposed. The environmental report need not include an assessment of the economic, technical, or other benefits (for example, need for power) and costs of the proposed action or an evaluation of alternative energy sources. As stated in § 51.23, no discussion of the environmental impacts of the continued storage of spent fuel is required in this report.

(3) For other than light-water-cooled nuclear power reactors, the environmental report must contain the basis for evaluating the contribution of the environmental effects of fuel cycle activities for the nuclear power reactor.

(4) Each environmental report must identify the procedures for reporting and keeping records of environmental data, and any conditions and monitoring requirements for protecting the non-aquatic environment, proposed for possible inclusion in the license as environmental conditions in accordance with § 50.36b of this chapter.

(c) *Combined license stage.* Each applicant for a combined license shall submit with its application a separate document, entitled ''Applicant's Environmental Report—Combined License Stage.'' Each environmental report shall contain the information specified in §§ 51.45, 51.51, and 51.52, as modified in this paragraph. For other than light-water-cooled nuclear power reactors, the environmental report shall contain the basis for evaluating the contribution of the environmental effects of fuel cycle activities for the nuclear power reactor. Each environmental report shall identify procedures for reporting and keeping records of environmental data, and any conditions and monitoring requirements for protecting the non-aquatic environment, proposed for possible inclusion in the license as environmental conditions in accordance with § 50.36b of this chapter. The combined license environmental report may reference information contained in a final environmental document previously prepared by the NRC staff. As stated in § 51.23, no discussion of the environmental impacts of the continued storage of spent fuel is required in this report.

(1) *Application referencing an early site permit.* If the combined license application references an early site permit, then the ''Applicant's Environmental Report—Combined License Stage'' need not contain information or analyses submitted to the Commission in ''Applicant's Environmental Report—Early Site Permit Stage,'' or resolved in the Commission's early site permit environmental impact statement, but must

contain, in addition to the environmental information and analyses otherwise required:

(i) Information to demonstrate that the design of the facility falls within the site characteristics and design parameters specified in the early site permit;

(ii) Information to resolve any significant environmental issue that was not resolved in the early site permit proceeding;

(iii) Any new and significant information for issues related to the impacts of construction and operation of the facility that were resolved in the early site permit proceeding;

(iv) A description of the process used to identify new and significant information regarding the NRC's conclusions in the early site permit environmental impact statement. The process must use a reasonable methodology for identifying such new and significant information; and

(v) A demonstration that all environmental terms and conditions that have been included in the early site permit will be satisfied by the date of issuance of the combined license. Any terms or conditions of the early site permit that could not be met by the time of issuance of the combined license, must be set forth as terms or conditions of the combined license.

(2) *Application referencing standard design certification*. If the combined license references a standard design certification, then the combined license environmental report may incorporate by reference the environmental assessment previously prepared by the NRC for the referenced design certification. If the design certification environmental assessment is referenced, then the combined license environmental report must contain information to demonstrate that the site characteristics for the combined license site fall within the site parameters in the design certification environmental assessment.

(3) *Application referencing a manufactured reactor*. If the combined license application proposes to use a manufactured reactor, then the combined license environmental report may incorporate by reference the environmental assessment previously prepared by the NRC for the underlying manufacturing license. If the manufacturing license environmental assessment is referenced, then the combined license environmental report must contain information to demonstrate that the site characteristics for the combined license site fall within the site parameters in the manufacturing license environmental assessment. The environmental report need not address the environmental impacts associated with manufacturing the reactor under the manufacturing license.

[72 FR 49511, Aug. 28, 2007, as amended at 79 FR 56260, Sept. 19, 2014]

§51.51 Uranium fuel cycle environmental data—Table S–3.

(a) Under §51.50, every environmental report prepared for the construction permit stage or early site permit stage or combined license stage of a light-water-cooled nuclear power reactor, and submitted on or after September 4, 1979, shall take Table S–3, Table of Uranium Fuel Cycle Environmental Data, as the basis for evaluating the contribution of the environmental effects of uranium mining and milling, the production of uranium hexafluoride, isotopic enrichment, fuel fabrication, reprocessing of irradiated fuel, transportation of radioactive materials and management of low-level wastes and high-level wastes related to uranium fuel cycle activities to the environmental costs of licensing the nuclear power reactor. Table S–3 shall be included in the environmental report and may be supplemented by a discussion of the environmental significance of the data set forth in the table as weighed in the analysis for the proposed facility.

(b) Table S–3.

TABLE S–3—TABLE OF URANIUM FUEL CYCLE ENVIRONMENTAL DATA [1]

[Normalized to model LWR annual fuel requirement [WASH–1248] or reference reactor year [NUREG–0116]]

[See footnotes at end of this table]

Environmental considerations	Total	Maximum effect per annual fuel requirement or reference reactor year of model 1,000 MWe LWR
NATURAL RESOURCE USE		
Land (acres):		
Temporarily committed [2]	100	
Undisturbed area	79	
Disturbed area	22	Equivalent to a 110 MWe coal-fired power plant.
Permanently committed	13	
Overburden moved (millions of MT)	2.8	Equivalent to 95 MWe coal-fired power plant.
Water (millions of gallons):		
Discharged to air	160	= 2 percent of model 1,000 MWe LWR with cooling tower.
Discharged to water bodies	11,090	
Discharged to ground	127	
Total	11,377	<4 percent of model 1,000 MWe LWR with once-through cooling.
Fossil fuel:		
Electrical energy (thousands of MW-hour)	323	<5 percent of model 1,000 MWe LWR output.
Equivalent coal (thousands of MT)	118	Equivalent to the consumption of a 45 MWe coal-fired power plant.
Natural gas (millions of scf)	135	<0.4 percent of model 1,000 MWe energy output.
EFFLUENTS—CHEMICAL (MT)		
Gases (including entrainment): [3]		
SO_X	4,400	
NO_X [4]	1,190	Equivalent to emissions from 45 MWe coal-fired plant for a year.
Hydrocarbons	14	
CO	29.6	
Particulates	1,154	
Other gases:		
F	.67	Principally from UF_6 production, enrichment, and reprocessing. Concentration within range of state standards—below level that has effects on human health.
HCl	.014	
Liquids:		
SO^{-}_{4}	9.9	From enrichment, fuel fabrication, and reprocessing steps. Components that constitute a potential for adverse environmental effect are present in dilute concentrations and receive additional dilution by receiving bodies of water to levels below permissible standards. The constituents that require dilution and the flow of dilution water are: NH_3—600 cfs., NO_3—20 cfs., Fluoride—70 cfs.
NO^{-}_{3}	25.8	
Fluoride	12.9	
Ca^{+}	5.4	
$C1^{-}$	8.5	
Na^{+}	12.1	
NH_3	10.0	
Fe	.4	
Tailings solutions (thousands of MT)	240	From mills only—no significant effluents to environment.
Solids	91,000	Principally from mills—no significant effluents to environment.
Effluents—Radiological (curies)		
Gases (including entrainment):		
Rn–222	.....	Presently under reconsideration by the Commission.
Ra–226	.02	
Th–230	.02	
Uranium	.034	
Tritium (thousands)	18.1	
C–14	24	
Kr–85 (thousands)	400	
Ru–106	.14	Principally from fuel reprocessing plants.
I–129	1.3	
I–131	.83	
Tc–99	.....	Presently under consideration by the Commission.
Fission products and transuranics	.203	
Liquids:		
Uranium and daughters	2.1	Principally from milling—included tailings liquor and returned to ground—no effluents; therefore, no effect on environment.
Ra–226	.0034	From UF_6 production.
Th–230	.0015	

TABLE S–3—TABLE OF URANIUM FUEL CYCLE ENVIRONMENTAL DATA [1]—Continued

[Normalized to model LWR annual fuel requirement [WASH–1248] or reference reactor year [NUREG–0116]]

[See footnotes at end of this table]

Environmental considerations	Total	Maximum effect per annual fuel requirement or reference reactor year of model 1,000 MWe LWR
Th–234	.01	From fuel fabrication plants—concentration 10 percent of 10 CFR 20 for total processing 26 annual fuel requirements for model LWR.
Fission and activation products	5.9×10^{-6}	
Solids (buried on site):		
Other than high level (shallow)	11,300	9,100 Ci comes from low level reactor wastes and 1,500 Ci comes from reactor decontamination and decommissioning—buried at land burial facilities. 600 Ci comes from mills—included in tailings returned to ground. Approximately 60 Ci comes from conversion and spent fuel storage. No significant effluent to the environment.
TRU and HLW (deep)	1.1×10^{7}	Buried at Federal Repository.
Effluents—thermal (billions of British thermal units)	4,063	<5 percent of model 1,000 MWe LWR.
Transportation (person-rem):		
Exposure of workers and general public	2.5	
Occupational exposure (person-rem)	22.6	From reprocessing and waste management.

[1] In some cases where no entry appears it is clear from the background documents that the matter was addressed and that, in effect, the Table should be read as if a specific zero entry had been made. However, there are other areas that are not addressed at all in the Table. Table S–3 does not include health effects from the effluents described in the Table, or estimates of releases of Radon-222 from the uranium fuel cycle or estimates of Technetium-99 released from waste management or reprocessing activities. These issues may be the subject of litigation in the individual licensing proceedings.

Data supporting this table are given in the "Environmental Survey of the Uranium Fuel Cycle," WASH–1248, April 1974; the "Environmental Survey of the Reprocessing and Waste Management Portion of the LWR Fuel Cycle," NUREG–0116 (Supp.1 to WASH–1248); the "Public Comments and Task Force Responses Regarding the Environmental Survey of the Reprocessing and Waste Management Portions of the LWR Fuel Cycle," NUREG–0216 (Supp. 2 to WASH–1248); and in the record of the final rulemaking pertaining to Uranium Fuel Cycle Impacts from Spent Fuel Reprocessing and Radioactive Waste Management, Docket RM–50–3. The contributions from reprocessing, waste management and transportation of wastes are maximized for either of the two fuel cycles (uranium only and no recycle). The contribution from transportation excludes transportation of cold fuel to a reactor and of irradiated fuel and radioactive wastes from a reactor which are considered in Table S–4 of §51.20(g). The contributions from the other steps of the fuel cycle are given in columns A–E of Table S–3A of WASH–1248.

[2] The contributions to temporarily committed land from reprocessing are not prorated over 30 years, since the complete temporary impact accrues regardless of whether the plant services one reactor for one year or 57 reactors for 30 years.

[3] Estimated effluents based upon combustion of equivalent coal for power generation.

[4] 1.2 percent from natural gas use and process.

[49 FR 9381, Mar. 12, 1984; 49 FR 10922, Mar. 23, 1984, as amended at 67 FR 77652, Dec. 19, 2002; 72 FR 49512, Aug. 28, 2007]

§51.52 Environmental effects of transportation of fuel and waste—Table S–4.

Under §51.50, every environmental report prepared for the construction permit stage or early site permit stage or combined license stage of a light-water-cooled nuclear power reactor, and submitted after February 4, 1975, shall contain a statement concerning transportation of fuel and radioactive wastes to and from the reactor. That statement shall indicate that the reactor and this transportation either meet all of the conditions in paragraph (a) of this section or all of the conditions of paragraph (b) of this section.

(a)(1) The reactor has a core thermal power level not exceeding 3,800 megawatts;

(2) The reactor fuel is in the form of sintered uranium dioxide pellets having a uranium-235 enrichment not exceeding 4% by weight, and the pellets are encapsulated in zircaloy rods;

(3) The average level of irradiation of the irradiated fuel from the reactor does not exceed 33,000 megawatt-days per metric ton, and no irradiated fuel assembly is shipped until at least 90 days after it is discharged from the reactor;

(4) With the exception of irradiated fuel, all radioactive waste shipped from the reactor is packaged and in a solid form;

(5) Unirradiated fuel is shipped to the reactor by truck; irradiated fuel is shipped from the reactor by truck, rail, or barge; and radioactive waste other than irradiated fuel is shipped from the reactor by truck or rail; and

(6) The environmental impacts of transportation of fuel and waste to and

from the reactor, with respect to normal conditions of transport and possible accidents in transport, are as set forth in Summary Table S–4 in paragraph (c) of this section; and the values in the table represent the contribution of the transportation to the environmental costs of licensing the reactor.

(b) For reactors not meeting the conditions of paragraph (a) of this section, the statement shall contain a full description and detailed analysis of the environmental effects of transportation of fuel and wastes to and from the reactor, including values for the environmental impact under normal conditions of transport and for the environmental risk from accidents in transport. The statement shall indicate that the values determined by the analysis represent the contribution of such effects to the environmental costs of licensing the reactor.

(c)

SUMMARY TABLE S–4—ENVIRONMENTAL IMPACT OF TRANSPORTATION OF FUEL AND WASTE TO AND FROM ONE LIGHT-WATER-COOLED NUCLEAR POWER REACTOR [1]

Normal Conditions of Transport

	Environmental impact
Heat (per irradiated fuel cask in transit)	250,000 Btu/hr.
Weight (governed by Federal or State restrictions)	73,000 lbs. per truck; 100 tons per cask per rail car.
Traffic density:	
Truck	Less than 1 per day.
Rail	Less than 3 per month

Exposed population	Estimated number of persons exposed	Range of doses to exposed individuals [2] (per reactor year)	Cumulative dose to exposed population (per reactor year) [3]
Transportation workers	200	0.01 to 300 millirem	4 man-rem.
General public:			
Onlookers	1,100	0.003 to 1.3 millirem	3 man-rem.
Along Route	600,000	0.0001 to 0.06 millirem	

Accidents in Transport

	Environmental risk
Radiological effects	Small [4]
Common (nonradiological) causes	1 fatal injury in 100 reactor years; 1 nonfatal injury in 10 reactor years; $475 property damage per reactor year.

[1] Data supporting this table are given in the Commission's "Environmental Survey of Transportation of Radioactive Materials to and from Nuclear Power Plants," WASH–1238, December 1972; and Supp. 1 of NUREG–75/038, April 1975. Both documents are available for inspection and copying at the Commission's Public Document Room, One White Flint North, 11555 Rockville Pike (first floor), Rockville, Maryland 20852 and may be obtained from National Technical Information Service, Springfield, VA 22161. The WASH–1238 is available from NTIS at a cost of $5.45 (microfiche, $2.25) and NUREG–75/038 is available at a cost of $3.25 (microfiche, $2.25).

[2] The Federal Radiation Council has recommended that the radiation doses from all sources of radiation other than natural background and medical exposures should be limited to 5,000 millirem per year for individuals as a result of occupational exposure and should be limited to 500 millirem per year for individuals in the general population. The dose to individuals due to average natural background radiation is about 130 millirem per year.

[3] Man-rem is an expression for the summation of whole body doses to individuals in a group. Thus, if each member of a population group of 1,000 people were to receive a dose of 0.001 rem (1 millirem), or if 2 people were to receive a dose of 0.5 rem (500 millirem) each, the total man-rem dose in each case would be 1 man-rem.

[4] Athough the environmental risk of radiological effects stemming from transportation accidents is currently incapable of being numerically quantified, the risk remains small regardless of whether it is being applied to a single reactor or a multireactor site.

[49 FR 9381, Mar. 12, 1984; 49 FR 10922, Mar. 23, 1984, as amended at 53 FR 43420, Oct. 27, 1988; 72 FR 49512, Aug. 28, 2007; 79 FR 66604, Nov. 10, 2014; 86 FR 67843, Nov. 30, 2021]

§ 51.53 Postconstruction environmental reports.

(a) *General.* Any environmental report prepared under the provisions of this section may incorporate by reference any information contained in a prior environmental report or supplement thereto that relates to the production or utilization facility or site, or any information contained in a final environmental document previously prepared by the NRC staff that relates to the production or utilization facility or site. Documents that may be referenced include, but are not limited to,

the final environmental impact statement; supplements to the final environmental impact statement, including supplements prepared at the license renewal stage; NRC staff-prepared final generic environmental impact statements; and environmental assessments and records of decisions prepared in connection with the construction permit, operating license, early site permit, combined license and any license amendment for that facility.

(b) *Operating license stage*. Each applicant for a license to operate a production or utilization facility covered by §51.20 shall submit with its application a separate document entitled ''Supplement to Applicant's Environmental Report—Operating License Stage,'' which will update ''Applicant's Environmental Report—Construction Permit Stage.'' Unless otherwise required by the Commission, the applicant for an operating license for a nuclear power reactor shall submit this report only in connection with the first licensing action authorizing full-power operation. In this report, the applicant shall discuss the same matters described in §§51.45, 51.51, and 51.52, but only to the extent that they differ from those discussed or reflect new information in addition to that discussed in the final environmental impact statement prepared by the Commission in connection with the construction permit. No discussion of need for power, or of alternative energy sources, or of alternative sites for the facility, is required in this report. As stated in §51.23, no discussion of the environmental impacts of the continued storage of spent fuel is required in this report.

(c) *Operating license renewal stage*. (1) Each applicant for renewal of a license to operate a nuclear power plant under part 54 of this chapter shall submit with its application a separate document entitled ''Applicant's Environmental Report—Operating License Renewal Stage.''

(2) The report must contain a description of the proposed action, including the applicant's plans to modify the facility or its administrative control procedures as described in accordance with §54.21 of this chapter. This report must describe in detail the affected environment around the plant, the modifications directly affecting the environment or any plant effluents, and any planned refurbishment activities. In addition, the applicant shall discuss in this report the environmental impacts of alternatives and any other matters described in §51.45. The report is not required to include discussion of need for power or the economic costs and economic benefits of the proposed action or of alternatives to the proposed action except insofar as such costs and benefits are either essential for a determination regarding the inclusion of an alternative in the range of alternatives considered or relevant to mitigation. The environmental report need not discuss other issues not related to the environmental effects of the proposed action and the alternatives. As stated in §51.23, no discussion of the environmental impacts of the continued storage of spent fuel is required in this report.

(3) For those applicants seeking an initial renewed license and holding an operating license, construction permit, or combined license as of June 30, 1995, the environmental report shall include the information required in paragraph (c)(2) of this section subject to the following conditions and considerations:

(i) The environmental report for the operating license renewal stage is not required to contain analyses of the environmental impacts of the license renewal issues identified as Category 1 issues in appendix B to subpart A of this part.

(ii) The environmental report must contain analyses of the environmental impacts of the proposed action, including the impacts of refurbishment activities, if any, associated with license renewal and the impacts of operation during the renewal term, for those issues identified as Category 2 issues in appendix B to subpart A of this part. The required analyses are as follows:

(A) If the applicant's plant utilizes cooling towers or cooling ponds and withdraws makeup water from a river, an assessment of the impact of the proposed action on water availability and competing water demands, the flow of the river, and related impacts on stream (aquatic) and riparian (terrestrial) ecological communities must be

provided. The applicant shall also provide an assessment of the impacts of the withdrawal of water from the river on alluvial aquifers during low flow.

(B) If the applicant's plant utilizes once-through cooling or cooling pond heat dissipation systems, the applicant shall provide a copy of current Clean Water Act 316(b) determinations and, if necessary, a 316(a) variance in accordance with 40 CFR part 125, or equivalent State permits and supporting documentation. If the applicant cannot provide these documents, it shall assess the impact of the proposed action on fish and shellfish resources resulting from thermal changes and impingement and entrainment.

(C) If the applicant's plant pumps more than 100 gallons (total onsite) of groundwater per minute, an assessment of the impact of the proposed action on groundwater must be provided.

(D) If the applicant's plant is located at an inland site and utilizes cooling ponds, an assessment of the impact of the proposed action on groundwater quality must be provided.

(E) All license renewal applicants shall assess the impact of refurbishment, continued operations, and other license-renewal-related construction activities on important plant and animal habitats. Additionally, the applicant shall assess the impact of the proposed action on threatened or endangered species in accordance with Federal laws protecting wildlife, including but not limited to, the Endangered Species Act, and essential fish habitat in accordance with the Magnuson-Stevens Fishery Conservation and Management Act.

(F) [Reserved]

(G) If the applicant's plant uses a cooling pond, lake, or canal or discharges into a river, an assessment of the impact of the proposed action on public health from thermophilic organisms in the affected water must be provided.

(H) If the applicant's transmission lines that were constructed for the specific purpose of connecting the plant to the transmission system do not meet the recommendations of the National Electric Safety Code for preventing electric shock from induced currents, an assessment of the impact of the proposed action on the potential shock hazard from the transmission lines must be provided.

(I)–(J) [Reserved]

(K) All applicants shall identify any potentially affected historic or archaeological properties and assess whether any of these properties will be affected by future plant operations and any planned refurbishment activities in accordance with the National Historic Preservation Act.

(L) If the staff has not previously considered severe accident mitigation alternatives for the applicant's plant in an environmental impact statement or related supplement or in an environmental assessment, a consideration of alternatives to mitigate severe accidents must be provided.

(M) [Reserved]

(N) Applicants shall provide information on the general demographic composition of minority and low-income populations and communities (by race and ethnicity) residing in the immediate vicinity of the plant that could be affected by the renewal of the plant's operating license, including any planned refurbishment activities, and ongoing and future plant operations.

(O) Applicants shall provide information about other past, present, and reasonably foreseeable future actions occurring in the vicinity of the nuclear plant that may result in a cumulative effect.

(P) An applicant shall assess the impact of any documented inadvertent releases of radionuclides into groundwater. The applicant shall include in its assessment a description of any groundwater protection program used for the surveillance of piping and components containing radioactive liquids for which a pathway to groundwater may exist. The assessment must also include a description of any past inadvertent releases and the projected impact to the environment (e.g., aquifers, rivers, lakes, ponds, ocean) during the license renewal term.

(iii) The report must contain a consideration of alternatives for reducing adverse impacts, as required by § 51.45(c), for all Category 2 license renewal issues in appendix B to subpart A of this part. No such consideration is

required for Category 1 issues in appendix B to subpart A of this part.

(iv) The environmental report must contain any new and significant information regarding the environmental impacts of license renewal of which the applicant is aware.

(d) *Postoperating license stage.* Each applicant for a license amendment authorizing decommissioning activities for a production or utilization facility either for unrestricted use or based on continuing use restrictions applicable to the site; and each applicant for a license amendment approving a license termination plan or decommissioning plan under §50.82 of this chapter either for unrestricted use or based on continuing use restrictions applicable to the site; and each applicant for a license or license amendment to store spent fuel at a nuclear power reactor after expiration of the operating license for the nuclear power reactor shall submit with its application a separate document, entitled ''Supplement to Applicant's Environmental Report—Post Operating License Stage,'' which will update ''Applicant's Environmental Report—Operating License Stage,'' as appropriate, to reflect any new information or significant environmental change associated with the applicant's proposed decommissioning activities or with the applicant's proposed activities with respect to the planned storage of spent fuel. As stated in §51.23, no discussion of the environmental impacts of the continued storage of spent fuel is required in this report. The ''Supplement to Applicant's Environmental Report—Post Operating License Stage'' may incorporate by reference any information contained in ''Applicant's Environmental Report—Construction Permit Stage.''

[61 FR 66543, Dec. 18, 1996, as amended at 64 FR 48506, Sept. 3, 1999; 68 FR 58810, Oct. 10, 2003; 72 FR 49513, Aug. 28, 2007; 78 FR 37316, June 20, 2013; 79 FR 56260, Sept. 19, 2014; 79 FR 66604, Nov. 10, 2014]

§51.54 Environmental report—manufacturing license.

(a) Each applicant for a manufacturing license under subpart F of part 52 of this chapter shall submit with its application a separate document entitled, ''Applicant's Environmental Report—Manufacturing License.'' The environmental report must address the costs and benefits of severe accident mitigation design alternatives, and the bases for not incorporating severe accident mitigation design alternatives into the design of the reactor to be manufactured. The environmental report need not address the environmental impacts associated with manufacturing the reactor under the manufacturing license, the benefits and impacts of utilizing the reactor in a nuclear power plant, or an evaluation of alternative energy sources.

(b) Each applicant for an amendment to a manufacturing license shall submit with its application a separate document entitled, ''Applicant's Supplemental Environmental Report—Amendment to Manufacturing License.'' The environmental report must address whether the design change which is the subject of the proposed amendment either renders a severe accident mitigation design alternative previously rejected in an environmental assessment to become cost beneficial, or results in the identification of new severe accident mitigation design alternatives that may be reasonably incorporated into the design of the manufactured reactor. The environmental report need not address the environmental impacts associated with manufacturing the reactor under the manufacturing license.

[72 FR 49513, Aug. 28, 2007]

§51.55 Environmental report—standard design certification.

(a) Each applicant for a standard design certification under subpart B of part 52 of this chapter shall submit with its application a separate document entitled, ''Applicant's Environmental Report—Standard Design Certification.'' The environmental report must address the costs and benefits of severe accident mitigation design alternatives, and the bases for not incorporating severe accident mitigation design alternatives in the design to be certified.

(b) Each applicant for an amendment to a design certification shall submit with its application a separate document entitled, ''Applicant's Supplemental Environmental Report—

Amendment to Standard Design Certification.'' The environmental report must address whether the design change which is the subject of the proposed amendment either renders a severe accident mitigation design alternative previously rejected in an environmental assessment to become cost beneficial, or results in the identification of new severe accident mitigation design alternatives that may be reasonably incorporated into the design certification.

[72 FR 49513, Aug. 28, 2007]

§ 51.58 Environmental report—number of copies; distribution.

(a) Each applicant for a license or permit to site, construct, manufacture, or operate a production or utilization facility covered by §§ 51.20(b)(1), (b)(2), (b)(3), or (b)(4), each applicant for renewal of an operating or combined license for a nuclear power plant, each applicant for a license amendment authorizing the decommissioning of a production or utilization facility covered by § 51.20, and each applicant for a license or license amendment to store spent fuel at a nuclear power plant after expiration of the operating license or combined license for the nuclear power plant shall submit a copy to the Director of the Office of Nuclear Reactor Regulation, or the Director of the Office of Nuclear Material Safety and Safeguards, as appropriate, of an environmental report or any supplement to an environmental report. These reports must be sent either by mail addressed: ATTN: Document Control Desk; U.S. Nuclear Regulatory Commission, Washington, DC 20555–0001; by hand delivery to the NRC's offices at 11555 Rockville Pike, Rockville, Maryland, between the hours of 7:30 a.m. and 4:15 p.m. eastern time; or, where practicable, by electronic submission, for example, via Electronic Information Exchange, or CD–ROM. Electronic submissions must be made in a manner that enables the NRC to receive, read, authenticate, distribute, and archive the submission, and process and retrieve it a single page at a time. Detailed guidance on making electronic submissions can be obtained by visiting the NRC's Web site at *http://www.nrc.gov/site-help/e-submittals.html;* by e-mail to *MSHD.Resource@nrc.gov;* or by writing the Office of the Chief Information Officer, U.S. Nuclear Regulatory Commission, Washington, DC 20555–0001. The guidance discusses, among other topics, the formats the NRC can accept, the use of electronic signatures, and the treatment of nonpublic information. If the communication is on paper, the signed original must be sent. If a submission due date falls on a Saturday, Sunday, or Federal holiday, the next Federal working day becomes the official due date. The applicant shall maintain the capability to generate additional copies of the environmental report or any supplement to the environmental report for subsequent distribution to parties and Boards in the NRC proceedings; Federal, State, and local officials; and any affected Indian Tribes, in accordance with written instructions issued by the Director of the Office of Nuclear Reactor Regulation or the Director of the Office of Nuclear Material Safety and Safeguards, as appropriate.

(b) Each applicant for a license to manufacture a nuclear power reactor, or for an amendment to a license to manufacture, seeking approval of the final design of the nuclear power reactor under subpart F of part 52 of this chapter, shall submit to the Commission an environmental report or any supplement to an environmental report in the manner specified in § 50.3 of this chapter. The applicant shall maintain the capability to generate additional copies of the environmental report or any supplement to the environmental report for subsequent distribution to parties and Boards in the NRC proceeding; Federal, State, and local officials; and any affected Indian Tribes, in accordance with written instructions issued by the Director of the Office of Nuclear Reactor Regulation.

[72 FR 49513, Aug. 28, 2007, as amended at 74 FR 62682, Dec. 1, 2009; 84 FR 65645, Nov. 29, 2019]

ENVIRONMENTAL REPORTS—MATERIALS LICENSES

§51.60 Environmental report—materials licenses.

(a) Each applicant for a license or other form of permission, or an amendment to or renewal of a license or other form of permission issued pursuant to parts 30, 32, 33, 34, 35, 36, 39, 40, 61, 70 and/or 72 of this chapter, and covered by paragraphs (b)(1) through (b)(5) of this section, shall submit with its application to: ATTN: Document Control Desk, Director, Nuclear Material Safety and Safeguards, a separate document, entitled ''Applicant's Environmental Report'' or ''Supplement to Applicant's Environmental Report,'' as appropriate. The ''Applicant's Environmental Report'' shall contain the information specified in §51.45. If the application is for an amendment to or a renewal of a license or other form of permission for which the applicant has previously submitted an environmental report, the supplement to applicant's environmental report may be limited to incorporating by reference, updating or supplementing the information previously submitted to reflect any significant environmental change, including any significant environmental change resulting from operational experience or a change in operations or proposed decommissioning activities. If the applicant is the U.S. Department of Energy, the environmental report may be in the form of either an environmental impact statement or an environmental assessment, as appropriate.

(b) As required by paragraph (a) of this section, each applicant shall prepare an environmental report for the following types of actions:

(1) Issuance or renewal of a license or other form of permission for:

(i) Possession and use of special nuclear material for processing and fuel fabrication, scrap recovery, or conversion of uranium hexafluoride pursuant to part 70 of this chapter.

(ii) Possession and use of source material for uranium milling or production of uranium hexafluoride pursuant to part 40 of this chapter.

(iii) Storage of spent fuel in an independent spent fuel storage installation (ISFSI) or the storage of spent fuel or high-level radio-active waste in a monitored retrievable storage installation (MRS) pursuant to part 72 of this chapter.

(iv) Receipt and disposal of radioactive waste from other persons pursuant to part 61 of this chapter.

(v) Processing of source material for extraction of rare earth and other metals.

(vi) Use of radioactive tracers in field flood studies involving secondary and tertiary oil and gas recovery.

(vii) Construction and operation of a uranium enrichment facility.

(2) Issuance of an amendment that would authorize or result in (i) a significant expansion of a site, (ii) a significant change in the types of effluents, (iii) a significant increase in the amounts of effluents, (iv) a significant increase in individual or cumulative occupational radiation exposure, (v) a significant increase in the potential for or consequences from radiological accidents, or (vi) a significant increase in spent fuel storage capacity, in a license or other form of permission to conduct an activity listed in paragraph (b)(1) of this section.

(3) Amendment of a license to authorize the decommissioning of an independent spent fuel storage installation (ISFSI) or a monitored retrievable storage installation (MRS) pursuant to part 72 of this chapter.

(4) Issuance of a license amendment pursuant to part 61 of this chapter authorizing (i) closure of a land disposal site, (ii) transfer of the license to the disposal site owner for the purpose of institutional control, or (iii) termination of the license at the end of the institutional control period.

(5) Any other licensing action for which the Commission determines an Environmental Report is necessary.

[49 FR 9381, Mar. 12, 1984, as amended at 53 FR 31681, Aug. 19, 1988; 57 FR 18392, Apr. 30, 1992; 58 FR 7737, Feb. 9, 1993; 62 FR 26732, May 14, 1997; 68 FR 58811, Oct. 10, 2003]

§51.61 Environmental report—independent spent fuel storage installation (ISFSI) or monitored retrievable storage installation (MRS) license.

Each applicant for issuance of a license for storage of spent fuel in an

independent spent fuel storage installation (ISFSI) or for the storage of spent fuel and high-level radioactive waste in a monitored retrievable storage installation (MRS) pursuant to part 72 of this chapter shall submit with its application to: ATTN: Document Control Desk, Director, Office of Nuclear Material Safety and Safeguards, a separate document entitled ''Applicant's Environmental Report—ISFSI License'' or ''Applicant's Environmental Report—MRS License,'' as appropriate. If the applicant is the U.S. Department of Energy, the environmental report may be in the form of either an environmental impact statement or an environmental assessment, as appropriate. The environmental report shall contain the information specified in § 51.45 and shall address the siting evaluation factors contained in subpart E of part 72 of this chapter. As stated in § 51.23, no discussion of the environmental impacts of the continued storage of spent fuel in an ISFSI is required in this report.

[79 FR 56261, Sept. 19, 2014]

§ 51.62 Environmental report—land disposal of radioactive waste licensed under 10 CFR part 61.

(a) Each applicant for issuance of a license for land disposal of radioactive waste pursuant to part 61 of this chapter shall submit with its application to: ATTN: Document Control Desk, Director of Nuclear Material Safety and Safeguards, a separate document, entitled ''Applicant's Environmental Report—License for Land Disposal of Radioactive Waste.'' The environmental report and any supplement to the environmental report may incorporate by reference information contained in the application or in any previous application, statement or report filed with the Commission provided that such references are clear and specific and that copies of the information so incorporated are available at the NRC Web site, *http://www.nrc.gov*, and/or at the NRC Public Document Room.

(b) The environmental report shall contain the information specified in § 51.45, shall address the applicant's environmental monitoring program required by §§ 61.12(l), 61.53 and 61.59(b) of this chapter, and shall be as complete as possible in the light of information that is available at the time the environmental report is submitted.

(c) The applicant shall supplement the environmental report in a timely manner as necessary to permit the Commission to review, prior to issuance, amendment or renewal of a license, new information regarding the environmental impact of previously proposed activities, information regarding the environmental impact of any changes in previously proposed activities, or any significant new information regarding the environmental impact of closure activities and long-term performance of the disposal site.

[49 FR 9381, Mar. 12, 1984, as amended at 53 FR 43420, Oct. 27, 1988; 64 FR 48952, Sept. 9, 1999; 68 FR 58811, Oct. 10, 2003]

§ 51.66 Environmental report—number of copies; distribution.

Each applicant for a license or other form of permission, or an amendment to or renewal of a license or other form of permission issued under parts 30, 32, 33, 34, 35, 36, 39, 40, 61, 70, and/or 72 of this chapter, and covered by §§ 51.60(b)(1) through (6); or by §§ 51.61 or 51.62 shall submit to the Director of Nuclear Material Safety and Safeguards an environmental report or any supplement to an environmental report in the manner specified in § 51.58(a). The applicant shall maintain the capability to generate additional copies of the environmental report or any supplement to the environmental report for subsequent distribution to Federal, State, and local officials, and any affected Indian Tribes in accordance with written instructions issued by the Director of Nuclear Material Safety and Safeguards.

[72 FR 49514, Aug. 28, 2007]

§ 51.67 Environmental information concerning geologic repositories.

(a) In lieu of an environmental report, the Department of Energy, as an applicant for a license or license amendment pursuant to part 60 or 63 of this chapter, shall submit to the Commission any final environmental impact statement which the Department prepares in connection with any geologic repository developed under Subtitle A of Title I, or under Title IV, of

the Nuclear Waste Policy Act of 1982, as amended. (See §60.22 or §63.22 of this chapter as to the required time and manner of submission.) The statement shall include, among the alternatives under consideration, denial of a license or construction authorization by the Commission.

(b) Under applicable provisions of law, the Department of Energy may be required to supplement its final environmental impact statement if it makes a substantial change in its proposed action that is relevant to environmental concerns or determines that there are significant new circumstances or information relevant to environmental concerns and bearing on the proposed action or its impacts. The Department shall submit any supplement to its final environmental impact statement to the Commission. (See §60.22 or §63.22 of this chapter as to the required time and manner of submission.)

(c) Whenever the Department of Energy submits a final environmental impact statement, or a final supplement to an environmental impact statement, to the Commission pursuant to this section, it shall also inform the Commission of the status of any civil action for judicial review initiated pursuant to section 119 of the Nuclear Waste Policy Act of 1982. This status report, which the Department shall update from time to time to reflect changes in status, shall:

(1) State whether the environmental impact statement has been found by the courts of the United States to be adequate or inadequate; and

(2) Identify any issues relating to the adequacy of the environmental impact statement that may remain subject to judicial review.

[54 FR 27870, July 3, 1989, as amended at 66 FR 55791, Nov. 2, 2001]

ENVIRONMENTAL REPORTS—RULEMAKING

§51.68 Environmental report—rulemaking.

Petitioners for rulemaking requesting amendments of parts 30, 31, 32, 33, 34, 35, 36, 39, 40 or part 70 of this chapter concerning the exemption from licensing and regulatory requirements of or authorizing general licenses for any equipment, device, commodity or other product containing byproduct material, source material or special nuclear material shall submit with the petition a separate document entitled ''Petitioner's Environmental Report,'' which shall contain the information specified in §51.45.

[68 FR 58811, Oct. 10, 2003]

ENVIRONMENTAL IMPACT STATEMENTS

DRAFT ENVIRONMENTAL IMPACT STATEMENTS—GENERAL REQUIREMENTS

§51.70 Draft environmental impact statement—general.

(a) The NRC staff will prepare a draft environmental impact statement as soon as practicable after publication of the notice of intent to prepare an environmental impact statement and completion of the scoping process. To the fullest extent practicable, environmental impact statements will be prepared concurrently or integrated with environmental impact analyses and related surveys and studies required by other Federal law.

(b) The draft environmental impact statement will be concise, clear and analytic, will be written in plain language with appropriate graphics, will state how alternatives considered in it and decisions based on it will or will not achieve the requirements of sections 101 and 102(1) of NEPA and of any other relevant and applicable environmental laws and policies, will identify any methodologies used and sources relied upon, and will be supported by evidence that the necessary environmental analyses have been made. The format provided in section 1(a) of appendix A of this subpart should be used. The NRC staff will independently evaluate and be responsible for the reliability of all information used in the draft environmental impact statement.

(c) The Commission will cooperate with State and local agencies to the fullest extent possible to reduce duplication between NEPA and State and local requirements, in accordance with 40 CFR 1506.2 (b) and (c).

§ 51.71 Draft environmental impact statement—contents.

(a) *Scope.* The draft environmental impact statement will be prepared in accordance with the scope decided upon in the scoping process required by §§ 51.26 and 51.29. As appropriate and to the extent required by the scope, the draft statement will address the topics in paragraphs (b), (c), (d) and (e) of this section and the matters specified in §§ 51.45, 51.50, 51.51, 51.52, 51.53, 51.54, 51.61 and 51.62.

(b) *Analysis of major points of view.* To the extent sufficient information is available, the draft environmental impact statement will include consideration of major points of view concerning the environmental impacts of the proposed action and the alternatives, and contain an analysis of significant problems and objections raised by other Federal, State, and local agencies, by any affected Indian Tribes, and by other interested persons.

(c) *Status of compliance.* The draft environmental impact statement will list all Federal permits, licenses, approvals, and other entitlements which must be obtained in implementing the proposed action and will describe the status of compliance with those requirements. If it is uncertain whether a Federal permit, license, approval, or other entitlement is necessary, the draft environmental impact statement will so indicate.

(d) *Analysis.* Unless excepted in this paragraph or § 51.75, the draft environmental impact statement will include a preliminary analysis that considers and weighs the environmental effects, including any cumulative effects, of the proposed action; the environmental impacts of alternatives to the proposed action; and alternatives available for reducing or avoiding adverse environmental effects. Additionally, the draft environmental impact statement will include a consideration of the economic, technical, and other benefits and costs of the proposed action and alternatives. The draft environmental impact statement will indicate what other interests and considerations of Federal policy, including factors not related to environmental quality, if applicable, are relevant to the consideration of environmental effects of the proposed action identified under paragraph (a) of this section. The draft supplemental environmental impact statement prepared at the license renewal stage under § 51.95(c) need not discuss the economic or technical benefits and costs of either the proposed action or alternatives except if benefits and costs are either essential for a determination regarding the inclusion of an alternative in the range of alternatives considered or relevant to mitigation. In addition, the supplemental environmental impact statement prepared at the license renewal stage need not discuss other issues not related to the environmental effects of the proposed action and associated alternatives. The draft supplemental environmental impact statement for license renewal prepared under § 51.95(c) will rely on conclusions as amplified by the supporting information in the GEIS for issues designated as Category 1 in appendix B to subpart A of this part. The draft supplemental environmental impact statement must contain an analysis of those issues identified as Category 2 in appendix B to subpart A of this part that are open for the proposed action. The analysis for all draft environmental impact statements will, to the fullest extent practicable, quantify the various factors considered. To the extent that there are important qualitative considerations or factors that cannot be quantified, these considerations or factors will be discussed in qualitative terms. Consideration will be given to compliance with environmental quality standards and requirements that have been imposed by Federal, State, regional, and local agencies having responsibility for environmental protection, including applicable zoning and land-use regulations and water pollution limitations or requirements issued or imposed under the Federal Water Pollution Control Act. The environmental impact of the proposed action will be considered in the analysis with respect to matters covered by environmental quality standards and requirements irrespective of whether a certification or license from the appropriate

authority has been obtained.[3] While satisfaction of Commission standards and criteria pertaining to radiological effects will be necessary to meet the licensing requirements of the Atomic Energy Act, the analysis will, for the purposes of NEPA, consider the radiological effects of the proposed action and alternatives.

(e) *Effect of limited work authorization.* If a limited work authorization was issued either in connection with or subsequent to an early site permit, or in connection with a construction permit or combined license application, then the environmental impact statement for the construction permit or combined license application will not address or consider the sunk costs associated with the limited work authorization.

(f) *Preliminary recommendation.* The draft environmental impact statement normally will include a preliminary recommendation by the NRC staff respecting the proposed action. This preliminary recommendation will be based on the information and analysis described in paragraphs (a) through (d) of this section and §§51.75, 51.76, 51.80, 51.85, and 51.95, as appropriate, and will be reached after considering the environmental effects of the proposed action and reasonable alternatives,[4] and, except for supplemental environmental impact statements for the operating license renewal stage prepared pursuant to §51.95(c), after weighing the costs and benefits of the proposed action. In lieu of a recommendation, the NRC staff may indicate in the draft statement that two or more alternatives remain under consideration.

[49 FR 9381, Mar. 12, 1984, as amended at 61 FR 28488, June 5, 1996; 61 FR 66544, Dec. 18, 1996; 72 FR 49514, Aug. 28, 2007; 72 FR 57445, Oct. 9, 2007; 78 FR 37317, June 20, 2013]

§51.72 Supplement to draft environmental impact statement.

(a) The NRC staff will prepare a supplement to a draft environmental impact statement for which a notice of availability has been published in the FEDERAL REGISTER as provided in §51.117, if:

(1) There are substantial changes in the proposed action that are relevant to environmental concerns; or

(2) There are significant new circumstances or information relevant to environmental concerns and bearing on the proposed action or its impacts.

(b) The NRC staff may prepare a supplement to a draft environmental impact statement when, in its opinion, preparation of a supplement will further the purposes of NEPA.

[3] Compliance with the environmental quality standards and requirements of the Federal Water Pollution Control Act (imposed by EPA or designated permitting states) is not a substitute for, and does not negate the requirement for NRC to weigh all environmental effects of the proposed action, including the degradation, if any, of water quality, and to consider alternatives to the proposed action that are available for reducing adverse effects. Where an environmental assessment of aquatic impact from plant discharges is available from the permitting authority, the NRC will consider the assessment in its determination of the magnitude of environmental impacts for striking an overall cost-benefit balance at the construction permit and operating license and early site permit and combined license stages, and in its determination of whether the adverse environmental impacts of license renewal are so great that preserving the option of license renewal for energy planning decision-makers would be unreasonable at the license renewal stage. When no such assessment of aquatic impacts is available from the permitting authority, NRC will establish on its own, or in conjunction with the permitting authority and other agencies having relevant expertise, the magnitude of potential impacts for striking an overall cost-benefit balance for the facility at the construction permit and operating license and early site permit and combined license stages, and in its determination of whether the adverse environmental impacts of license renewal are so great that preserving the option of license renewal for energy planning decision-makers would be unreasonable at the license renewal stage.

[4] The consideration of reasonable alternatives to a proposed action involving nuclear power reactors (e.g., alternative energy sources) is intended to assist the NRC in meeting its NEPA obligations and does not preclude any State authority from making separate determinations with respect to these alternatives and in no way preempts, displaces, or affects the authority of States or other Federal agencies to address these issues.

(c) The supplement to a draft environmental impact statement will be prepared and noticed in the same manner as the draft environmental impact statement except that a scoping process need not be used.

§ 51.73 Request for comments on draft environmental impact statement.

Each draft environmental impact statement and each supplement to a draft environmental impact statement distributed in accordance with § 51.74, and each news release provided pursuant to § 51.74(d) will be accompanied by or include a request for comments on the proposed action and on the draft environmental impact statement or any supplement to the draft environmental impact statement and will state where comments should be submitted and the date on which the comment period closes. A minimum comment period of 45 days will be provided. The comment period will be calculated from the date on which the Environmental Protection Agency notice stating that the draft statement or the supplement to the draft statement has been filed with EPA is published in the FEDERAL REGISTER. If no comments are provided within the time specified, it will be presumed, unless the agency or person requests an extension of time, that the agency or person has no comment to make. To the extent practicable, NRC staff will grant reasonable requests for extensions of time of up to fifteen (15) days.

§ 51.74 Distribution of draft environmental impact statement and supplement to draft environmental impact statement; news releases.

(a) A copy of the draft environmental impact statement will be distributed to:

(1) The Environmental Protection Agency.

(2) Any other Federal agency which has special expertise or jurisdiction by law with respect to any environmental impact involved or which is authorized to develop and enforce relevant environmental standards.

(3) The applicant or petitioner for rulemaking and any other party to the proceeding.

(4) Appropriate State and local agencies authorized to develop and enforce relevant environmental standards.

(5) Appropriate State, regional and metropolitan clearinghouses.

(6) Appropriate Indian Tribes when the proposed action may have an environmental impact on a reservation.

(7) Upon written request, any organization or group included in the master list of interested organizations and groups maintained under § 51.122.

(8) Upon written request, any other person to the extent available.

(b) Additional copies will be made available in accordance with § 51.123.

(c) A supplement to a draft environmental impact statement will be distributed in the same manner as the draft environmental impact statement to which it relates.

(d) News releases stating the availability for comment and place for obtaining or inspecting a draft environmental statement or supplement will be provided to local newspapers and other appropriate media.

(e) A notice of availability will be published in the FEDERAL REGISTER in accordance with § 51.117.

DRAFT ENVIRONMENTAL IMPACT STATEMENTS—PRODUCTION AND UTILIZATION FACILITIES

§ 51.75 Draft environmental impact statement—construction permit, early site permit, or combined license.

(a) *Construction permit stage.* A draft environmental impact statement relating to issuance of a construction permit for a production or utilization facility will be prepared in accordance with the procedures and measures described in §§ 51.70, 51.71, 51.72, and 51.73. The contribution of the environmental effects of the uranium fuel cycle activities specified in § 51.51 shall be evaluated on the basis of impact values set forth in Table S–3, Table of Uranium Fuel Cycle Environmental Data, which shall be set out in the draft environmental impact statement. With the exception of radon-222 and technetium-99 releases, no further discussion of fuel cycle release values and other numerical data that appear explicitly in the

table shall be required.[5] The impact statement shall take account of dose commitments and health effects from fuel cycle effluents set forth in Table S–3 and shall in addition take account of economic, socioeconomic, and possible cumulative impacts and other fuel cycle impacts as may reasonably appear significant. As stated in §51.23, the generic impact determinations regarding the continued storage of spent fuel in NUREG–2157 shall be deemed incorporated into the environmental impact statement.

(b) *Early site permit stage.* A draft environmental impact statement relating to issuance of an early site permit for a production or utilization facility will be prepared in accordance with the procedures and measures described in §§51.70, 51.71, 51.72, 51.73, and this section. The contribution of the environmental effects of the uranium fuel cycle activities specified in §51.51 shall be evaluated on the basis of impact values set forth in Table S–3, Table of Uranium Fuel Cycle Environmental Data, which shall be set out in the draft environmental impact statement. With the exception of radon-222 and technetium-99 releases, no further discussion of fuel cycle release values and other numerical data that appear explicitly in the table shall be required.[5] The impact statement shall take account of dose commitments and health effects from fuel cycle effluents set forth in Table S–3 and shall in addition take account of economic, socioeconomic, and possible cumulative impacts and other fuel cycle impacts as may reasonably appear significant. As stated in §51.23, the generic impact determinations regarding the continued storage of spent fuel in NUREG–2157 shall be deemed incorporated into the environmental impact statement. The draft environmental impact statement must include an evaluation of alternative sites to determine whether there is any obviously superior alternative to the site proposed. The draft environmental impact statement must also include an evaluation of the environmental effects of construction and operation of a reactor, or reactors, which have design characteristics that fall within the site characteristics and design parameters for the early site permit application, but only to the extent addressed in the early site permit environmental report or otherwise necessary to determine whether there is any obviously superior alternative to the site proposed. The draft environmental impact statement must not include an assessment of the economic, technical, or other benefits (for example, need for power) and costs of the proposed action or an evaluation of alternative energy sources, unless these matters are addressed in the early site permit environmental report.

(c) *Combined license stage.* A draft environmental impact statement relating to issuance of a combined license that does not reference an early site permit will be prepared in accordance with the procedures and measures described in §§51.70, 51.71, 51.72, and 51.73. The contribution of the environmental effects of the uranium fuel cycle activities specified in §51.51 shall be evaluated on the basis of impact values set forth in Table S–3, Table of Uranium Fuel Cycle Environmental Data, which shall be set out in the draft environmental impact statement. With the exception of radon-222 and technetium-99 releases, no further discussion of fuel cycle release values and other numerical data that appear explicitly in the table shall be required.[5] The impact statement shall take account of dose commitments and health effects from fuel cycle effluents set forth in Table S–3 and shall in addition take account of economic, socioeconomic, and possible cumulative impacts and other fuel cycle impacts as may reasonably appear significant. As stated in §51.23, the generic impact determinations regarding the continued storage of spent fuel in NUREG–2157 shall be deemed incorporated into the environmental impact statement.

(1) *Combined license application referencing an early site permit.* If the combined license application references an early site permit, then the NRC staff

[5] Values for releases of Rn-222 and Tc-99 are not given in the table. The amount and significance of Rn-222 releases from the fuel cycle and Tc-99 releases from waste management or reprocessing activities shall be considered in the draft environmental impact statement and may be the subject of litigation in individual licensing proceedings.

shall prepare a draft supplement to the early site permit environmental impact statement. The supplement must be prepared in accordance with § 51.92(e).

(2) *Combined license application referencing a standard design certification.* If the combined license application references a standard design certification and the site characteristics of the combined license's site fall within the site parameters specified in the design certification environmental assessment, then the draft combined license environmental impact statement shall incorporate by reference the design certification environmental assessment, and summarize the findings and conclusions of the environmental assessment with respect to severe accident mitigation design alternatives.

(3) *Combined license application referencing a manufactured reactor.* If the combined license application proposes to use a manufactured reactor and the site characteristics of the combined license's site fall within the site parameters specified in the manufacturing license environmental assessment, then the draft combined license environmental impact statement shall incorporate by reference the manufacturing license environmental assessment, and summarize the findings and conclusions of the environmental assessment with respect to severe accident mitigation design alternatives. The combined license environmental impact statement report will not address the environmental impacts associated with manufacturing the reactor under the manufacturing license.

[72 FR 49514, Aug. 28, 2007, as amended at 79 FR 56261, Sept. 19, 2014]

§ 51.76 Draft environmental impact statement—limited work authorization.

The NRC will prepare a draft environmental impact statement relating to issuance of a limited work authorization in accordance with the procedures and measures described in §§ 51.70, 51.71, and 51.73, as further supplemented or modified in the following paragraphs.

(a) *Limited work authorization submitted as part of complete construction permit or combined license application.* If the application for a limited work authorization is submitted as part of a complete construction permit or combined license application, then the NRC may prepare a partial draft environmental impact statement. The analysis called for by § 51.71(d) must be limited to the activities proposed to be conducted under the limited work authorization. Alternatively, the NRC may prepare a complete draft environmental impact statement prepared in accordance with § 51.75(a) or (c), as applicable.

(b) *Phased application for limited work authorization under § 2.101(a)(9) of this chapter.* If the application for a limited work authorization is submitted in accordance with § 2.101(a)(9) of this chapter, then the draft environmental impact statement for part one of the application may be limited to consideration of the activities proposed to be conducted under the limited work authorization, and the proposed redress plan. However, if the environmental report contains the full set of information required to be submitted under § 51.50(a) or (c), then a draft environmental impact statement must be prepared in accordance with § 51.75(a) or (c), as applicable. Siting issues, including whether there is an obviously superior alternative site, or issues related to operation of the proposed nuclear power plant at the site, including need for power, may not be considered. After part two of the application is docketed, the NRC will prepare a draft supplement to the final environmental impact statement for part two of the application under § 51.72. No updating of the information contained in the final environmental impact statement prepared for part one is necessary in preparation of the supplemental environmental impact statement. The draft supplement must consider all environmental impacts associated with the prior issuance of the limited work authorization, but may not address or consider the sunk costs associated with the limited work authorization.

(c) *Limited work authorization submitted as part of an early site permit application.* If the application for a limited work authorization is submitted as part of an application for an early site permit, then the NRC will prepare

an environmental impact statement in accordance with §51.75(b). However, the analysis called for by §51.71(d) must also address the activities proposed to be conducted under the limited work authorization.

(d) *Limited work authorization request submitted by an early site permit holder.* If the application for a limited work authorization is submitted by a holder of an early site permit, then the NRC will prepare a draft supplement to the environmental impact statement for the early site permit. The supplement is limited to consideration of the activities proposed to be conducted under the limited work authorization, the adequacy of the proposed redress plan, and whether there is new and significant information identified with respect to issues related to the impacts of construction of the facility that were resolved in the early site permit proceeding with respect to the environmental impacts of the activities to be conducted under the limited work authorization. No other updating of the information contained in the final environmental impact statement prepared for the early site permit is required.

(e) *Limited work authorization for a site where an environmental impact statement was prepared, but the facility construction was not completed.* If the limited work authorization is for activities to be conducted at a site for which the Commission has previously prepared an environmental impact statement for the construction and operation of a nuclear power plant, and a construction permit was issued but construction of the plant was not completed, then the draft environmental impact statement shall incorporate by reference the earlier environmental impact statement. The draft environmental impact statement must be limited to a consideration of whether there is significant new information with respect to the environmental impacts of construction, relevant to the activities to be conducted under the limited work authority, so that the conclusion of the referenced environmental impact statement on the impacts of construction would, when analyzed in accordance with §51.71, lead to the conclusion that the limited work authorization should not be issued or should be issued with appropriate conditions.

(f) *Draft environmental impact statement.* A draft environmental impact statement prepared under this section must separately evaluate the environmental impacts and proposed alternatives attributable to the activities proposed to be conducted under the limited work authorization. However, if the ''Applicant's Environmental Report—Limited Work Authorization Stage,'' also contains the information required to be submitted in the environmental report required under §51.50, then the environmental impact statement must address the impacts of construction and operation for the proposed facility (including the environmental impacts attributable to the limited work authorization), and discuss the overall costs and benefits balancing for the underlying proposed action, in accordance with §51.71, and §51.75(a) or (c), as applicable.

[72 FR 57445, Oct. 9, 2007]

§51.77 Distribution of draft environmental impact statement.

(a) In addition to the distribution authorized by §51.74, a copy of a draft environmental statement for a licensing action for a production or utilization facility, except an action authorizing issuance, amendment or renewal of a license to manufacture a nuclear power reactor pursuant to 10 CFR part 52, appendix M will also be distributed to:

(1) The chief executive of the municipality or county identified in the draft environmental impact statement as the preferred site for the proposed facility or activity.

(2) Upon request, the chief executive of each municipality or county identified in the draft environmental impact statement as an alternative site.

(b) Additional copies will be made available in accordance with §51.123.

[49 FR 9381, Mar. 12, 1984, as amended at 54 FR 15398, Apr. 18, 1989]

DRAFT ENVIRONMENTAL IMPACT STATEMENTS—MATERIALS LICENSES

§ 51.80 Draft environmental impact statement—materials license.

(a) The NRC staff will either prepare a draft environmental impact statement or as provided in § 51.92, a supplement to a final environmental impact statement for each type of action identified in § 51.20(b) (7) through (12). Except as the context may otherwise require, procedures and measures similar to those described in §§ 51.70, 51.71, 51.72 and 51.73 will be followed.

(b)(1) *Independent spent fuel storage installation (ISFSI).* As stated in § 51.23, the generic impact determinations regarding the continued storage of spent fuel in NUREG–2157 shall be deemed incorporated in the environmental impact statement.

(2) *Monitored retrievable storage installation (MRS).* As provided in sections 141 (c), (d), and (e) and 148 (a) and (c) of the Nuclear Waste Policy Act of 1982, as amended (NWPA) (96 Stat. 2242, 2243, 42 U.S.C. 10161 (c), (d), (e); 101 Stat. 1330–235, 1330–236, 42 U.S.C. 10168 (a) and (c)), a draft environmental impact statement for the construction of a monitored retrievable storage installation (MRS) will not address the need for the MRS or any alternative to the design criteria for an MRS set forth in section 141(b)(1) of the NWPA (96 Stat. 2242, 42 U.S.C. 10161(b)(1)) but may consider alternative facility designs which are consistent with these design criteria.

[49 FR 34695, Aug. 31, 1984, as amended at 53 FR 31682, Aug. 19, 1988; 79 FR 56262, Sept. 19, 2014]

§ 51.81 Distribution of draft environmental impact statement.

Copies of the draft environmental impact statement and any supplement to the draft environmental impact statement will be distributed in accordance with the provisions of § 51.74.

DRAFT ENVIRONMENTAL IMPACT STATEMENTS—RULEMAKING

§ 51.85 Draft environmental impact statement—rulemaking.

Except as the context may otherwise require, procedures and measures similar to those described in §§ 51.70, 51.71, 51.72 and 51.73 will be followed in proceedings for rulemaking for which the Commission has determined to prepare an environmental impact statement.

§ 51.86 Distribution of draft environmental impact statement.

Copies of the draft environmental impact statement and any supplement to the draft environmental impact statement will be distributed in accordance with the provisions of § 51.74.

LEGISLATIVE ENVIRONMENTAL IMPACT STATEMENTS—PROPOSALS FOR LEGISLATION

§ 51.88 Proposals for legislation.

The Commission will, as a matter of policy, follow the provisions of 40 CFR 1506.8 regarding the NEPA process for proposals for legislation.

FINAL ENVIRONMENTAL IMPACT STATEMENTS—GENERAL REQUIREMENTS

§ 51.90 Final environmental impact statement—general.

After receipt and consideration of comments requested pursuant to §§ 51.73 and 51.117, the NRC staff will prepare a final environmental impact statement in accordance with the requirements in §§ 51.70(b) and 51.71 for a draft environmental impact statement. The format provided in section 1(a) of appendix A of this subpart should be used.

§ 51.91 Final environmental impact statement—contents.

(a)(1) The final environmental impact statement will include responses to any comments on the draft environmental impact statement or on any supplement to the draft environmental impact statement. Responses to comments may include:

(i) Modification of alternatives, including the proposed action;

(ii) Development and evaluation of alternatives not previously given serious consideration;

(iii) Supplementation or modification of analyses;

(iv) Factual corrections;

(v) Explanation of why comments do not warrant further response, citing

sources, authorities or reasons which support this conclusion.

(2) All substantive comments received on the draft environmental impact statement or any supplement to the draft environmental impact statement (or summaries thereof where the response has been exceptionally voluminous) will be attached to the final statement, whether or not each comment is discussed individually in the text of the statement.

(3) If changes in the draft environmental impact statement in response to comments are minor and are confined either to factual corrections or to explanations of why the comments do not warrant further response, the changes may be made by attaching errata sheets to the draft statement. The entire document with a new cover may then be issued as the final environmental impact statement.

(b) The final environmental impact statement will discuss any relevant responsible opposing view not adequately discussed in the draft environmental impact statement or in any supplement to the draft environmental impact statement, and respond to the issues raised.

(c) The final environmental impact statement will state how the alternatives considered in it and decisions based on it will or will not achieve the requirements of sections 101 and 102(1) of NEPA and of any other relevant and applicable environmental laws and policies.

(d) The final environmental impact statement will include a final analysis and a final recommendation on the action to be taken.

§ 51.92 Supplement to the final environmental impact statement.

(a) If the proposed action has not been taken, the NRC staff will prepare a supplement to a final environmental impact statement for which a notice of availability has been published in the FEDERAL REGISTER as provided in § 51.118, if:

(1) There are substantial changes in the proposed action that are relevant to environmental concerns; or

(2) There are new and significant circumstances or information relevant to environmental concerns and bearing on the proposed action or its impacts.

(b) In a proceeding for a combined license application under 10 CFR part 52 referencing an early site permit under part 52, the NRC staff shall prepare a supplement to the final environmental impact statement for the referenced early site permit in accordance with paragraph (e) of this section.

(c) The NRC staff may prepare a supplement to a final environmental impact statement when, in its opinion, preparation of a supplement will further the purposes of NEPA.

(d) The supplement to a final environmental impact statement will be prepared in the same manner as the final environmental impact statement except that a scoping process need not be used.

(e) The supplement to an early site permit final environmental impact statement which is prepared for a combined license application in accordance with § 51.75(c)(1) and paragraph (b) of this section must:

(1) Identify the proposed action as the issuance of a combined license for the construction and operation of a nuclear power plant as described in the combined license application at the site described in the early site permit referenced in the combined license application;

(2) Incorporate by reference the final environmental impact statement prepared for the early site permit;

(3) Contain no separate discussion of alternative sites;

(4) Include an analysis of the economic, technical, and other benefits and costs of the proposed action, to the extent that the final environmental impact statement prepared for the early site permit did not include an assessment of these benefits and costs;

(5) Include an analysis of other energy alternatives, to the extent that the final environmental impact statement prepared for the early site permit did not include an assessment of energy alternatives;

(6) Include an analysis of any environmental issue related to the impacts of construction or operation of the facility that was not resolved in the proceeding on the early site permit; and

(7) Include an analysis of the issues related to the impacts of construction and operation of the facility that were resolved in the early site permit proceeding for which new and significant information has been identified, including, but not limited to, new and significant information demonstrating that the design of the facility falls outside the site characteristics and design parameters specified in the early site permit.

(f)(1) A supplement to a final environmental impact statement will be accompanied by or will include a request for comments as provided in § 51.73 and a notice of availability will be published in the FEDERAL REGISTER as provided in § 51.117 if paragraphs (a) or (b) of this section applies.

(2) If comments are not requested, a notice of availability of a supplement to a final environmental impact statement will be published in the FEDERAL REGISTER as provided in § 51.118.

[72 FR 49515, Aug. 28, 2007]

§ 51.93 Distribution of final environmental impact statement and supplement to final environmental impact statement; news releases.

(a) A copy of the final environmental impact statement will be distributed to:

(1) The Environmental Protection Agency.

(2) The applicant or petitioner for rulemaking and any other party to the proceeding.

(3) Appropriate State, regional and metropolitan clearinghouses.

(4) Each commenter.

(b) Additional copies will be made available in accordance with § 51.123.

(c) If the final environmental impact statement is unusually long or there are so many comments on a draft environmental impact statement or any supplement to a draft environmental impact statement that distribution of the entire final statement to all commenters is impracticable, a summary of the final statement and the substantive comments will be distributed. When the final environmental impact statement has been prepared by adding errata sheets to the draft environmental impact statement as provided in § 51.91(a)(3), only the comments, the responses to the comments and the changes to the environmental impact statement will be distributed.

(d) A supplement to a final environmental impact statement will be distributed in the same manner as the final environmental impact statement to which it relates.

(e) News releases stating the availability and place for obtaining or inspecting a final environmental impact statement or supplement will be provided to local newspapers and other appropriate media.

(f) A notice of availability will be published in the FEDERAL REGISTER in accordance with § 51.118.

§ 51.94 Requirement to consider final environmental impact statement.

The final environmental impact statement, together with any comments and any supplement, will accompany the application or petition for rulemaking through, and be considered in, the Commission's decisionmaking process. The final environmental impact statement, together with any comments and any supplement, will be made a part of the record of the appropriate adjudicatory or rulemaking proceeding.

FINAL ENVIRONMENTAL IMPACT STATEMENTS—PRODUCTION AND UTILIZATION FACILITIES

§ 51.95 Postconstruction environmental impact statements.

(a) *General.* Any supplement to a final environmental impact statement or any environmental assessment prepared under the provisions of this section may incorporate by reference any information contained in a final environmental document previously prepared by the NRC staff that relates to the same production or utilization facility. Documents that may be referenced include, but are not limited to, the final environmental impact statement; supplements to the final environmental impact statement, including supplements prepared at the operating license stage; NRC staff-prepared final generic environmental impact statements; environmental assessments and records of decisions prepared in connection with the construction permit,

the operating license, the early site permit, or the combined license and any license amendment for that facility. A supplement to a final environmental impact statement will include a request for comments as provided in §51.73.

(b) *Initial operating license stage.* In connection with the issuance of an operating license for a production or utilization facility, the NRC staff will prepare a supplement to the final environmental impact statement on the construction permit for that facility, which will update the prior environmental review. The supplement will only cover matters that differ from the final environmental impact statement or that reflect significant new information concerning matters discussed in the final environmental impact statement. Unless otherwise determined by the Commission, a supplement on the operation of a nuclear power plant will not include a discussion of need for power, or of alternative energy sources, or of alternative sites, and will only be prepared in connection with the first licensing action authorizing full-power operation. As stated in §51.23, the generic impact determinations regarding the continued storage of spent fuel in NUREG–2157 shall be deemed incorporated into the environmental impact statement.

(c) *Operating license renewal stage.* In connection with the renewal of an operating license or combined license for a nuclear power plant under 10 CFR parts 52 or 54 of this chapter, the Commission shall prepare an environmental impact statement, which is a supplement to the Commission's NUREG–1437, ''Generic Environmental Impact Statement for License Renewal of Nuclear Plants'' (June 2013), which is available in the NRC's Public Document Room, 11555 Rockville Pike, Rockville, Maryland 20852.

(1) The supplemental environmental impact statement for the operating license renewal stage shall address those issues as required by §51.71. In addition, the NRC staff must comply with 40 CFR 1506.6(b)(3) in conducting the additional scoping process as required by §51.71(a).

(2) The supplemental environmental impact statement for license renewal is not required to include discussion of need for power or the economic costs and economic benefits of the proposed action or of alternatives to the proposed action except insofar as such benefits and costs are either essential for a determination regarding the inclusion of an alternative in the range of alternatives considered or relevant to mitigation. In addition, the supplemental environmental impact statement prepared at the license renewal stage need not discuss other issues not related to the environmental effects of the proposed action and the alternatives. The analysis of alternatives in the supplemental environmental impact statement should be limited to the environmental impacts of such alternatives and should otherwise be prepared in accordance with §51.71 and appendix A to subpart A of this part. As stated in §51.23, the generic impact determinations regarding the continued storage of spent fuel in NUREG–2157 shall be deemed incorporated into the supplemental environmental impact statement.

(3) The supplemental environmental impact statement shall be issued as a final impact statement in accordance with §§51.91 and 51.93 after considering any significant new information relevant to the proposed action contained in the supplement or incorporated by reference.

(4) The supplemental environmental impact statement must contain the NRC staff's recommendation regarding the environmental acceptability of the license renewal action. In order to make recommendations and reach a final decision on the proposed action, the NRC staff, adjudicatory officers, and Commission shall integrate the conclusions in the generic environmental impact statement for issues designated as Category 1 with information developed for those Category 2 issues applicable to the plant under §51.53(c)(3)(ii) and any new and significant information. Given this information, the NRC staff, adjudicatory officers, and Commission shall determine whether or not the adverse environmental impacts of license renewal are so great that preserving the option of license renewal for energy planning decisionmakers would be unreasonable.

(d) *Postoperating license stage*. In connection with the amendment of an operating or combined license authorizing decommissioning activities at a production or utilization facility covered by § 51.20, either for unrestricted use or based on continuing use restrictions applicable to the site, or with the issuance, amendment or renewal of a license to store spent fuel at a nuclear power reactor after expiration of the operating or combined license for the nuclear power reactor, the NRC staff will prepare a supplemental environmental impact statement for the post operating or post combined license stage or an environmental assessment, as appropriate, which will update the prior environmental documentation prepared by the NRC for compliance with NEPA under the provisions of this part. The supplement or assessment may incorporate by reference any information contained in the final environmental impact statement—for the operating or combined license stage, as appropriate, or in the records of decision prepared in connection with the early site permit, construction permit, operating license, or combined license for that facility. The supplement will include a request for comments as provided in § 51.73. As stated in § 51.23, the generic impact determinations regarding the continued storage of spent fuel in NUREG–2157 shall be deemed incorporated into the supplemental environmental impact statement or shall be considered in the environmental assessment, if the impacts of continued storage of spent fuel are applicable to the proposed action.

[61 FR 66545, Dec. 18, 1996, as amended at 72 FR 49516, Aug. 28, 2007; 78 FR 37317, June 20, 2013; 79 FR 56262, Sept. 19, 2014]

FINAL ENVIRONMENTAL IMPACT STATEMENTS—MATERIALS LICENSES

§ 51.97 Final environmental impact statement—materials license.

(a) *Independent spent fuel storage installation (ISFSI)*. As stated in § 51.23, the generic impact determinations regarding the continued storage of spent fuel in NUREG–2157 shall be deemed incorporated into the environmental impact statement.

(b) *Monitored retrievable storage facility (MRS)*. As provided in sections 141 (c), (d), and (e) and 148 (a) and (c) of the Nuclear Waste Policy Act of 1982, as amended (NWPA) (96 Stat. 2242, 2243, 42 U.S.C. 10161 (c), (d), (e); 101 Stat. 1330–235, 1330–236, 42 U.S.C. 10168 (a), (c)) a final environmental impact statement for the construction of a monitored retrievable storage installation (MRS) will not address the need for the MRS or any alternative to the design criteria for an MRS set forth in section 141(b)(1) of the NWPA (96 Stat. 2242, 42 U.S.C. 10161(b)(1)) but may consider alternative facility designs which are consistent with these design criteria.

(c) *Uranium enrichment facility*. As provided in section 5(e) of the Solar, Wind, Waste, and Geothermal Power Production Incentives Act of 1990 (104 Stat. 2834 at 2835, 42 U.S.C. 2243), a final environmental impact statement must be prepared before the hearing on the issuance of a license for a uranium enrichment facility is completed.

[49 FR 34695, Aug. 31, 1984, as amended at 53 FR 31682, Aug. 19, 1988; 57 FR 18392, Apr. 30, 1992; 79 FR 56262, Sept. 19, 2014]

FINAL ENVIRONMENTAL IMPACT STATEMENTS—RULEMAKING

§ 51.99 [Reserved]

NEPA PROCEDURE AND ADMINISTRATIVE ACTION

GENERAL

§ 51.100 Timing of Commission action.

(a)(1) Except as provided in § 51.13 and paragraph (b) of this section, no decision on a proposed action, including the issuance of a permit, license, or other form of permission, or amendment to or renewal of a permit, license, or other form of permission, or the issuance of an effective regulation, for which an environmental impact statement is required, will be made and no record of decision will be issued until the later of the following dates:

(i) Ninety (90) days after publication by the Environmental Protection Agency of a FEDERAL REGISTER notice stating that the draft environmental impact statement has been filed with EPA.

(ii) Thirty (30) days after publication by the Environmental Protection Agency of a FEDERAL REGISTER notice stating that the final environmental impact statement has been filed with EPA.

(2) If a notice of filing of a final environmental impact statement is published by the Environmental Protection Agency within ninety (90) days after a notice of filing of a draft environmental impact statement has been published by EPA, the minimum thirty (30) day period and the minimum ninety (90) day period may run concurrently to the extent they overlap.

(b) In any rulemaking proceeding for the purpose of protecting the public health or safety or the common defense and security, the Commission may make and publish the decision on the final rule at the same time that the Environmental Protection Agency publishes the FEDERAL REGISTER notice of filing of the final environmental impact statement.

§ 51.101 Limitations on actions.

(a) Until a record of decision is issued in connection with a proposed licensing or regulatory action for which an environmental impact statement is required under § 51.20, or until a final finding of no significant impact is issued in connection with a proposed licensing or regulatory action for which an environmental assessment is required under § 51.21:

(1) No action concerning the proposal may be taken by the Commission which would (i) have an adverse environmental impact, or (ii) limit the choice of reasonable alternatives.

(2) Any action concerning the proposal taken by an applicant which would (i) have an adverse environmental impact, or (ii) limit the choice of reasonable alternatives may be grounds for denial of the license. In the case of an application covered by §§ 30.32(f), 40.31(f), 50.10(c), 70.21(f), or §§ 72.16 and 72.34 of this chapter, the provisions of this paragraph will be applied in accordance with §§ 30.33(a)(5), 40.32(e), 50.10 (c) and (e), 70.23(a)(7) or § 72.40(b) of this chapter, as appropriate.

(b) While work on a required program environmental impact statement is in progress, the Commission will not undertake in the interim any major Federal action covered by the program which may significantly affect the quality of the human environment unless such action:

(1) Is justified independently of the program;

(2) Is itself accompanied by an adequate environmental impact statement; and

(3) Will not prejudice the ultimate decision on the program. Absent any satisfactory explanation to the contrary, interim action which tends to determine subsequent development or limit reasonable alternatives, will be considered prejudicial.

(c) This section does not preclude any applicant for an NRC permit, license, or other form of permission, or amendment to or renewal of an NRC permit, license, or other form of permission, (1) from developing any plans or designs necessary to support an application; or (2) after prior notice and consultation with NRC staff, (i) from performing any physical work necessary to support an application, or (ii) from performing any other physical work relating to the proposed action if the adverse environmental impact of that work is de minimis.

[49 FR 9381, Mar. 12, 1984, as amended at 53 FR 31682, Aug. 19, 1988]

§ 51.102 Requirement to provide a record of decision; preparation.

(a) A Commission decision on any action for which a final environmental impact statement has been prepared shall be accompanied by or include a concise public record of decision.

(b) Except as provided in paragraph (c) of this section, the record of decision will be prepared by the NRC staff director authorized to take the action.

(c) When a hearing is held on the proposed action under the regulations in subpart G of part 2 of this chapter or when the action can only be taken by the Commissioners acting as a collegial body, the initial decision of the presiding officer or the final decision of the Commissioners acting as a collegial body will constitute the record of decision. An initial or final decision

constituting the record of decision will be distributed as provided in § 51.93.

[49 FR 9381, Mar. 12, 1984, as amended at 77 FR 46600, Aug. 3, 2012; 79 FR 66604, Nov. 10, 2014]

§ 51.103 Record of decision—general.

(a) The record of decision required by § 51.102 shall be clearly identified and shall:

(1) State the decision.

(2) Identify all alternatives considered by the Commission in reaching the decision, state that these alternatives were included in the range of alternatives discussed in the environmental impact statement, and specify the alternative or alternatives which were considered to be environmentally preferable.

(3) Discuss preferences among alternatives based on relevant factors, including economic and technical considerations where appropriate, the NRC's statutory mission, and any essential considerations of national policy, which were balanced by the Commission in making the decision and state how these considerations entered into the decision.

(4) State whether the Commission has taken all practicable measures within its jurisdiction to avoid or minimize environmental harm from the alternative selected, and if not, to explain why those measures were not adopted. Summarize any license conditions and monitoring programs adopted in connection with mitigation measures.

(5) In making a final decision on a license renewal action pursuant to part 54 of this chapter, the Commission shall determine whether or not the adverse environmental impacts of license renewal are so great that preserving the option of license renewal for energy planning decisionmakers would be unreasonable.

(6) In a construction permit or a combined license proceeding where a limited work authorization under 10 CFR 50.10 was issued, the Commission's decision on the construction permit or combined license application will not address or consider the sunk costs associated with the limited work authorization in determining the proposed action.

(b) The record of decision may be integrated into any other record prepared by the Commission in connection with the action.

(c) The record of decision may incorporate by reference material contained in a final environmental impact statement.

[49 FR 9381, Mar. 12, 1984, as amended at 61 FR 28490, June 5, 1996; 61 FR 66546, Dec. 18, 1996; 61 FR 68543, Dec. 30, 1996; 72 FR 57445, Oct. 9, 2007]

§ 51.104 NRC proceeding using public hearings; consideration of environmental impact statement.

(a)(1) In any proceeding in which (i) a hearing is held on the proposed action, (ii) a final environmental impact statement has been prepared in connection with the proposed action, and (iii) matters within the scope of NEPA and this subpart are in issue, the NRC staff may not offer the final environmental impact statement in evidence or present the position of the NRC staff on matters within the scope of NEPA and this subpart until the final environmental impact statement is filed with the Environmental Protection Agency, furnished to commenting agencies and made available to the public.

(2) Any party to the proceeding may take a position and offer evidence on the aspects of the proposed action within the scope of NEPA and this subpart in accordance with the provisions of part 2 of this chapter applicable to that proceeding or in accordance with the terms of the notice of hearing.

(3) In the proceeding the presiding officer will decide those matters in controversy among the parties within the scope of NEPA and this subpart.

(b) In any proceeding in which a hearing is held where the NRC staff has determined that no environmental impact statement need be prepared for the proposed action, unless the Commission orders otherwise, any party to the proceeding may take a position and offer evidence on the aspects of the proposed action within the scope of NEPA and this subpart in accordance with the provisions of part 2 of this chapter applicable to that proceeding or in accordance with the terms of the notice of hearing. In the proceeding, the presiding officer will decide any

such matters in controversy among the parties.

(c) In any proceeding in which a limited work authorization is requested, unless the Commission orders otherwise, a party to the proceeding may take a position and offer evidence only on the aspects of the proposed action within the scope of NEPA and this subpart which are within the scope of that party's admitted contention, in accordance with the provisions of part 2 of this chapter applicable to the limited work authorization or in accordance with the terms of any notice of hearing applicable to the limited work authorization. In the proceeding, the presiding officer will decide all matters in controversy among the parties.

[49 FR 9381, Mar. 12, 1984, as amended at 72 FR 57445, Oct. 9, 2007]

PRODUCTION AND UTILIZATION FACILITIES

§ 51.105 Public hearings in proceedings for issuance of construction permits or early site permits; limited work authorizations.

(a) In addition to complying with applicable requirements of § 51.104, in a proceeding for the issuance of a construction permit or early site permit for a nuclear power reactor, testing facility, fuel reprocessing plant or isotopic enrichment plant, the presiding officer will:

(1) Determine whether the requirements of Sections 102(2) (A), (C), and (E) of NEPA and the regulations in this subpart have been met;

(2) Independently consider the final balance among conflicting factors contained in the record of the proceeding with a view to determining the appropriate action to be taken;

(3) Determine, after weighing the environmental, economic, technical, and other benefits against environmental and other costs, and considering reasonable alternatives, whether the construction permit or early site permit should be issued, denied, or appropriately conditioned to protect environmental values;

(4) Determine, in an uncontested proceeding, whether the NEPA review conducted by the NRC staff has been adequate; and

(5) Determine, in a contested proceeding, whether in accordance with the regulations in this subpart, the construction permit or early site permit should be issued as proposed by the NRC's Director, Office of Nuclear Reactor Regulation.

(b) The presiding officer in an early site permit hearing shall not admit contentions proffered by any party concerning the benefits assessment (e.g., need for power) or alternative energy sources if those issues were not addressed by the applicant in the early site permit application.

(c)(1) In addition to complying with the applicable provisions of § 51.104, in any proceeding for the issuance of a construction permit for a nuclear power plant or an early site permit under part 52 of this chapter, where the applicant requests a limited work authorization under § 50.10(d) of this chapter, the presiding officer shall—

(i) Determine whether the requirements of Section 102(2)(A), (C), and (E) of NEPA and the regulations in the subpart have been met, with respect to the activities to be conducted under the limited work authorization;

(ii) Independently consider the balance among conflicting factors with respect to the limited work authorization which is contained in the record of the proceeding, with a view to determining the appropriate action to be taken;

(iii) Determine whether the redress plan will adequately redress the activities performed under the limited work authorization, should limited work activities be terminated by the holder or the limited work authorization be revoked by the NRC, or upon effectiveness of the Commission's final decision denying the associated construction permit or early site permit, as applicable;

(iv) In an uncontested proceeding, determine whether the NEPA review conducted by the NRC staff for the limited work authorization has been adequate; and

(v) In a contested proceeding, determine whether, in accordance with the regulations in this subpart, the limited work authorization should be issued as proposed.

(2) If the limited work authorization is for activities to be conducted at a site for which the Commission has previously prepared an environmental impact statement for the construction and operation of a nuclear power plant, and a construction permit was issued but construction of the plant was never completed, then in making the determinations in paragraph (c)(1) of this section, the presiding officer shall be limited to a consideration whether there is, with respect to construction activities encompassed by the environmental impact statement which are analogous to the activities to be conducted under the limited work authorization, new and significant information on the environmental impacts of those activities, such that the limited work authorization should not be issued as proposed.

(3) The presiding officer's determination in this paragraph shall be made in a partial initial decision to be issued separately from, and in advance of, the presiding officer's decision in paragraph (a) of this section.

[72 FR 49516, Aug. 28, 2007, as amended at 72 FR 57446, Oct. 9, 2007; 73 FR 5724, Jan. 31, 2008; 84 FR 65645, Nov. 29, 2019]

§ 51.105a Public hearings in proceedings for issuance of manufacturing licenses.

In addition to complying with applicable requirements of § 51.31(c), in a proceeding for the issuance of a manufacturing license, the presiding officer will determine whether, in accordance with the regulations in this subpart, the manufacturing license should be issued as proposed by the NRC's Director, Office of Nuclear Reactor Regulation.

[73 FR 5724, Jan. 31, 2008, as amended at 84 FR 65645, Nov. 29, 2019]

§ 51.106 Public hearings in proceedings for issuance of operating licenses.

(a) Consistent with the requirements of this section and as appropriate, the presiding officer in an operating license hearing shall comply with any applicable requirements of §§ 51.104 and 51.105.

(b) During the course of a hearing on an application for issuance of an operating license for a nuclear power reactor, or a testing facility, the presiding officer may authorize, pursuant to § 50.57(c) of this chapter, the loading of nuclear fuel in the reactor core and limited operation within the scope of § 50.57(c) of this chapter, upon compliance with the procedures described therein. In any such hearing, where any party opposes such authorization on the basis of matters covered by subpart A of this part, the provisions of §§ 51.104 and 51.105 will apply, as appropriate.

(c) The presiding officer in an operating license hearing shall not admit contentions proffered by any party concerning need for power or alternative energy sources or alternative sites for the facility for which an operating license is requested.

(d) The presiding officer in an operating license hearing shall not raise issues concerning alternative sites for the facility for which an operating license is requested *sua sponte*.

§ 51.107 Public hearings in proceedings for issuance of combined licenses; limited work authorizations.

(a) In addition to complying with the applicable requirements of § 51.104, in a proceeding for the issuance of a combined license for a nuclear power reactor under part 52 of this chapter, the presiding officer will:

(1) Determine whether the requirements of Sections 102(2) (A), (C), and (E) of NEPA and the regulations in this subpart have been met;

(2) Independently consider the final balance among conflicting factors contained in the record of the proceeding with a view to determining the appropriate action to be taken;

(3) Determine, after weighing the environmental, economic, technical, and other benefits against environmental and other costs, and considering reasonable alternatives, whether the combined license should be issued, denied, or appropriately conditioned to protect environmental values;

(4) Determine, in an uncontested proceeding, whether the NEPA review conducted by the NRC staff has been adequate; and

(5) Determine, in a contested proceeding, whether in accordance with the regulations in this subpart, the combined license should be issued as proposed by the NRC's Director, Office of Nuclear Reactor Regulation.

(b) If a combined license application references an early site permit, then the presiding officer in the combined license hearing shall not admit any contention proffered by any party on environmental issues which have been accorded finality under §52.39 of this chapter, unless the contention:

(1) Demonstrates that the nuclear power reactor proposed to be built does not fit within one or more of the site characteristics or design parameters included in the early site permit;

(2) Raises any significant environmental issue that was not resolved in the early site permit proceeding; or

(3) Raises any issue involving the impacts of construction and operation of the facility that was resolved in the early site permit proceeding for which new and significant information has been identified.

(c) If the combined license application references a standard design certification, or proposes to use a manufactured reactor, then the presiding officer in a combined license hearing shall not admit contentions proffered by any party concerning severe accident mitigation design alternatives unless the contention demonstrates that the site characteristics fall outside of the site parameters in the standard design certification or underlying manufacturing license for the manufactured reactor.

(d)(1) In any proceeding for the issuance of a combined license where the applicant requests a limited work authorization under §50.10(d) of this chapter, the presiding officer, in addition to complying with any applicable provision of §51.104, shall:

(i) Determine whether the requirements of Section 102(2)(A), (C), and (E) of NEPA and the regulations in this subpart have been met, with respect to the activities to be conducted under the limited work authorization;

(ii) Independently consider the balance among conflicting factors with respect to the limited work authorization which is contained in the record of the proceeding, with a view to determining the appropriate action to be taken;

(iii) Determine whether the redress plan will adequately redress the activities performed under the limited work authorization, should limited work activities be terminated by the holder or the limited work authorization be revoked by the NRC, or upon effectiveness of the Commission's final decision denying the combined license application;

(iv) In an uncontested proceeding, determine whether the NEPA review conducted by the NRC staff for the limited work authorization has been adequate; and

(v) In a contested proceeding, determine whether, in accordance with the regulations in this subpart, the limited work authorization should be issued as proposed by the Director, Office of Nuclear Reactor Regulation.

(2) If the limited work authorization is for activities to be conducted at a site for which the Commission has previously prepared an environmental impact statement for the construction and operation of a nuclear power plant, and a construction permit was issued but construction of the plant was never completed, then in making the determinations in paragraph (c)(1) of this section, the presiding officer shall be limited to a consideration whether there is, with respect to construction activities encompassed by the environmental impact statement which are analogous to the activities to be conducted under the limited work authorization, new and significant information on the environmental impacts of those activities, so that the limited work authorization should not be issued as proposed by the Director, Office of Nuclear Reactor Regulation.

(3) In making the determination required by this section, the presiding officer may not address or consider the sunk costs associated with the limited work authorization.

(4) The presiding officer's determination in this paragraph shall be made in a partial initial decision to be issued separately from, and in advance of, the

presiding officer's decision in paragraph (a) of this section on the combined license.

[72 FR 49517, Aug. 28, 2007, as amended at 72 FR 57446, Oct. 9, 2007; 73 FR 5724, Jan. 31, 2008; 84 FR 65645, Nov. 29, 2019]

§ 51.108 Public hearings on Commission findings that inspections, tests, analyses, and acceptance criteria of combined licenses are met.

In any public hearing requested under 10 CFR 52.103(b), the Commission will not admit any contentions on environmental issues, the adequacy of the environmental impact statement for the combined license issued under subpart C of part 52, or the adequacy of any other environmental impact statement or environmental assessment referenced in the combined license application. The Commission will not make any environmental findings in connection with the finding under 10 CFR 52.103(g).

[72 FR 49517, Aug. 28, 2007]

MATERIALS LICENSES

§ 51.109 Public hearings in proceedings for issuance of materials license with respect to a geologic repository.

(a)(1) In a proceeding for issuance of a construction authorization for a high-level radioactive waste repository at a geologic repository operations area under parts 60 and 63 of this chapter, and in a proceeding for issuance of a license to receive and possess source, special nuclear, and byproduct material at a geologic repository operations area under parts 60 and 63 of this chapter, the NRC staff shall, upon the publication of the notice of hearing in the FEDERAL REGISTER, present its position on whether it is practicable to adopt, without further supplementation, the environmental impact statement (including any supplement thereto) prepared by the Secretary of Energy. If the position of the staff is that supplementation of the environmental impact statement by NRC is required, it shall file its final supplemental environmental impact statement with the Environmental Protection Agency, furnish that statement to commenting agencies, and make it available to the public, before presenting its position, or as soon thereafter as may be practicable. In discharging its responsibilities under this paragraph, the staff shall be guided by the principles set forth in paragraphs (c) and (d) of this section.

(2) Any other party to the proceeding who contends that it is not practicable to adopt the DOE environmental impact statement, as it may have been supplemented, shall file a contention to that effect within thirty (30) days after the publication of the notice of hearing in the FEDERAL REGISTER. Such contention must be accompanied by one or more affidavits which set forth factual and/or technical bases for the claim that, under the principles set forth in paragraphs (c) and (d) of this section, it is not practicable to adopt the DOE environmental impact statement, as it may have been supplemented. The presiding officer shall resolve disputes concerning adoption of the DOE environmental impact statement by using, to the extent possible, the criteria and procedures that are followed in ruling on motions to reopen under § 2.326 of this chapter.

(b) In any such proceeding, the presiding officer will determine those matters in controversy among the parties within the scope of NEPA and this subpart, specifically including whether, and to what extent, it is practicable to adopt the environmental impact statement prepared by the Secretary of Energy in connection with the issuance of a construction authorization and license for such repository.

(c) The presiding officer will find that it is practicable to adopt any environmental impact statement prepared by the Secretary of Energy in connection with a geologic repository proposed to be constructed under Title I of the Nuclear Waste Policy Act of 1982, as amended, unless:

(1)(i) The action proposed to be taken by the Commission differs from the action proposed in the license application submitted by the Secretary of Energy; and

(ii) The difference may significantly affect the quality of the human environment; or

(2) Significant and substantial new information or new considerations

render such environmental impact statement inadequate.

(d) To the extent that the presiding officer determines it to be practicable, in accordance with paragraph (c) of this section, to adopt the environmental impact statement prepared by the Secretary of Energy, such adoption shall be deemed to satisfy all responsibilities of the Commission under NEPA and no further consideration under NEPA or this subpart shall be required.

(e) To the extent that it is not practicable, in accordance with paragraph (c) of this section, to adopt the environmental impact statement prepared by the Secretary of Energy, the presiding officer will:

(1) Determine whether the requirements of section 102(2) (A), (C), and (E) of NEPA and the regulations in this subpart have been met;

(2) Independently consider the final balance among conflicting factors contained in the record of the proceeding with a view to determining the appropriate action to be taken;

(3) Determine, after weighing the environmental, economic, technical and other benefits against environmental and other costs, whether the construction authorization or license should be issued, denied, or appropriately conditioned to protect environmental values;

(4) Determine, in an uncontested proceeding, whether the NEPA review conducted by the NRC staff has been adequate; and

(5) Determine, in a contested proceeding, whether in accordance with the regulations in this subpart, the construction authorization or license should be issued as proposed.

(f) In making the determinations described in paragraph (e) of this section, the environmental impact statement will be deemed modified to the extent that findings and conclusions differ from those in the final statement prepared by the Secretary of Energy, as it may have been supplemented. The initial decision will be distributed to any persons not otherwise entitled to receive it who responded to the request in the notice of docketing, as described in §51.26(c). If the Commission reaches conclusions different from those of the presiding officer with respect to such matters, the final environmental impact statement will be deemed modified to that extent and the decision will be similarly distributed.

(g) The provisions of this section shall be followed, in place of those set out in §51.104, in any proceedings for the issuance of a license to receive and possess source, special nuclear, and byproduct material at a geologic repository operations area.

[54 FR 27870, July 3, 1989, as amended at 69 FR 2276, Jan. 14, 2004; 77 FR 46600, Aug. 3, 2012]

RULEMAKING

§51.110 [Reserved]

PUBLIC NOTICE OF AND ACCESS TO ENVIRONMENTAL DOCUMENTS

§51.116 Notice of intent.

(a) In accordance with §51.26, the appropriate NRC staff director will publish in the FEDERAL REGISTER a notice of intent stating that an environmental impact statement will be prepared. The notice will contain the information specified in §51.27.

(b) Copies of the notice will be sent to appropriate Federal, State, and local agencies, and Indian Tribes, appropriate State, regional, and metropolitan clearinghouses and to interested persons upon request. A public announcement of the notice of intent will also be made.

§51.117 Draft environmental impact statement—notice of availability.

(a) Upon completion of a draft environmental impact statement or any supplement to a draft environmental impact statement, the appropriate NRC staff director will publish a notice of availability of the statement in the FEDERAL REGISTER.

(b) The notice will request comments on the proposed action and on the draft statement or any supplement to the draft statement and will specify where comments should be submitted and when the comment period expires.

(c) The notice will (1) state that copies of the draft statement or any supplement to the draft statement are available for public inspection; (2) state where inspection may be made,

and (3) state that any comments of Federal, State, and local agencies, Indian Tribes or other interested persons will be made available for public inspection when received.

(d) Copies of the notice will be sent to appropriate Federal, State, and local agencies, and Indian Tribes, appropriate State, regional, and metropolitan clearinghouses, and to interested persons upon request.

§ 51.118 Final environmental impact statement—notice of availability.

(a) Upon completion of a final environmental impact statement or any supplement to a final environmental impact statement, the appropriate NRC staff director will publish a notice of availability of the statement in the FEDERAL REGISTER. The notice will state that copies of the final statement or any supplement to the final statement are available for public inspection and where inspection may be made. Copies of the notice will be sent to appropriate Federal, State, and local agencies, and Indian Tribes, appropriate State, regional, and metropolitan clearinghouses and to interested persons upon request.

(b) Upon adoption of a final environmental impact statement or any supplement to a final environmental impact statement prepared by the Department of Energy with respect to a geologic repository that is subject to the Nuclear Waste Policy Act of 1982, the appropriate NRC staff director shall follow the procedures set out in paragraph (a) of this section.

[49 FR 9381, Mar. 12, 1984, as amended at 54 FR 27871, July 3, 1989]

§ 51.119 Publication of finding of no significant impact; distribution.

(a) As required by § 51.35, the appropriate NRC staff director will publish the finding of no significant impact in the FEDERAL REGISTER. The finding of no significant impact will be identified as a draft or final finding, and will contain the information specified in §§ 51.32 or 51.33, as appropriate. A draft finding of no significant impact will include a request for comments which specifies where comments should be submitted and when the comment period expires.

(b) The finding will state that copies of the finding, the environmental assessment setting forth the basis for the finding and any related environmental documents are available for public inspection and where inspection may be made.

(c) A copy of a final finding will be sent to appropriate Federal, State, and local agencies, and Indian Tribes, appropriate State, regional, and metropolitan clearinghouses, the applicant or petitioner for rulemaking and any other party to the proceeding, and if a draft finding was issued, to each commenter. Additional copies will be made available in accordance with § 51.123.

§ 51.120 Availability of environmental documents for public inspection.

Copies of environmental reports, draft and final environmental impact statements, environmental assessments, and findings of no significant impact, together with any related comments and environmental documents, will be made available at the NRC Web site, *http://www.nrc.gov*, and/or at the NRC Public Document Room.

[64 FR 48952, Sept. 9, 1999]

§ 51.121 Status of NEPA actions.

Individuals or organizations desiring information on the NRC's NEPA process or on the status of specific NEPA actions should address inquiries to:

(a) *Utilization facilities:* ATTN: Document Control Desk, Director, Office of Nuclear Reactor Regulation, U.S. Nuclear Regulatory Commission, Washington, DC 20555–0001, telephone (301) 415–1270, e-mail *RidsNrrOd@nrc.gov*.

(b) *Production facilities:* ATTN: Document Control Desk, Director, Office of Nuclear Material Safety and Safeguards, U.S. Nuclear Regulatory Commission, Washington, DC 20555–0001, telephone (301) 415–7800, e-mail *RidsNmssOd@nrc.gov*.

(c) *Materials licenses:* ATTN: Document Control Desk, Director, Office of Nuclear Material Safety and Safeguards, U.S. Nuclear Regulatory Commission, Washington, DC 20555–0001, telephone (301) 415–7800, e-mail *RidsNmssOd@nrc.gov*.

(d) *Rulemaking:* ATTN: Chief, Regulatory Analysis and Rulemaking Support Branch, Division of Rulemaking,

Environmental, and Financial Support, Office of Nuclear Material Safety and Safeguards, U.S. Nuclear Regulatory Commission, Washington, DC 20555–0001, telephone (800) 368–5642.

(e) *General environmental matters:* Executive Director for Operations, U.S. Nuclear Regulatory Commission, Washington, DC 20555, Telephone: (301) 415–1700.

[53 FR 13399, Apr. 25, 1988, as amended at 60 FR 24552, May 9, 1995; 68 FR 58811, Oct. 10, 2003; 73 FR 5724, Jan. 31, 2008; 77 FR 39907, July 6, 2012; 84 FR 65645, Nov. 29, 2019]

§ 51.122 List of interested organizations and groups.

The NRC Office of the Chief Information Officer will maintain a master list of organizations and groups, including relevant conservation commissions, known to be interested in the Commission's licensing and regulatory activities. The NRC Office of the Chief Information Officer with the assistance of the appropriate NRC staff director will select from this master list those organizations and groups that may have an interest in a specific NRC NEPA action and will promptly notify such organizations and groups of the availability of a draft environmental impact statement or a draft finding of no significant impact.

[49 FR 9381, Mar. 12, 1984, as amended at 52 FR 31612, Aug. 21, 1987; 54 FR 53316, Dec. 28, 1989; 77 FR 39907, July 6, 2012]

§ 51.123 Charges for environmental documents; distribution to public; distribution to governmental agencies.

(a) *Distribution to public.* Upon written request to the Office of the Chief Information Officer, U.S. Nuclear Regulatory Commission, Washington, DC 20555–0001, e-mail *distribution.resource@nrc.gov,* and to the extent available, single copies of draft environmental impact statements and draft findings of no significant impact will be made available to interested persons without charge. Single copies of final environmental impact statements and final findings of no significant impact will also be provided without charge to the persons listed in §§ 51.93(a) and 51.119(c), respectively. When more than one copy of an environmental impact statement or a finding of no significant impact is requested or when available NRC copies have been exhausted, the requestor will be advised that the NRC will provide copies at the charges specified in § 9.35 of this chapter.

(b) *Distribution to governmental agencies.* Upon written request to the Office of the Chief Information Officer, U.S. Nuclear Regulatory Commission, Washington, DC 20555–0001, e-mail *distribution.resource@nrc.gov,* and to the extent available, copies of draft and final environmental impact statements and draft final findings of no significant impact will be made available in the number requested to Federal, State and local agencies, Indian Tribes, and State, regional, and metropolitan clearinghouses. When available NRC copies have been exhausted, the requester will be advised that the NRC will provide copies at the charges specified in § 9.35 of this chapter.

(c) *Charges.* Charges for the reproduction of environmental documents by the NRC at locations other than the NRC Public Document Room located in Washington, DC vary according to location.

[50 FR 21037, May 22, 1985, as amended at 52 FR 31612, Aug. 21, 1987; 53 FR 43421, Oct. 27, 1988; 61 FR 9902, Mar. 12, 1996; 64 FR 48952, Sept. 9, 1999; 68 FR 58812, Oct. 10, 2003; 80 FR 74980, Dec. 1, 2015]

COMMENTING

§ 51.124 Commission duty to comment.

It is the policy of the Commission to comment on draft environmental impact statements prepared by other Federal agencies, consistent with the provisions of 40 CFR 1503.2 and 1503.3.

RESPONSIBLE OFFICIAL

§ 51.125 Responsible official.

The Executive Director for Operations shall be responsible for overall review of NRC NEPA compliance, except for matters under the jurisdiction of a presiding officer, administrative judge, administrative law judge, Atomic Safety and Licensing Board, or the Commission acting as a collegial body.

[77 FR 46600, Aug. 3, 2012]

APPENDIX A TO SUBPART A OF PART 51—FORMAT FOR PRESENTATION OF MATERIAL IN ENVIRONMENTAL IMPACT STATEMENTS

1. General
2. Cover sheet
3. Summary
4. Purpose of and need for action
5. Alternatives including the proposed action
6. Affected environment
7. Environmental consequences and mitigating actions
8. List of preparers
9. Appendices

1. *General.*

(a) The Commission will use a format for environmental impact statements which will encourage good analysis and clear presentation of the alternatives including the proposed action. The following standard format for environmental impact statements should be followed unless there is a compelling reason to do otherwise:

(1) Cover sheet*

(2) Summary*

(3) Table of Contents

(4) Purpose of and Need for Action*

(5) Alternatives including the proposed action*

(6) Affected Environment*

(7) Environmental Consequences and Mitigating Actions*

(8) List of Preparers*

(9) List of Agencies, Organizations and Persons to Whom Copies of the Statement are Sent

(10) Substantive Comments Received and NRC Staff Responses

(11) Index

(12) Appendices (if any)*

If a different format is used, it shall include paragraphs (1), (2), (3), (8), (9), (10), and (11) of this section and shall include the substance of paragraphs (4), (5), (6), (7), and (12) of this section, in any appropriate format.

Additional guidance on the presentation of material under the format headings identified by an asterisk is set out in sections 2.–9. of this appendix.

(b) The techniques of tiering and incorporation by reference described respectively in 40 CFR 1502.20 and 1508.28 and 40 CFR 1502.21[1] of CEQ's NEPA regulations may be used as appropriate to aid in the presentation of issues, eliminate repetition or reduce the size of an environmental impact statement. In appropriate circumstances, draft or final environmental impact statements prepared by other Federal agencies may be adopted in whole or in part in accordance with the procedures outlined in 40 CFR 1506.3[2] of CEQ's NEPA regulations. In final environmental impact statements, material under the following format headings will normally be presented in less than 150 pages: Purpose of and Need for Action, Alternatives Including the Proposed Action, Affected Environment, and Environmental Consequences and Mitigating Actions. For proposals of unusual scope or complexity, the material presented under these format headings may extend to 300 pages.

2. *Cover sheet.*

The cover sheet will not exceed one page. It will include:

(a) The name of the NRC office responsible for preparing the statement and a list of any cooperating agencies.

(b) The title of the proposed action that is the subject of the statement with a list of the states, counties or municipalities where the facility or other subject of the action is located, as appropriate.

(c) The name, address, and telephone number of the individual in NRC who can supply further information.

(d) A designation of the statement as a draft or final statement, or a draft or final supplement.

(e) A one paragraph abstract of the statement.

(f) For draft environmental impact statements, the date by which comments must be received. This date may be specified in the form of the following or a substantially similar statement:

"Comments should be filed no later than[3] days after the date on which the Environmental Protection Agency notice stating that the draft environmental impact statement has been filed with EPA is published in the FEDERAL REGISTER. Comments received after the expiration of the comment period will be considered if it is practical to do so but assurance of consideration of late comments cannot be given."

3. *Summary.*

Each environmental impact statement will contain a summary which adequately and accurately summarizes the statement. The summary will stress the major issues considered. The summary will discuss the areas of controversy, will identify any remaining issues to be resolved, and will present the major conclusions and recommendations. The summary will normally not exceed 15 pages.

[1] *Tiering*—40 CFR 1502.20, 40 CFR 1508.28; *Incorporation by reference*—40 CFR 1502.21.

[2] *Adoption*—40 CFR 1506.3.

[3] The number of days in the comment period should be inserted. The minimum comment period is 45 days (see § 51.73.)

4. *Purpose of and need for action.*

The statement will briefly describe and specify the need for the proposed action. The alternative of no action will be discussed. In the case of nuclear power plant construction or siting, consideration will be given to the potential impact of conservation measures in determining the demand for power and consequent need for additional generating capacity.

5. *Alternatives including the proposed action.*

This section is the heart of the environmental impact statement. It will present the environmental impacts of the proposal and the alternatives in comparative form. Where important to the comparative evaluation of alternatives, appropriate mitigating measures of the alternatives will be discussed. All reasonable alternatives will be identified. The range of alternatives discussed will encompass those proposed to be considered by the ultimate decisionmaker. An otherwise reasonable alternative will not be excluded from discussion solely on the ground that it is not within the jurisdiction of the NRC.[4] The discussion of alternatives will take into accounts, without duplicating, the environmental information and analyses included in sections, 4., 6. and 7. of this appendix.

In the draft environmental impact statement, this section will either include a preliminary recommendation on the action to be taken, or identify the alternatives under consideration.

In the final environmental impact statement, this section will include a final recommendation on the action to be taken.

6. *Affected environment.*

The environmental impact statement will succinctly describe the environment to be affected by the proposed action. Data and analyses in the statement will be commensurate with the importance of the impact, with less important material summarized, consolidated, or simply referenced. Effort and attention will be concentrated on important issues; useless bulk will be eliminated.

7. *Environmental consequences and mitigating actions.*

This section discusses the environmental consequences of alternatives, including the proposed actions and any mitigating actions which may be taken. Alternatives eliminated from detailed study will be identified and a discussion of those alternatives will be confined to a brief statement of the reasons why the alternatives were eliminated. The level of information for each alternative considered in detail will reflect the depth of analysis required for sound decisionmaking.

The discussion will include any adverse environmental effects which cannot be avoided should the alternative be implemented, the relationship between short-term uses of man's environment and the maintenance and enhancement of long-term productivity, and any irreversible or irretrievable commitments of resources which would be involved in the alternative should it be implemented. This section will include discussions of:

(a) Direct effects and their significance.

(b) Indirect effects and their significance.

(c) Possible conflicts between the alternative and the objectives of Federal, regional, State, and local (and in the case of a reservation, Indian Tribe) land use plans, policies and controls for the area concerned.

(d) Means to mitigate adverse environmental impacts.

8. *List of preparers.*

The environmental impact statement will list the names and qualifications (expertise, experience, professional disciplines), of the persons who were primarily responsible for preparing the environmental impact statement or significant background papers. Persons responsible for making an independent evaluation of information submitted by the applicant or petitioner for rulemaking or others will be included in the list. Where possible, the persons who are responsible for a particular analysis, including analyses in background papers, will be identified.

9. *Appendices.*

An appendix to an environmental impact statement will:

(a) Consist of material prepared in connection with an environmental impact statement (as distinct from material which is not so prepared and which is incorporated by reference (40 CFR 1502.21)).

(b) Normally consist of material which substantiates any analysis fundamental to the impact statement. Discussion of methodology used may be placed in an appendix.

(c) Normally be analytic.

(d) Be relevant to the decision to be made.

(e) Be circulated with the environmental impact statement or be readily available on request.

Discussion of Footnotes

1. *Tiering.*

40 CFR 1502.20 states:

''Agencies are encouraged to tier their environmental impact statements to eliminate repetitive discussions of the same issues and to focus on the actual issues ripe for decision at each level of environmental review

[4] With respect to limitations on NRC's NEPA authority and responsibility imposed by the Federal Water Pollution Control Act Amendments of 1972, see §§ 51.10(c), 51.22(c)(17) and 51.71(d).

(§1508.28). Whenever a broad environmental impact statement has been prepared (such as a program or policy statement) and a subsequent statement or environmental assessment is then prepared on an action included within the entire program or policy (such as a site specific action) the subsequent statement or environmental assessment need only summarize the issues discussed in the broader statement and incorporate discussions from the broader statement by reference and shall concentrate on the issues specific to the subsequent action. The subsequent document shall state where the earlier document is available. Tiering may also be appropriate for different stages of actions. (Sec. 1508.28).''

40 CFR 1508.28 states:

'' 'Tiering' refers to the coverage of general matters in broader environmental impact statements (such as national program or policy statements) with subsequent narrower statements or environmental analyses (such as regional or basinwide program statements or ultimately site-specific statements) incorporating by reference the general discussions and concentrating solely on the issues specific to the statement subsequently prepared. Tiering is appropriate when the sequence of statements or analyses is:

''(a) From a program, plan, or policy environmental impact statement to a program, plan, or policy statement or analysis of lesser scope or to a site-specific statement or analysis.

''(b) From an environmental impact statement on a specific action at an early stage (such as need and site selection) to a supplement (which is preferred) or a subsequent statement or analysis at a later stage (such as environmental mitigation). Tiering in such cases is appropriate when it helps the lead agency to focus on the issues which are ripe for decision and exclude from consideration issues already decided or not yet ripe.''

Incorporation by reference. 40 CFR 1502.21 states:

''Agencies shall incorporate material into an environmental impact statement by reference when the effect will be to cut down on bulk without impeding agency and public review of the action. The incorporated material shall be cited in the statement and its content briefly described. No material may be incorporated by reference unless it is reasonably available for inspection by potentially interested persons within the time allowed for comment. Material based on proprietary data which is itself not available for review and comment shall not be incorporated by reference.''

2. *Adoption.*

40 CFR 1506.3 states:

''(a) An agency may adopt a Federal draft or final environmental impact statement or portion thereof provided that the statement or portion thereof meets the standards for an adequate statement under these regulations.

''(b) If the actions covered by the original environmental impact statement and the proposed action are substantially the same, the agency adopting another agency's statement is not required to recirculate it except as a final statement. Otherwise the adopting agency shall treat the statement as a draft and recirculate it (except as provided in paragraph (c) of this section).

''(c) A cooperating agency may adopt without recirculating the environmental impact statement of a lead agency when, after an independent review of the statement, the cooperating agency concludes that its comments and suggestions have been satisfied.

''(d) When an agency adopts a statement which is not final within the agency that prepared it, or when the action it assesses is the subject of a referral under part 1504, or when the statement's adequacy is the subject of a judicial action which is not final, the agency shall so specify.''

[49 FR 9381, Mar. 12, 1984, as amended at 61 FR 28490, June 5, 1996; 61 FR 66546, Dec. 18, 1996]

APPENDIX B TO SUBPART A OF PART 51—ENVIRONMENTAL EFFECT OF RENEWING THE OPERATING LICENSE OF A NUCLEAR POWER PLANT

The Commission has assessed the environmental impacts associated with granting a renewed operating license for a nuclear power plant to a licensee who holds either an operating license or construction permit as of June 30, 1995. Table B–1 summarizes the Commission's findings on the scope and magnitude of environmental impacts of renewing the operating license for a nuclear power plant as required by section 102(2) of the National Environmental Policy Act of 1969, as amended. Table B–1, subject to an evaluation of those issues identified in Category 2 as requiring further analysis and possible significant new information, represents the analysis of the environmental impacts associated with renewal of any operating license and is to be used in accordance with §51.95(c). On a 10-year cycle, the Commission intends to review the material in this appendix and update it if necessary. A scoping notice must be published in the FEDERAL REGISTER indicating the results of the NRC's review and inviting public comments and proposals for other areas that should be updated.

TABLE B–1—SUMMARY OF FINDINGS ON NEPA ISSUES FOR LICENSE RENEWAL OF NUCLEAR POWER PLANTS [1]

Issue	Category [2]	Finding [3]
Land Use		
Onsite land use	1	SMALL. Changes in onsite land use from continued operations and refurbishment associated with license renewal would be a small fraction of the nuclear power plant site and would involve only land that is controlled by the licensee.
Offsite land use	1	SMALL. Offsite land use would not be affected by continued operations and refurbishment associated with license renewal.
Offsite land use in transmission line right-of-ways (ROWs) [4].	1	SMALL. Use of transmission line ROWs from continued operations and refurbishment associated with license renewal would continue with no change in land use restrictions.
Visual Resources		
Aesthetic impacts	1	SMALL. No important changes to the visual appearance of plant structures or transmission lines are expected from continued operations and refurbishment associated with license renewal.
Air Quality		
Air quality impacts (all plants)	1	SMALL. Air quality impacts from continued operations and refurbishment associated with license renewal are expected to be small at all plants. Emissions resulting from refurbishment activities at locations in or near air quality nonattainment or maintenance areas would be short-lived and would cease after these refurbishment activities are completed. Operating experience has shown that the scale of refurbishment activities has not resulted in exceedance of the *de minimis* thresholds for criteria pollutants, and best management practices including fugitive dust controls and the imposition of permit conditions in State and local air emissions permits would ensure conformance with applicable State or Tribal Implementation Plans. Emissions from emergency diesel generators and fire pumps and routine operations of boilers used for space heating would not be a concern, even for plants located in or adjacent to nonattainment areas. Impacts from cooling tower particulate emissions even under the worst-case situations have been small.
Air quality effects of transmission lines [4].	1	SMALL. Production of ozone and oxides of nitrogen is insignificant and does not contribute measurably to ambient levels of these gases.
Noise		
Noise impacts	1	SMALL. Noise levels would remain below regulatory guidelines for offsite receptors during continued operations and refurbishment associated with license renewal.
Geologic Environment		
Geology and soils	1	SMALL. The effect of geologic and soil conditions on plant operations and the impact of continued operations and refurbishment activities on geology and soils would be small for all nuclear power plants and would not change appreciably during the license renewal term.
Surface Water Resources		
Surface water use and quality (non-cooling system impacts).	1	SMALL. Impacts are expected to be small if best management practices are employed to control soil erosion and spills. Surface water use associated with continued operations and refurbishment associated with license renewal would not increase significantly or would be reduced if refurbishment occurs during a plant outage.
Altered current patterns at intake and discharge structures.	1	SMALL. Altered current patterns would be limited to the area in the vicinity of the intake and discharge structures. These impacts have been small at operating nuclear power plants.
Altered salinity gradients	1	SMALL. Effects on salinity gradients would be limited to the area in the vicinity of the intake and discharge structures. These impacts have been small at operating nuclear power plants.
Altered thermal stratification of lakes	1	SMALL. Effects on thermal stratification would be limited to the area in the vicinity of the intake and discharge structures. These impacts have been small at operating nuclear power plants.
Scouring caused by discharged cooling water.	1	SMALL. Scouring effects would be limited to the area in the vicinity of the intake and discharge structures. These impacts have been small at operating nuclear power plants.

TABLE B–1—SUMMARY OF FINDINGS ON NEPA ISSUES FOR LICENSE RENEWAL OF NUCLEAR POWER PLANTS [1]—Continued

Issue	Category [2]	Finding [3]
Discharge of metals in cooling system effluent.	1	SMALL. Discharges of metals have not been found to be a problem at operating nuclear power plants with cooling-tower-based heat dissipation systems and have been satisfactorily mitigated at other plants. Discharges are monitored and controlled as part of the National Pollutant Discharge Elimination System (NPDES) permit process.
Discharge of biocides, sanitary wastes, and minor chemical spills.	1	SMALL. The effects of these discharges are regulated by Federal and State environmental agencies. Discharges are monitored and controlled as part of the NPDES permit process. These impacts have been small at operating nuclear power plants.
Surface water use conflicts (plants with once-through cooling systems).	1	SMALL. These conflicts have not been found to be a problem at operating nuclear power plants with once-through heat dissipation systems.
Surface water use conflicts (plants with cooling ponds or cooling towers using makeup water from a river).	2	SMALL or MODERATE. Impacts could be of small or moderate significance, depending on makeup water requirements, water availability, and competing water demands.
Effects of dredging on surface water quality.	1	SMALL. Dredging to remove accumulated sediments in the vicinity of intake and discharge structures and to maintain barge shipping has not been found to be a problem for surface water quality. Dredging is performed under permit from the U.S. Army Corps of Engineers, and possibly, from other State or local agencies.
Temperature effects on sediment transport capacity.	1	SMALL. These effects have not been found to be a problem at operating nuclear power plants and are not expected to be a problem.
Groundwater Resources		
Groundwater contamination and use (non-cooling system impacts).	1	SMALL. Extensive dewatering is not anticipated from continued operations and refurbishment associated with license renewal. Industrial practices involving the use of solvents, hydrocarbons, heavy metals, or other chemicals, and/or the use of wastewater ponds or lagoons have the potential to contaminate site groundwater, soil, and subsoil. Contamination is subject to State or Environmental Protection Agency regulated clean-up and monitoring programs. The application of best management practices for handling any materials produced or used during these activities would reduce impacts.
Groundwater use conflicts (plants that withdraw less than 100 gallons per minute [gpm]).	1	SMALL. Plants that withdraw less than 100 gpm are not expected to cause any groundwater use conflicts.
Groundwater use conflicts (plants that withdraw more than 100 gallons per minute [gpm]).	2	SMALL, MODERATE, or LARGE. Plants that withdraw more than 100 gpm could cause groundwater use conflicts with nearby groundwater users.
Groundwater use conflicts (plants with closed-cycle cooling systems that withdraw makeup water from a river).	2	SMALL, MODERATE, or LARGE. Water use conflicts could result from water withdrawals from rivers during low-flow conditions, which may affect aquifer recharge. The significance of impacts would depend on makeup water requirements, water availability, and competing water demands.
Groundwater quality degradation resulting from water withdrawals.	1	SMALL. Groundwater withdrawals at operating nuclear power plants would not contribute significantly to groundwater quality degradation.
Groundwater quality degradation (plants with cooling ponds in salt marshes).	1	SMALL. Sites with closed-cycle cooling ponds could degrade groundwater quality. However, groundwater in salt marshes is naturally brackish and thus, not potable. Consequently, the human use of such groundwater is limited to industrial purposes.
Groundwater quality degradation (plants with cooling ponds at inland sites).	2	SMALL, MODERATE, or LARGE. Inland sites with closed-cycle cooling ponds could degrade groundwater quality. The significance of the impact would depend on cooling pond water quality, site hydrogeologic conditions (including the interaction of surface water and groundwater), and the location, depth, and pump rate of water wells.
Radionuclides released to groundwater.	2	SMALL or MODERATE. Leaks of radioactive liquids from plant components and pipes have occurred at numerous plants. Groundwater protection programs have been established at all operating nuclear power plants to minimize the potential impact from any inadvertent releases. The magnitude of impacts would depend on site-specific characteristics.
Terrestrial Resources		
Effects on terrestrial resources (non-cooling system impacts).	2	SMALL, MODERATE, or LARGE. Impacts resulting from continued operations and refurbishment associated with license renewal may affect terrestrial communities. Application of best management practices would reduce the potential for impacts. The magnitude of impacts would depend on the nature of the activity, the status of the resources that could be affected, and the effectiveness of mitigation.

TABLE B–1—SUMMARY OF FINDINGS ON NEPA ISSUES FOR LICENSE RENEWAL OF NUCLEAR POWER PLANTS [1]—Continued

Issue	Category [2]	Finding [3]
Exposure of terrestrial organisms to radionuclides.	1	SMALL. Doses to terrestrial organisms from continued operations and refurbishment associated with license renewal are expected to be well below exposure guidelines developed to protect these organisms.
Cooling system impacts on terrestrial resources (plants with once-through cooling systems or cooling ponds).	1	SMALL. No adverse effects to terrestrial plants or animals have been reported as a result of increased water temperatures, fogging, humidity, or reduced habitat quality. Due to the low concentrations of contaminants in cooling system effluents, uptake and accumulation of contaminants in the tissues of wildlife exposed to the contaminated water or aquatic food sources are not expected to be significant issues.
Cooling tower impacts on vegetation (plants with cooling towers).	1	SMALL. Impacts from salt drift, icing, fogging, or increased humidity associated with cooling tower operation have the potential to affect adjacent vegetation, but these impacts have been small at operating nuclear power plants and are not expected to change over the license renewal term.
Bird collisions with plant structures and transmission lines [4].	1	SMALL. Bird collisions with cooling towers and other plant structures and transmission lines occur at rates that are unlikely to affect local or migratory populations and the rates are not expected to change.
Water use conflicts with terrestrial resources (plants with cooling ponds or cooling towers using makeup water from a river).	2	SMALL or MODERATE. Impacts on terrestrial resources in riparian communities affected by water use conflicts could be of moderate significance.
Transmission line right-of-way (ROW) management impacts on terrestrial resources [4].	1	SMALL. Continued ROW management during the license renewal term is expected to keep terrestrial communities in their current condition. Application of best management practices would reduce the potential for impacts.
Electromagnetic fields on flora and fauna (plants, agricultural crops, honeybees, wildlife, livestock) [4].	1	SMALL. No significant impacts of electromagnetic fields on terrestrial flora and fauna have been identified. Such effects are not expected to be a problem during the license renewal term.
Aquatic Resources		
Impingement and entrainment of aquatic organisms (plants with once-through cooling systems or cooling ponds).	2	SMALL, MODERATE, or LARGE. The impacts of impingement and entrainment are small at many plants but may be moderate or even large at a few plants with once-through and cooling-pond cooling systems, depending on cooling system withdrawal rates and volumes and the aquatic resources at the site.
Impingement and entrainment of aquatic organisms (plants with cooling towers).	1	SMALL. Impingement and entrainment rates are lower at plants that use closed-cycle cooling with cooling towers because the rates and volumes of water withdrawal needed for makeup are minimized.
Entrainment of phytoplankton and zooplankton (all plants).	1	SMALL. Entrainment of phytoplankton and zooplankton has not been found to be a problem at operating nuclear power plants and is not expected to be a problem during the license renewal term.
Thermal impacts on aquatic organisms (plants with once-through cooling systems or cooling ponds).	2	SMALL, MODERATE, or LARGE. Most of the effects associated with thermal discharges are localized and are not expected to affect overall stability of populations or resources. The magnitude of impacts, however, would depend on site-specific thermal plume characteristics and the nature of aquatic resources in the area.
Thermal impacts on aquatic organisms (plants with cooling towers).	1	SMALL. Thermal effects associated with plants that use cooling towers are expected to be small because of the reduced amount of heated discharge.
Infrequently reported thermal impacts (all plants).	1	SMALL. Continued operations during the license renewal term are expected to have small thermal impacts with respect to the following: Cold shock has been satisfactorily mitigated at operating nuclear plants with once-through cooling systems, has not endangered fish populations or been found to be a problem at operating nuclear power plants with cooling towers or cooling ponds, and is not expected to be a problem. Thermal plumes have not been found to be a problem at operating nuclear power plants and are not expected to be a problem. Thermal discharge may have localized effects but is not expected to affect the larger geographical distribution of aquatic organisms. Premature emergence has been found to be a localized effect at some operating nuclear power plants but has not been a problem and is not expected to be a problem. Stimulation of nuisance organisms has been satisfactorily mitigated at the single nuclear power plant with a once-through cooling system where previously it was a problem. It has not been found to be a problem at operating nuclear power plants with cooling towers or cooling ponds and is not expected to be a problem.

TABLE B–1—SUMMARY OF FINDINGS ON NEPA ISSUES FOR LICENSE RENEWAL OF NUCLEAR POWER PLANTS [1]—Continued

Issue	Category [2]	Finding [3]
Effects of cooling water discharge on dissolved oxygen, gas supersaturation, and eutrophication.	1	SMALL. Gas supersaturation was a concern at a small number of operating nuclear power plants with once-through cooling systems but has been mitigated. Low dissolved oxygen was a concern at one nuclear power plant with a once-through cooling system but has been mitigated. Eutrophication (nutrient loading) and resulting effects on chemical and biological oxygen demands have not been found to be a problem at operating nuclear power plants.
Effects of non-radiological contaminants on aquatic organisms.	1	SMALL. Best management practices and discharge limitations of NPDES permits are expected to minimize the potential for impacts to aquatic resources during continued operations and refurbishment associated with license renewal. Accumulation of metal contaminants has been a concern at a few nuclear power plants but has been satisfactorily mitigated by replacing copper alloy condenser tubes with those of another metal.
Exposure of aquatic organisms to radionuclides.	1	SMALL. Doses to aquatic organisms are expected to be well below exposure guidelines developed to protect these aquatic organisms.
Effects of dredging on aquatic organisms.	1	SMALL. Dredging at nuclear power plants is expected to occur infrequently, would be of relatively short duration, and would affect relatively small areas. Dredging is performed under permit from the U.S. Army Corps of Engineers, and possibly, from other State or local agencies.
Water use conflicts with aquatic resources (plants with cooling ponds or cooling towers using makeup water from a river).	2	SMALL or MODERATE. Impacts on aquatic resources in stream communities affected by water use conflicts could be of moderate significance in some situations.
Effects on aquatic resources (non-cooling system impacts).	1	SMALL. Licensee application of appropriate mitigation measures is expected to result in no more than small changes to aquatic communities from their current condition.
Impacts of transmission line right-of-way (ROW) management on aquatic resources [4].	1	SMALL. Licensee application of best management practices to ROW maintenance is expected to result in no more than small impacts to aquatic resources.
Losses from predation, parasitism, and disease among organisms exposed to sublethal stresses.	1	SMALL. These types of losses have not been found to be a problem at operating nuclear power plants and are not expected to be a problem during the license renewal term.
Special Status Species and Habitats		
Threatened, endangered, and protected species and essential fish habitat.	2	The magnitude of impacts on threatened, endangered, and protected species, critical habitat, and essential fish habitat would depend on the occurrence of listed species and habitats and the effects of power plant systems on them. Consultation with appropriate agencies would be needed to determine whether special status species or habitats are present and whether they would be adversely affected by continued operations and refurbishment associated with license renewal.
Historic and Cultural Resources		
Historic and cultural resources [4]	2	Continued operations and refurbishment associated with license renewal are expected to have no more than small impacts on historic and cultural resources located onsite and in the transmission line ROW because most impacts could be mitigated by avoiding those resources. The National Historic Preservation Act (NHPA) requires the Federal agency to consult with the State Historic Preservation Officer (SHPO) and appropriate Native American Tribes to determine the potential effects on historic properties and mitigation, if necessary.
Socioeconomics		
Employment and income, recreation and tourism.	1	SMALL. Although most nuclear plants have large numbers of employees with higher than average wages and salaries, employment, income, recreation, and tourism impacts from continued operations and refurbishment associated with license renewal are expected to be small.
Tax revenues	1	SMALL. Nuclear plants provide tax revenue to local jurisdictions in the form of property tax payments, payments in lieu of tax (PILOT), or tax payments on energy production. The amount of tax revenue paid during the license renewal term as a result of continued operations and refurbishment associated with license renewal is not expected to change.

TABLE B–1—SUMMARY OF FINDINGS ON NEPA ISSUES FOR LICENSE RENEWAL OF NUCLEAR POWER PLANTS [1]—Continued

Issue	Category [2]	Finding [3]
Community services and education ..	1	SMALL. Changes resulting from continued operations and refurbishment associated with license renewal to local community and educational services would be small. With little or no change in employment at the licensee's plant, value of the power plant, payments on energy production, and PILOT payments expected during the license renewal term, community and educational services would not be affected by continued power plant operations.
Population and housing	1	SMALL. Changes resulting from continued operations and refurbishment associated with license renewal to regional population and housing availability and value would be small. With little or no change in employment at the licensee's plant expected during the license renewal term, population and housing availability and values would not be affected by continued power plant operations.
Transportation	1	SMALL. Changes resulting from continued operations and refurbishment associated with license renewal to traffic volumes would be small.
Human Health		
Radiation exposures to the public	1	SMALL. Radiation doses to the public from continued operations and refurbishment associated with license renewal are expected to continue at current levels, and would be well below regulatory limits.
Radiation exposures to plant workers	1	SMALL. Occupational doses from continued operations and refurbishment associated with license renewal are expected to be within the range of doses experienced during the current license term, and would continue to be well below regulatory limits.
Human health impact from chemicals	1	SMALL. Chemical hazards to plant workers resulting from continued operations and refurbishment associated with license renewal are expected to be minimized by the licensee implementing good industrial hygiene practices as required by permits and Federal and State regulations. Chemical releases to the environment and the potential for impacts to the public are expected to be minimized by adherence to discharge limitations of NPDES and other permits.
Microbiological hazards to the public (plants with cooling ponds or canals or cooling towers that discharge to a river).	2	SMALL, MODERATE, or LARGE. These organisms are not expected to be a problem at most operating plants except possibly at plants using cooling ponds, lakes, or canals, or that discharge into rivers. Impacts would depend on site-specific characteristics.
Microbiological hazards to plant workers.	1	SMALL. Occupational health impacts are expected to be controlled by continued application of accepted industrial hygiene practices to minimize worker exposures as required by permits and Federal and State regulations.
Chronic effects of electromagnetic fields (EMFs) [4] [6].	N/A [5]	Uncertain impact. Studies of 60-Hz EMFs have not uncovered consistent evidence linking harmful effects with field exposures. EMFs are unlike other agents that have a toxic effect (e.g., toxic chemicals and ionizing radiation) in that dramatic acute effects cannot be forced and longer-term effects, if real, are subtle. Because the state of the science is currently inadequate, no generic conclusion on human health impacts is possible.
Physical occupational hazards	1	SMALL. Occupational safety and health hazards are generic to all types of electrical generating stations, including nuclear power plants, and are of small significance if the workers adhere to safety standards and use protective equipment as required by Federal and State regulations.
Electric shock hazards [4]	2	SMALL, MODERATE, or LARGE. Electrical shock potential is of small significance for transmission lines that are operated in adherence with the National Electrical Safety Code (NESC). Without a review of conformance with NESC criteria of each nuclear power plant's in-scope transmission lines, it is not possible to determine the significance of the electrical shock potential.
Postulated Accidents		
Design-basis accidents	1	SMALL. The NRC staff has concluded that the environmental impacts of design-basis accidents are of small significance for all plants.
Severe accidents	2	SMALL. The probability-weighted consequences of atmospheric releases, fallout onto open bodies of water, releases to groundwater, and societal and economic impacts from severe accidents are small for all plants. However, alternatives to mitigate severe accidents must be considered for all plants that have not considered such alternatives.

TABLE B–1—SUMMARY OF FINDINGS ON NEPA ISSUES FOR LICENSE RENEWAL OF NUCLEAR POWER PLANTS [1]—Continued

Issue	Category [2]	Finding [3]
Environmental Justice		
Minority and low-income populations	2	Impacts to minority and low-income populations and subsistence consumption resulting from continued operations and refurbishment associated with license renewal will be addressed in plant-specific reviews. See NRC Policy Statement on the Treatment of Environmental Justice Matters in NRC Regulatory and Licensing Actions (69 FR 52040; August 24, 2004).
Waste Management		
Low-level waste storage and disposal.	1	SMALL. The comprehensive regulatory controls that are in place and the low public doses being achieved at reactors ensure that the radiological impacts to the environment would remain small during the license renewal term.
Onsite storage of spent nuclear fuel	1	During the license renewal term, SMALL. The expected increase in the volume of spent nuclear fuel from an additional 20 years of operation can be safely accommodated onsite during the license renewal term with small environmental impacts through dry or pool storage at all plants. For the period after the licensed life for reactor operations, the impacts of onsite storage of spent nuclear fuel during the continued storage period are discussed in NUREG–2157 and as stated in § 51.23(b), shall be deemed incorporated into this issue.
Offsite radiological impacts of spent nuclear fuel and high-level waste disposal.	1	For the high-level waste and spent-fuel disposal component of the fuel cycle, the EPA established a dose limit of 0.15 mSv (15 millirem) per year for the first 10,000 years and 1.0 mSv (100 millirem) per year between 10,000 years and 1 million years for offsite releases of radionuclides at the proposed repository at Yucca Mountain, Nevada. The Commission concludes that the impacts would not be sufficiently large to require the NEPA conclusion, for any plant, that the option of extended operation under 10 CFR part 54 should be eliminated. Accordingly, while the Commission has not assigned a single level of significance for the impacts of spent fuel and high level waste disposal, this issue is considered Category 1.
Mixed-waste storage and disposal	1	SMALL. The comprehensive regulatory controls and the facilities and procedures that are in place ensure proper handling and storage, as well as negligible doses and exposure to toxic materials for the public and the environment at all plants. License renewal would not increase the small, continuing risk to human health and the environment posed by mixed waste at all plants. The radiological and nonradiological environmental impacts of long-term disposal of mixed waste from any individual plant at licensed sites are small.
Nonradioactive waste storage and disposal.	1	SMALL. No changes to systems that generate nonradioactive waste are anticipated during the license renewal term. Facilities and procedures are in place to ensure continued proper handling, storage, and disposal, as well as negligible exposure to toxic materials for the public and the environment at all plants.
Cumulative Impacts		
Cumulative impacts	2	Cumulative impacts of continued operations and refurbishment associated with license renewal must be considered on a plant-specific basis. Impacts would depend on regional resource characteristics, the resource-specific impacts of license renewal, and the cumulative significance of other factors affecting the resource.
Uranium Fuel Cycle		
Offsite radiological impacts—individual impacts from other than the disposal of spent fuel and high-level waste.	1	SMALL. The impacts to the public from radiological exposures have been considered by the Commission in Table S–3 of this part. Based on information in the GEIS, impacts to individuals from radioactive gaseous and liquid releases, including radon-222 and technetium-99, would remain at or below the NRC's regulatory limits.
Offsite radiological impacts—collective impacts from other than the disposal of spent fuel and high-level waste.	1	There are no regulatory limits applicable to collective doses to the general public from fuel-cycle facilities. The practice of estimating health effects on the basis of collective doses may not be meaningful. All fuel-cycle facilities are designed and operated to meet the applicable regulatory limits and standards. The Commission concludes that the collective impacts are acceptable.

TABLE B–1—SUMMARY OF FINDINGS ON NEPA ISSUES FOR LICENSE RENEWAL OF NUCLEAR POWER PLANTS [1]—Continued

Issue	Category [2]	Finding [3]
		The Commission concludes that the impacts would not be sufficiently large to require the NEPA conclusion, for any plant, that the option of extended operation under 10 CFR part 54 should be eliminated. Accordingly, while the Commission has not assigned a single level of significance for the collective impacts of the uranium fuel cycle, this issue is considered Category 1.
Nonradiological impacts of the uranium fuel cycle.	1	SMALL. The nonradiological impacts of the uranium fuel cycle resulting from the renewal of an operating license for any plant would be small.
Transportation	1	SMALL. The impacts of transporting materials to and from uranium-fuel-cycle facilities on workers, the public, and the environment are expected to be small.
Termination of Nuclear Power Plant Operations and Decommissioning		
Termination of plant operations and decommissioning.	1	SMALL. License renewal is expected to have a negligible effect on the impacts of terminating operations and decommissioning on all resources.

[1] Data supporting this table are contained in NUREG–1437, Revision 1, ''Generic Environmental Impact Statement for License Renewal of Nuclear Plants'' (June 2013).

[2] The numerical entries in this column are based on the following category definitions:

Category 1: For the issue, the analysis reported in the Generic Environmental Impact Statement has shown:

(1) The environmental impacts associated with the issue have been determined to apply either to all plants or, for some issues, to plants having a specific type of cooling system or other specified plant or site characteristic;

(2) A single significance level (*i.e.*, small, moderate, or large) has been assigned to the impacts (except for Offsite radiological impacts—collective impacts from other than the disposal of spent fuel and high-level waste); and

(3) Mitigation of adverse impacts associated with the issue has been considered in the analysis, and it has been determined that additional plant-specific mitigation measures are not likely to be sufficiently beneficial to warrant implementation.

The generic analysis of the issue may be adopted in each plant-specific review.

Category 2: For the issue, the analysis reported in the Generic Environmental Impact Statement has shown that one or more of the criteria of Category 1 cannot be met, and therefore additional plant-specific review is required.

[3] The impact findings in this column are based on the definitions of three significance levels. Unless the significance level is identified as beneficial, the impact is adverse, or in the case of ''small,'' may be negligible. The definitions of significance follow:

SMALL—For the issue, environmental effects are not detectable or are so minor that they will neither destabilize nor noticeably alter any important attribute of the resource. For the purposes of assessing radiological impacts, the Commission has concluded that those impacts that do not exceed permissible levels in the Commission's regulations are considered small as the term is used in this table.

MODERATE—For the issue, environmental effects are sufficient to alter noticeably, but not to destabilize, important attributes of the resource.

LARGE—For the issue, environmental effects are clearly noticeable and are sufficient to destabilize important attributes of the resource.

For issues where probability is a key consideration (*i.e.*, accident consequences), probability was a factor in determining significance.

[4] This issue applies only to the in-scope portion of electric power transmission lines, which are defined as transmission lines that connect the nuclear power plant to the substation where electricity is fed into the regional power distribution system and transmission lines that supply power to the nuclear plant from the grid.

[5] NA (not applicable). The categorization and impact finding definitions do not apply to these issues.

[6] If, in the future, the Commission finds that, contrary to current indications, a consensus has been reached by appropriate Federal health agencies that there are adverse health effects from electromagnetic fields, the Commission will require applicants to submit plant-specific reviews of these health effects as part of their license renewal applications. Until such time, applicants for license renewal are not required to submit information on this issue.

[61 FR 66546, Dec. 18, 1996, as amended at 62 FR 59276, Nov. 3, 1997; 64 FR 48507, Sept. 3, 1999; 66 FR 39278, July 30, 2001; 78 FR 37317, June 20, 2013; 79 FR 56262, Sept. 19, 2014]

Subpart B [Reserved]

PART 52—LICENSES, CERTIFICATIONS, AND APPROVALS FOR NUCLEAR POWER PLANTS

GENERAL PROVISIONS

Sec.
52.0 Scope; applicability of 10 CFR Chapter I provisions.
52.1 Definitions.
52.2 Interpretations.
52.3 Written communications.
52.4 Deliberate misconduct.
52.5 Employee protection.
52.6 Completeness and accuracy of information.
52.7 Specific exemptions.
52.8 Combining licenses; elimination of repetition.
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52.11 Information collection requirements: OMB approval.

Subpart A—Early Site Permits

52.12 Scope of subpart.
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52.17 Contents of applications; technical information.
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AUTHORITY: Atomic Energy Act of 1954, secs. 103, 104, 147, 149, 161, 181, 182, 183, 185, 186, 189, 223, 234 (42 U.S.C. 2133, 2134, 2167, 2169, 2201, 2231, 2232, 2233, 2235, 2236, 2239, 2273, 2282); Energy Reorganization Act of 1974, secs. 201, 202, 206, 211 (42 U.S.C. 5841, 5842, 5846, 5851); 44 U.S.C. 3504 note.

SOURCE: 72 FR 49517, Aug. 28, 2007, unless otherwise noted.

GENERAL PROVISIONS

§52.0 Scope; applicability of 10 CFR Chapter I provisions.

(a) This part governs the issuance of early site permits, standard design certifications, combined licenses, standard design approvals, and manufacturing licenses for nuclear power facilities licensed under Section 103 of the Atomic Energy Act of 1954, as amended (68 Stat. 919), and Title II of the Energy Reorganization Act of 1974 (88 Stat. 1242). This part also gives notice to all persons who knowingly provide to any holder of or applicant for an approval, certification, permit, or license, or to a contractor, subcontractor, or consultant of any of them, components, equipment, materials, or other goods or services that relate to the activities of a holder of or applicant for an approval, certification, permit, or license, subject to this part, that they may be individually subject to NRC enforcement action for violation of the provisions in 10 CFR 52.4.

(b) Unless otherwise specifically provided for in this part, the regulations in 10 CFR Chapter I apply to a holder of or applicant for an approval, certification, permit, or license. A holder of or applicant for an approval, certification, permit, or license issued under this part shall comply with all requirements in 10 CFR Chapter I that are applicable. A license, approval, certification, or permit issued under this part is subject to all requirements in 10 CFR Chapter I which, by their terms, are applicable to early site permits, design certifications, combined licenses, design approvals, or manufacturing licenses.

§52.1 Definitions.

(a) As used in this part—

Combined license means a combined construction permit and operating license with conditions for a nuclear power facility issued under subpart C of this part.

Decommission means to remove a facility or site safely from service and reduce residual radioactivity to a level that permits—

(i) Release of the property for unrestricted use and termination of the license; or

(ii) Release of the property under restricted conditions and termination of the license.

Design characteristics are the actual features of a reactor or reactors. Design characteristics are specified in a standard design approval, a standard design certification, a combined license application, or a manufacturing license.

Design parameters are the postulated features of a reactor or reactors that could be built at a proposed site. Design parameters are specified in an early site permit.

Early site permit means a Commission approval, issued under subpart A of this part, for a site for one or more nuclear power facilities. An early site permit is a partial construction permit.

License means a license, including an early site permit, combined license or manufacturing license under this part or a renewed license issued by the Commission under this part or part 54 of this chapter.

Licensee means a person who is authorized to conduct activities under a license issued by the Commission.

Limited work authorization means the authorization provided by the Director of the Office of Nuclear Reactor Regulation under §50.10 of this chapter.

Major feature of the emergency plans means an aspect of those plans necessary to:

(i) Address in whole or part one or more of the 16 standards in 10 CFR 50.47(b); or

(ii) Describe the emergency planning zones as required in 10 CFR 50.33(g).

Manufacturing license means a license, issued under subpart F of this part, authorizing the manufacture of nuclear power reactors but not their construction, installation, or operation at the sites on which the reactors are to be operated.

Modular design means a nuclear power station that consists of two or more essentially identical nuclear reactors (modules) and each module is a separate nuclear reactor capable of being operated independent of the state of completion or operating condition of any other module co-located on the same site, even though the nuclear power station may have some shared or common systems.

Prototype plant means a nuclear power plant that is used to test new safety features, such as the testing required under 10 CFR 50.43(e). The prototype plant is similar to a first-of-a-kind or standard plant design in all features and size, but may include additional safety features to protect the public and the plant staff from the possible consequences of accidents during the testing period.

Site characteristics are the actual physical, environmental and demographic features of a site. Site characteristics are specified in an early site permit or in a final safety analysis report for a combined license.

Site parameters are the postulated physical, environmental and demographic features of an assumed site. Site parameters are specified in a standard design approval, standard design certification, or manufacturing license.

Standard design means a design which is sufficiently detailed and complete to support certification or approval in accordance with subpart B or E of this part, and which is usable for a multiple number of units or at a multiple number of sites without reopening or repeating the review.

Standard design approval or *design approval* means an NRC staff approval, issued under subpart E of this part, of a final standard design for a nuclear power reactor of the type described in 10 CFR 50.22. The approval may be for either the final design for the entire reactor facility or the final design of major portions thereof.

Standard design certification or *design certification* means a Commission approval, issued under subpart B of this part, of a final standard design for a nuclear power facility. This design may be referred to as a certified standard design.

(b) All other terms in this part have the meaning set out in 10 CFR 50.2, or Section 11 of the Atomic Energy Act, as applicable.

[72 FR 49517, Aug. 28, 2007, as amended at 72 FR 57446, Oct. 9, 2007; 79 FR 66604, Nov. 10, 2014; 84 FR 65645, Nov. 29, 2019; 84 FR 68781, Dec. 17, 2019]

§ 52.2 Interpretations.

Except as specifically authorized by the Commission in writing, no interpretation of the meaning of the regulations in this part by any officer or employee of the Commission other than a written interpretation by the General Counsel will be recognized to be binding upon the Commission.

§ 52.3 Written communications.

(a) *General requirements.* All correspondence, reports, applications, and other written communications from an applicant, licensee, or holder of a standard design approval to the Nuclear Regulatory Commission concerning the regulations in this part, individual license conditions, or the terms and conditions of an early site permit or standard design approval, must be sent either by mail addressed: ATTN: Document Control Desk, U.S. Nuclear Regulatory Commission, Washington, DC 20555–0001; by hand delivery to the NRC's offices at 11555 Rockville Pike, Rockville, Maryland, between the hours of 7:30 a.m. and 4:15 p.m. eastern time; or, where practicable, by electronic submission, for example, via Electronic Information Exchange, e-mail, or CD–ROM. Electronic submissions must be made in a manner that enables the NRC to receive, read, authenticate, distribute, and archive the submission, and process and retrieve it a single page at a time. Detailed guidance on making

electronic submissions can be obtained by visiting the NRC's Web site at *http://www.nrc.gov/site-help/e-submittals.html;* by e-mail to *MSHD.Resource@nrc.gov;* or by writing the Office of the Chief Information Officer, U.S. Nuclear Regulatory Commission, Washington, DC 20555–0001. The guidance discusses, among other topics, the formats the NRC can accept, the use of electronic signatures, and the treatment of nonpublic information. If the communication is on paper, the signed original must be sent. If a submission due date falls on a Saturday, Sunday, or Federal holiday, the next Federal working day becomes the official due date.

(b) *Distribution requirements.* Copies of all correspondence, reports, and other written communications concerning the regulations in this part or individual license conditions, or the terms and conditions of an early site permit or standard design approval, must be submitted to the persons listed in paragraph (b)(1) of this section (addresses for the NRC Regional Offices are listed in appendix D to part 20 of this chapter).

(1) *Applications for amendment of permits and licenses; reports; and other communications.* All written communications (including responses to: generic letters, bulletins, information notices, regulatory information summaries, inspection reports, and miscellaneous requests for additional information) that are required of holders of early site permits, standard design approvals, combined licenses, or manufacturing licenses issued under this part must be submitted as follows, except as otherwise specified in paragraphs (b)(2) through (b)(7) of this section: to the NRC's Document Control Desk (if on paper, the signed original), with a copy to the appropriate Regional Office, and a copy to the appropriate NRC Resident Inspector, if one has been assigned to the site of the facility or the place of manufacture of a reactor licensed under subpart F of this part.

(2) *Applications and amendments to applications.* Applications for early site permits, standard design approvals, combined licenses, manufacturing licenses and amendments to any of these types of applications must be submitted to the NRC's Document Control Desk, with a copy to the appropriate Regional Office, and a copy to the appropriate NRC Resident Inspector, if one has been assigned to the site of the facility or the place of manufacture of a reactor licensed under subpart F of this part, except as otherwise specified in paragraphs (b)(3) through (b)(7) of this section. If the application or amendment is on paper, the submission to the Document Control Desk must be the signed original.

(3) *Acceptance review application.* Written communications required for an application for determination of suitability for docketing must be submitted to the NRC's Document Control Desk, with a copy to the appropriate Regional Office. If the communication is on paper, the submission to the Document Control Desk must be the signed original.

(4) *Security plan and related submissions.* Written communications, as defined in paragraphs (b)(4)(i) through (iv) of this section, must be submitted to the NRC's Document Control Desk, with a copy to the appropriate Regional Office. If the communication is on paper, the submission to the Document Control Desk must be the signed original.

(i) Physical security plan under § 52.79 of this chapter;

(ii) Safeguards contingency plan under § 52.79 of this chapter;

(iii) Change to security plan, guard training and qualification plan, or safeguards contingency plan made without prior Commission approval under § 50.54(p) of this chapter;

(iv) Application for amendment of physical security plan, guard training and qualification plan, or safeguards contingency plan under § 50.90 of this chapter.

(5) *Emergency plan and related submissions.* Written communications as defined in paragraphs (b)(5)(i) through (iii) of this section must be submitted to the NRC's Document Control Desk, with a copy to the appropriate Regional Office, and a copy to the appropriate NRC Resident Inspector if one has been assigned to the site of the facility. If the communication is on paper, the submission to the Document Control Desk must be the signed original.

(i) Emergency plan under § 52.17(b) or § 52.79(a);

(ii) Change to an emergency plan under § 50.54(q) of this chapter;

(iii) Emergency implementing procedures under appendix E, Section V of part 50 of this chapter.

(6) *Updated FSAR.* An updated final safety analysis report (FSAR) or replacement pages under § 50.71(e) of this chapter, or the regulations in this part must be submitted to the NRC's Document Control Desk, with a copy to the appropriate Regional Office, and a copy to the appropriate NRC Resident Inspector if one has been assigned to the site of the facility or the place of manufacture of a reactor licensed under subpart F of this part. Paper copy submissions may be made using replacement pages; however, if a licensee chooses to use electronic submission, all subsequent updates or submissions must be performed electronically on a total replacement basis. If the communication is on paper, the submission to the Document Control Desk must be the signed original. If the communications are submitted electronically, see Guidance for Electronic Submissions to the Commission.

(7) *Quality assurance related submissions.* (i) A change to the safety analysis report quality assurance program description under § 50.54(a)(3) or § 50.55(f)(4) of this chapter, or a change to a licensee's NRC-accepted quality assurance topical report under § 50.54(a)(3) or § 50.55(f)(4) of this chapter, must be submitted to the NRC's Document Control Desk, with a copy to the appropriate Regional Office, and a copy to the appropriate NRC Resident Inspector if one has been assigned to the site of the facility. If the communication is on paper, the submission to the Document Control Desk must be the signed original.

(ii) A change to an NRC-accepted quality assurance topical report from nonlicensees (*i.e.*, architect/engineers, NSSS suppliers, fuel suppliers, constructors, etc.) must be submitted to the NRC's Document Control Desk. If the communication is on paper, the signed original must be sent.

(8) *Certification of permanent cessation of operations.* The licensee's certification of permanent cessation of operations under § 52.110(a)(1), must state the date on which operations have ceased or will cease, and must be submitted to the NRC's Document Control Desk. This submission must be under oath or affirmation.

(9) *Certification of permanent fuel removal.* The licensee's certification of permanent fuel removal under § 52.110(a)(1), must state the date on which the fuel was removed from the reactor vessel and the disposition of the fuel, and must be submitted to the NRC's Document Control Desk. This submission must be under oath or affirmation.

(c) *Form of communications.* All paper copies submitted to meet the requirements set forth in paragraph (b) of this section must be typewritten, printed or otherwise reproduced in permanent form on unglazed paper. Exceptions to these requirements imposed on paper submissions may be granted for the submission of micrographic, photographic, or similar forms.

(d) *Regulation governing submission.* Applicants, licensees, and holders of standard design approvals submitting correspondence, reports, and other written communications under the regulations of this part are requested but not required to cite whenever practical, in the upper right corner of the first page of the submission, the specific regulation or other basis requiring submission.

[72 FR 49517, Aug. 28, 2007, as amended at 74 FR 62682, Dec. 1, 2009; 80 FR 74980, Dec. 1, 2015]

§ 52.4 Deliberate misconduct.

(a) *Applicability.* This section applies to any:

(1) Licensee;

(2) Holder of a standard design approval;

(3) Applicant for a standard design certification;

(4) Applicant for a license or permit;

(5) Applicant for a standard design approval;

(6) Employee of a licensee;

(7) Employee of an applicant for a license, a standard design certification, or a standard design approval;

(8) Any contractor (including a supplier or consultant), subcontractor, or

employee of a contractor or subcontractor of any licensee; or

(9) Any contractor (including a supplier or consultant), subcontractor, or employee of a contractor or subcontractor of any applicant for a license, a standard design certification, or a standard design approval.

(b) *Definitions.* For purposes of this section:

Deliberate misconduct means an intentional act or omission that a person or entity knows:

(i) Would cause a licensee or an applicant for a license, standard design certification, or standard design approval to be in violation of any rule, regulation, or order; or any term, condition, or limitation, of any license, standard design certification, or standard design approval; or

(ii) Constitutes a violation of a requirement, procedure, instruction, contract, purchase order, or policy of a licensee, holder of a standard design approval, applicant for a license, standard design certification, or standard design approval, or contractor, or subcontractor.

(c) *Prohibition against deliberate misconduct.* Any person or entity subject to this section, who knowingly provides to any licensee, any applicant for a license, standard design certification or standard design approval, or a contractor, or subcontractor of a person or entity subject to this section, any components, equipment, materials, or other goods or services that relate to a licensee's or applicant's activities under this part, may not:

(1) Engage in deliberate misconduct that causes or would have caused, if not detected, a licensee, holder of a standard design approval, or applicant to be in violation of any rule, regulation, or order; or any term, condition, or limitation of any license issued by the Commission, any standard design approval, or standard design certification; or

(2) Deliberately submit to the NRC; a licensee, an applicant for a license, standard design certification or standard design approval; or a licensee's, standard design approval holder's, or applicant's contractor or subcontractor, information that the person submitting the information knows to be incomplete or inaccurate in some respect material to the NRC.

(d) A person or entity who violates paragraph (c)(1) or (c)(2) of this section may be subject to enforcement action in accordance with the procedures in 10 CFR part 2, subpart B.

§ 52.5 Employee protection.

(a) Discrimination by a Commission licensee, holder of a standard design approval, an applicant for a license, standard design certification, or standard design approval, a contractor or subcontractor of a Commission licensee, holder of a standard design approval, applicant for a license, standard design certification, or standard design approval, against an employee for engaging in certain protected activities is prohibited. Discrimination includes discharge and other actions that relate to compensation, terms, conditions, or privileges of employment. The protected activities are established in Section 211 of the Energy Reorganization Act of 1974, as amended, and in general are related to the administration or enforcement of a requirement imposed under the Atomic Energy Act or the Energy Reorganization Act.

(1) The protected activities include but are not limited to:

(i) Providing the Commission or his or her employer information about alleged violations of either of the statutes named in the introductory text of paragraph (a) of this section or possible violations of requirements imposed under either of those statutes;

(ii) Refusing to engage in any practice made unlawful under either of the statutes named in the introductory text of paragraph (a) of this section or under these requirements if the employee has identified the alleged illegality to the employer;

(iii) Requesting the Commission to institute action against his or her employer for the administration or enforcement of these requirements;

(iv) Testifying in any Commission proceeding, or before Congress, or at any Federal or State proceeding regarding any provision (or proposed provision) of either of the statutes named in the introductory text of paragraph (a) of this section; and

(v) Assisting or participating in, or is about to assist or participate in, these activities.

(2) These activities are protected even if no formal proceeding is actually initiated as a result of the employee assistance or participation.

(3) This section has no application to any employee alleging discrimination prohibited by this section who, acting without direction from his or her employer (or the employer's agent), deliberately causes a violation of any requirement of the Energy Reorganization Act of 1974, as amended, or the Atomic Energy Act of 1954, as amended.

(b) Any employee who believes that he or she has been discharged or otherwise discriminated against by any person for engaging in protected activities specified in paragraph (a)(1) of this section may seek a remedy for the discharge or discrimination through an administrative proceeding in the Department of Labor. The administrative proceeding must be initiated within 180 days after an alleged violation occurs. The employee may do this by filing a complaint alleging the violation with the Department of Labor, Employment Standards Administration, Wage and Hour Division. The Department of Labor may order reinstatement, back pay, and compensatory damages.

(c) A violation of paragraph (a), (e), or (f) of this section by a Commission licensee, a holder of a standard design approval, an applicant for a Commission license, standard design certification, or a standard design approval, or a contractor or subcontractor of a Commission licensee, holder of a standard design approval, or any applicant may be grounds for—

(1) Denial, revocation, or suspension of the license or standard design approval;

(2) Withdrawal or revocation of a proposed or final standard design certification;

(3) Imposition of a civil penalty on the licensee, holder of a standard design approval, or applicant (including an applicant for a standard design certification under this part following Commission adoption of final design certification rule) or a contractor or subcontractor of the licensee, holder of a standard design approval, or applicant.

(4) Other enforcement action.

(d) Actions taken by an employer, or others, which adversely affect an employee may be predicated upon nondiscriminatory grounds. The prohibition applies when the adverse action occurs because the employee has engaged in protected activities. An employee's engagement in protected activities does not automatically render him or her immune from discharge or discipline for legitimate reasons or from adverse action dictated by nonprohibited considerations.

(e)(1) Each licensee, each holder of a standard design approval, and each applicant for a license, standard design certification, or standard design approval, shall prominently post the revision of NRC Form 3, ''Notice to Employees,'' referenced in 10 CFR 19.11(e). This form must be posted at locations sufficient to permit employees protected by this section to observe a copy on the way to or from their place of work. Premises must be posted not later than thirty (30) days after an application is docketed and remain posted while the application is pending before the Commission, during the term of the license, standard design certification, or standard design approval under 10 CFR part 52, and for 30 days following license termination or the expiration or termination of the standard design certification or standard design approval under 10 CFR part 52.

(2) Copies of NRC Form 3 may be obtained by writing to the Regional Administrator of the appropriate U.S. Nuclear Regulatory Commission Regional Office listed in appendix D to part 20 of this chapter, via email to *Forms.Resource@nrc.gov*, or by visiting the NRC's online library at *http://www.nrc.gov/reading-rm/doc-collections/forms/*.

(f) No agreement affecting the compensation, terms, conditions, or privileges of employment, including an agreement to settle a complaint filed by an employee with the Department of Labor under Section 211 of the Energy Reorganization Act of 1974, as amended, may contain any provision which would prohibit, restrict, or otherwise discourage an employee from

participating in protected activity as defined in paragraph (a)(1) of this section including, but not limited to, providing information to the NRC or to his or her employer on potential violations or other matters within NRC's regulatory responsibilities.

(g) Part 19 of this chapter sets forth requirements and regulatory provisions applicable to licensees, holders of a standard design approval, applicants for a license, standard design certification, or standard design approval, and contractors or subcontractors of a Commission licensee, or holder of a standard design approval, and are in addition to the requirements in this section.

[72 FR 49517, Aug. 28, 2007, as amended at 72 FR 63974, Nov. 14, 2007; 73 FR 30458, May 28, 2008; 79 FR 66604, Nov. 10, 2014]

§ 52.6 Completeness and accuracy of information.

(a) Information provided to the Commission by a licensee (including an early site permit holder, a combined license holder, and a manufacturing license holder), a holder of a standard design approval under this part, and an applicant for a license or an applicant for a standard design certification or a standard design approval under this part, and information required by statute or by the Commission's regulations, orders, license conditions, or terms and conditions of a standard design approval to be maintained by the licensee, the holder of a standard design approval under this part, the applicant for a standard design certification under this part following Commission adoption of a final design certification rule, and an applicant for a license, a standard design certification, or a standard design approval under this part shall be complete and accurate in all material respects.

(b) Each applicant or licensee, each holder of a standard design approval under this part, and each applicant for a standard design certification under this part following Commission adoption of a final design certification regulation, shall notify the Commission of information identified by the applicant or the licensee as having for the regulated activity a significant implication for public health and safety or common defense and security. An applicant, licensee, or holder violates this paragraph only if the applicant, licensee, or holder fails to notify the Commission of information that the applicant, licensee, or holder has been identified as having a significant implication for public health and safety or common defense and security. Notification shall be provided to the Administrator of the appropriate Regional Office within 2 working days of identifying the information. This requirement is not applicable to information which is already required to be provided to the Commission by other reporting or updating requirements.

§ 52.7 Specific exemptions.

The Commission may, upon application by any interested person or upon its own initiative, grant exemptions from the requirements of the regulations of this part. The Commission's consideration will be governed by § 50.12 of this chapter, unless other criteria are provided for in this part, in which case the Commission's consideration will be governed by the criteria in this part. Only if those criteria are not met will the Commission's consideration be governed by § 50.12 of this chapter. The Commission's consideration of requests for exemptions from requirements of the regulations of other parts in this chapter, which are applicable by virtue of this part, shall be governed by the exemption requirements of those parts.

§ 52.8 Combining licenses; elimination of repetition.

(a) An applicant for a license under this part may combine in its application several applications for different kinds of licenses under the regulations of this chapter.

(b) An applicant may incorporate by reference in its application information contained in previous applications, statements or reports filed with the Commission, provided, however, that such references are clear and specific.

(c) The Commission may combine in a single license the activities of an applicant which would otherwise be licensed separately.

§ 52.9 Jurisdictional limits.

No permit, license, standard design approval, or standard design certification under this part shall be deemed to have been issued for activities which are not under or within the jurisdiction of the United States.

§ 52.10 Attacks and destructive acts.

Neither an applicant for a license to manufacture, construct, and operate a utilization facility under this part, nor for an amendment to this license, or an applicant for an early site permit, a standard design certification, or standard design approval under this part, or for an amendment to the early site permit, standard design certification, or standard design approval, is required to provide for design features or other measures for the specific purpose of protection against the effects of—

(a) Attacks and destructive acts, including sabotage, directed against the facility by an enemy of the United States, whether a foreign government or other person; or

(b) Use or deployment of weapons incident to U.S. defense activities.

§ 52.11 Information collection requirements: OMB approval.

(a) The Nuclear Regulatory Commission has submitted the information collection requirements contained in this part to the Office of Management and Budget (OMB) for approval as required by the Paperwork Reduction Act (44 U.S.C. 3501 *et seq.*). The NRC may not conduct or sponsor, and a person is not required to respond to, a collection of information unless it displays a currently valid OMB control number. OMB has approved the information collection requirements contained in this part under Control Number 3150–0151.

(b) The approved information collection requirements contained in this part appear in §§ 52.7, 52.15, 52.16, 52.17, 52.29, 52.35, 52.39, 52.45, 52.46, 52.47, 52.57, 52.63, 52.75, 52.77, 52.79, 52.80, 52.93, 52.99, 52.110, 52.135, 52.136, 52.137, 52.155, 52.156, 52.157, 52.158, 52.171, 52.177, and appendices A, B, C, D, E, F, and N of this part.

[72 FR 49517, Aug. 28, 2007, as amended at 79 FR 61983, Nov. 14, 2014; 84 FR 23452, May 22, 2019]

Subpart A—Early Site Permits

§ 52.12 Scope of subpart.

This subpart sets out the requirements and procedures applicable to Commission issuance of an early site permit for approval of a site for one or more nuclear power facilities separate from the filing of an application for a construction permit or combined license for the facility.

§ 52.13 Relationship to other subparts.

This subpart applies when any person who may apply for a construction permit under 10 CFR part 50, or for a combined license under this part seeks an early site permit from the Commission separately from an application for a construction permit or a combined license.

§ 52.15 Filing of applications.

(a) Any person who may apply for a construction permit under 10 CFR part 50, or for a combined license under this part, may file an application for an early site permit with the Director, Office of Nuclear Reactor Regulation. An application for an early site permit may be filed notwithstanding the fact that an application for a construction permit or a combined license has not been filed in connection with the site for which a permit is sought.

(b) The application must comply with the applicable filing requirements of §§ 52.3 and 50.30 of this chapter.

(c) The fees associated with the filing and review of an application for the initial issuance or renewal of an early site permit are set forth in 10 CFR part 170.

[72 FR 49517, Aug. 28, 2007, as amended at 84 FR 65645, Nov. 29, 2019]

§ 52.16 Contents of applications; general information.

The application must contain all of the information required by 10 CFR 50.33(a) through (d) and (j) of this chapter.

§ 52.17 Contents of applications; technical information.

(a) For applications submitted before September 27, 2007, the rule provisions in effect at the date of docketing apply unless otherwise requested by the applicant in writing. The application must contain:

(1) A site safety analysis report. The site safety analysis report shall include the following:

(i) The specific number, type, and thermal power level of the facilities, or range of possible facilities, for which the site may be used;

(ii) The anticipated maximum levels of radiological and thermal effluents each facility will produce;

(iii) The type of cooling systems, intakes, and outflows that may be associated with each facility;

(iv) The boundaries of the site;

(v) The proposed general location of each facility on the site;

(vi) The seismic, meteorological, hydrologic, and geologic characteristics of the proposed site with appropriate consideration of the most severe of the natural phenomena that have been historically reported for the site and surrounding area and with sufficient margin for the limited accuracy, quantity, and period of time in which the historical data have been accumulated;

(vii) The location and description of any nearby industrial, military, or transportation facilities and routes;

(viii) The existing and projected future population profile of the area surrounding the site;

(ix) A description and safety assessment of the site on which a facility is to be located. The assessment must contain an analysis and evaluation of the major structures, systems, and components of the facility that bear significantly on the acceptability of the site under the radiological consequence evaluation factors identified in paragraphs (a)(1)(ix)(A) and (a)(1)(ix)(B) of this section. In performing this assessment, an applicant shall assume a fission product release[1] from the core into the containment assuming that the facility is operated at the ultimate power level contemplated. The applicant shall perform an evaluation and analysis of the postulated fission product release, using the expected demonstrable containment leak rate and any fission product cleanup systems intended to mitigate the consequences of the accidents, together with applicable site characteristics, including site meteorology, to evaluate the offsite radiological consequences. Site characteristics must comply with part 100 of this chapter. The evaluation must determine that:

(A) An individual located at any point on the boundary of the exclusion area for any 2 hour period following the onset of the postulated fission product release, would not receive a radiation dose in excess of 25 rem[2] total effective dose equivalent (TEDE).

(B) An individual located at any point on the outer boundary of the low population zone, who is exposed to the radioactive cloud resulting from the postulated fission product release (during the entire period of its passage) would not receive a radiation dose in excess of 25 rem TEDE;

(x) Information demonstrating that site characteristics are such that adequate security plans and measures can be developed;

(xi) For applications submitted after September 27, 2007, a description of the quality assurance program applied to

[1] The fission product release assumed for this evaluation should be based upon a major accident, hypothesized for purposes of site analysis or postulated from considerations of possible accidental events. Such accidents have generally been assumed to result in substantial meltdown of the core with subsequent release into the containment of appreciable quantities of fission products.

[2] A whole body dose of 25 rem has been stated to correspond numerically to the once in a lifetime accidental or emergency dose for radiation workers which, according to NCRP recommendations at the time could be disregarded in the determination of their radiation exposure status (see NBS Handbook 69 dated June 5, 1959). However, its use is not intended to imply that this number constitutes an acceptable limit for an emergency dose to the public under accident conditions. Rather, this dose value has been set forth in this section as a reference value, which can be used in the evaluation of plant design features with respect to postulated reactor accidents, to assure that these designs provide assurance of low risk of public exposure to radiation, in the event of an accidents.

site-related activities for the future design, fabrication, construction, and testing of the structures, systems, and components of a facility or facilities that may be constructed on the site. Appendix B to 10 CFR part 50 sets forth the requirements for quality assurance programs for nuclear power plants. The description of the quality assurance program for a nuclear power plant site shall include a discussion of how the applicable requirements of appendix B to part 50 of this chapter will be satisfied; and

(xii) An evaluation of the site against applicable sections of the Standard Review Plan (SRP) revision in effect 6 months before the docket date of the application. The evaluation required by this section shall include an identification and description of all differences in analytical techniques and procedural measures proposed for a site and those corresponding techniques and measures given in the SRP acceptance criteria. Where such a difference exists, the evaluation shall discuss how the proposed alternative provides an acceptable method of complying with the Commission's regulations, or portions thereof, that underlie the corresponding SRP acceptance criteria. The SRP is not a substitute for the regulations, and compliance is not a requirement.

(2) A complete environmental report as required by 10 CFR 51.50(b).

(b)(1) The site safety analysis report must identify physical characteristics of the proposed site, such as egress limitations from the area surrounding the site, that could pose a significant impediment to the development of emergency plans. If physical characteristics are identified that could pose a significant impediment to the development of emergency plans, the application must identify measures that would, when implemented, mitigate or eliminate the significant impediment.

(2) The site safety analysis report may also:

(i) Propose major features of the emergency plans, in accordance with the pertinent standards of § 50.47 of this chapter and the requirements of appendix E to part 50 of this chapter, such as the exact size and configuration of the emergency planning zones, for review and approval by the NRC, in consultation with the Federal Emergency Management Agency (FEMA) in the absence of complete and integrated emergency plans; or

(ii) Propose complete and integrated emergency plans for review and approval by the NRC, in consultation with FEMA, in accordance with the applicable standards of § 50.47 of this chapter and the requirements of appendix E to part 50 of this chapter. To the extent approval of emergency plans is sought, the application must contain the information required by § 50.33(g) and (j) of this chapter.

(3) Emergency plans submitted under paragraph (b)(2)(ii) of this section must include the proposed inspections, tests, and analyses that the holder of a combined license referencing the early site permit shall perform, and the acceptance criteria that are necessary and sufficient to provide reasonable assurance that, if the inspections, tests, and analyses are performed and the acceptance criteria met, the facility has been constructed and will be operated in conformity with the emergency plans, the provisions of the Act, and the Commission's rules and regulations. Major features of an emergency plan submitted under paragraph (b)(2)(i) of this section may include proposed inspections, tests, analyses, and acceptance criteria.

(4) Under paragraphs (b)(1) and (b)(2)(i) of this section, the site safety analysis report must include a description of contacts and arrangements made with Federal, State, and local governmental agencies with emergency planning responsibilities. The site safety analysis report must contain any certifications that have been obtained. If these certifications cannot be obtained, the site safety analysis report must contain information, including a utility plan, sufficient to show that the proposed plans provide reasonable assurance that adequate protective measures can and will be taken in the event of a radiological emergency at the site. Under the option set forth in paragraph (b)(2)(ii) of this section, the applicant shall make good faith efforts to obtain from the same governmental agencies certifications that:

(i) The proposed emergency plans are practicable;

(ii) These agencies are committed to participating in any further development of the plans, including any required field demonstrations, and

(iii) That these agencies are committed to executing their responsibilities under the plans in the event of an emergency.

(c) An applicant may request that a limited work authorization under 10 CFR 50.10 be issued in conjunction with the early site permit. The application must include the information otherwise required by 10 CFR 50.10(d)(3). Applications submitted before, and pending as of November 8, 2007, must include the information required by § 52.17(c) effective on the date of docketing.

(d) Each applicant for an early site permit under this part shall protect Safeguards Information against unauthorized disclosure in accordance with the requirements in §§ 73.21 and 73.22 of this chapter, as applicable.

[72 FR 49517, Aug. 28, 2007, as amended at 72 FR 57447, Oct. 9, 2007; 73 FR 63571, Oct. 24, 2008; 78 FR 34249, June 7, 2013; 78 FR 75450, Dec. 12, 2013]

§ 52.18 Standards for review of applications.

Applications filed under this subpart will be reviewed according to the applicable standards set out in 10 CFR part 50 and its appendices and 10 CFR part 100. In addition, the Commission shall prepare an environmental impact statement during review of the application, in accordance with the applicable provisions of 10 CFR part 51. The Commission shall determine, after consultation with FEMA, whether the information required of the applicant by § 52.17(b)(1) shows that there is not significant impediment to the development of emergen cy plans that cannot be mitigated or eliminated by measures proposed by the applicant, whether any major features of emergency plans submitted by the applicant under § 52.17(b)(2)(i) are acceptable in accordance with the applicable standards of § 50.47 of this chapter and the requirements of appendix E to part 50 of this chapter, and whether any emergency plans submitted by the applicant under § 52.17(b)(2)(ii) provide reasonable assurance that adequate protective measures can and will be taken in the event of a radiological emergency.

[72 FR 49517, Aug. 28, 2007, as amended at 78 FR 34249, June 7, 2013; 78 FR 75450, Dec. 12, 2013]

§ 52.21 Administrative review of applications; hearings.

An early site permit is subject to all procedural requirements in 10 CFR part 2, including the requirements for docketing in § 2.101(a)(1) through (4) of this chapter, and the requirements for issuance of a notice of hearing in §§ 2.104(a) and (d) of this chapter, provided that the designated sections may not be construed to require that the environmental report, or draft or final environmental impact statement include an assessment of the benefits of construction and operation of the reactor or reactors, or an analysis of alternative energy sources. The presiding officer in an early site permit hearing shall not admit contentions proffered by any party concerning an assessment of the benefits of construction and operation of the reactor or reactors, or an analysis of alternative energy sources if those issues were not addressed by the applicant in the early site permit application. All hearings conducted on applications for early site permits filed under this part are governed by the procedures contained in subparts C, G, L, and N of 10 CFR part 2, as applicable.

§ 52.23 Referral to the Advisory Committee on Reactor Safeguards (ACRS).

The Commission shall refer a copy of the application for an early site permit to the ACRS. The ACRS shall report on those portions of the application which concern safety.

§ 52.24 Issuance of early site permit.

(a) After conducting a hearing under § 52.21 and receiving the report to be submitted by the ACRS under § 52.23, the Commission may issue an early site permit, in the form the Commission deems appropriate, if the Commission finds that:

(1) An application for an early site permit meets the applicable standards

and requirements of the Act and the Commission's regulations;

(2) Notifications, if any, to other agencies or bodies have been duly made;

(3) There is reasonable assurance that the site is in conformity with the provisions of the Act, and the Commission's regulations;

(4) The applicant is technically qualified to engage in any activities authorized;

(5) The proposed inspections, tests, analyses and acceptance criteria, including any on emergency planning, are necessary and sufficient, within the scope of the early site permit, to provide reasonable assurance that the facility has been constructed and will be operated in conformity with the license, the provisions of the Act, and the Commission's regulations;

(6) Issuance of the permit will not be inimical to the common defense and security or to the health and safety of the public;

(7) Any significant adverse environmental impact resulting from activities requested under § 52.17(c) can be redressed; and

(8) The findings required by subpart A of 10 CFR part 51 have been made.

(b) The early site permit must specify the site characteristics, design parameters, and terms and conditions of the early site permit the Commission deems appropriate. Before issuance of either a construction permit or combined license referencing an early site permit, the Commission shall find that any relevant terms and conditions of the early site permit have been met. Any terms or conditions of the early site permit that could not be met by the time of issuance of the construction permit or combined license, must be set forth as terms or conditions of the construction permit or combined license.

(c) The early site permit shall specify those 10 CFR 50.10 activities requested under § 52.17(c) that the permit holder is authorized to perform.

[72 FR 49517, Aug. 28, 2007, as amended at 72 FR 57447, Oct. 9, 2007]

§ 52.25 Extent of activities permitted.

If the activities authorized by § 52.24(c) are performed and the site is not referenced in an application for a construction permit or a combined license issued under subpart C of this part while the permit remains valid, then the early site permit remains in effect solely for the purpose of site redress, and the holder of the permit shall redress the site in accordance with the terms of the site redress plan required by § 52.17(c). If, before redress is complete, a use not envisaged in the redress plan is found for the site or parts thereof, the holder of the permit shall carry out the redress plan to the greatest extent possible consistent with the alternate use.

§ 52.26 Duration of permit.

(a) Except as provided in paragraph (b) of this section, an early site permit issued under this subpart may be valid for not less than 10, nor more than 20 years from the date of issuance.

(b) An early site permit continues to be valid beyond the date of expiration in any proceeding on a construction permit application or a combined license application that references the early site permit and is docketed before the date of expiration of the early site permit, or, if a timely application for renewal of the permit has been docketed, before the Commission has determined whether to renew the permit.

(c) An applicant for a construction permit or combined license may, at its own risk, reference in its application a site for which an early site permit application has been docketed but not granted.

(d) Upon issuance of a construction permit or combined license, a referenced early site permit is subsumed, to the extent referenced, into the construction permit or combined license.

[72 FR 49517, Aug. 28, 2007. Redesignated at 72 FR 57447, Oct. 9, 2007]

§ 52.27 Limited work authorization after issuance of early site permit.

A holder of an early site permit may request a limited work authorization in accordance with § 50.10 of this chapter.

[72 FR 57447, Oct. 9, 2007]

§ 52.28 Transfer of early site permit.

An application to transfer an early site permit will be processed under 10 CFR 50.80.

§ 52.29 Application for renewal.

(a) Not less than 12, nor more than 36 months before the expiration date stated in the early site permit, or any later renewal period, the permit holder may apply for a renewal of the permit. An application for renewal must contain all information necessary to bring up to date the information and data contained in the previous application.

(b) Any person whose interests may be affected by renewal of the permit may request a hearing on the application for renewal. The request for a hearing must comply with 10 CFR 2.309. If a hearing is granted, notice of the hearing will be published in accordance with 10 CFR 2.309.

(c) An early site permit, either original or renewed, for which a timely application for renewal has been filed, remains in effect until the Commission has determined whether to renew the permit. If the permit is not renewed, it continues to be valid in certain proceedings in accordance with the provisions of § 52.26(b).

(d) The Commission shall refer a copy of the application for renewal to the ACRS. The ACRS shall report on those portions of the application which concern safety and shall apply the criteria set forth in § 52.31.

[72 FR 49517, Aug. 28, 2007, as amended at 85 FR 65663, Oct. 16, 2020]

§ 52.31 Criteria for renewal.

(a) The Commission shall grant the renewal if it determines that:

(1) The site complies with the Act, the Commission's regulations, and orders applicable and in effect at the time the site permit was originally issued; and

(2) Any new requirements the Commission may wish to impose are:

(i) Necessary for adequate protection to public health and safety or common defense and security;

(ii) Necessary for compliance with the Commission's regulations, and orders applicable and in effect at the time the site permit was originally issued; or

(iii) A substantial increase in overall protection of the public health and safety or the common defense and security to be derived from the new requirements, and the direct and indirect costs of implementation of those requirements are justified in view of this increased protection.

(b) A denial of renewal for failure to comply with the provisions of § 52.31(a) does not bar the permit holder or another applicant from filing a new application for the site which proposes changes to the site or the way that it is used to correct the deficiencies cited in the denial of the renewal.

§ 52.33 Duration of renewal.

Each renewal of an early site permit may be for not less than 10, nor more than 20 years, plus any remaining years on the early site permit then in effect before renewal.

§ 52.35 Use of site for other purposes.

A site for which an early site permit has been issued under this subpart may be used for purposes other than those described in the permit, including the location of other types of energy facilities. The permit holder shall inform the Director, Office of Nuclear Reactor Regulation (Director), of any significant uses for the site which have not been approved in the early site permit. The information about the activities must be given to the Director at least 30 days in advance of any actual construction or site modification for the activities. The information provided could be the basis for imposing new requirements on the permit, in accordance with the provisions of § 52.39. If the permit holder informs the Director that the holder no longer intends to use the site for a nuclear power plant, the Director may terminate the permit.

[73 FR 5724, Jan. 31, 2008, as amended at 84 FR 65645, Nov. 29, 2019; 84 FR 68781, Dec. 17, 2019]

§ 52.39 Finality of early site permit determinations.

(a) *Commission finality*. (1) Notwithstanding any provision in 10 CFR 50.109, while an early site permit is in effect

under §§ 52.26 or 52.33, the Commission may not change or impose new site characteristics, design parameters, or terms and conditions, including emergency planning requirements, on the early site permit unless the Commission:

(i) Determines that a modification is necessary to bring the permit or the site into compliance with the Commission's regulations and orders applicable and in effect at the time the permit was issued;

(ii) Determines the modification is necessary to assure adequate protection of the public health and safety or the common defense and security;

(iii) Determines that a modification is necessary based on an update under paragraph (b) of this section; or

(iv) Issues a variance requested under paragraph (d) of this section.

(2) In making the findings required for issuance of a construction permit or combined license, or the findings required by § 52.103, or in any enforcement hearing other than one initiated by the Commission under paragraph (a)(1) of this section, if the application for the construction permit or combined license references an early site permit, the Commission shall treat as resolved those matters resolved in the proceeding on the application for issuance or renewal of the early site permit, except as provided for in paragraphs (b), (c), and (d) of this section.

(i) If the early site permit approved an emergency plan (or major features thereof) that is in use by a licensee of a nuclear power plant, the Commission shall treat as resolved changes to the early site permit emergency plan (or major features thereof) that are identical to changes made to the licensee's emergency plans in compliance with § 50.54(q) of this chapter occurring after issuance of the early site permit.

(ii) If the early site permit approved an emergency plan (or major features thereof) that is not in use by a licensee of a nuclear power plant, the Commission shall treat as resolved changes that are equivalent to those that could be made under § 50.54(q) of this chapter without prior NRC approval had the emergency plan been in use by a licensee.

(b) *Updating of early site permit-emergency preparedness.* An applicant for a construction permit, operating license, or combined license who has filed an application referencing an early site permit issued under this subpart shall update the emergency preparedness information that was provided under § 52.17(b), and discuss whether the updated information materially changes the bases for compliance with applicable NRC requirements.

(c) *Hearings and petitions.* (1) In any proceeding for the issuance of a construction permit, operating license, or combined license referencing an early site permit, contentions on the following matters may be litigated in the same manner as other issues material to the proceeding:

(i) The nuclear power reactor proposed to be built does not fit within one or more of the site characteristics or design parameters included in the early site permit;

(ii) One or more of the terms and conditions of the early site permit have not been met;

(iii) A variance requested under paragraph (d) of this section is unwarranted or should be modified;

(iv) New or additional information is provided in the application that substantially alters the bases for a previous NRC conclusion or constitutes a sufficient basis for the Commission to modify or impose new terms and conditions related to emergency preparedness; or

(v) Any significant environmental issue that was not resolved in the early site permit proceeding, or any issue involving the impacts of construction and operation of the facility that was resolved in the early site permit proceeding for which significant new information has been identified.

(2) Any person may file a petition requesting that the site characteristics, design parameters, or terms and conditions of the early site permit should be modified, or that the permit should be suspended or revoked. The petition will be considered in accordance with § 2.206 of this chapter. Before construction commences, the Commission shall consider the petition and determine whether any immediate action is required. If the petition is granted, an

appropriate order will be issued. Construction under the construction permit or combined license will not be affected by the granting of the petition unless the order is made immediately effective. Any change required by the Commission in response to the petition must meet the requirements of paragraph (a)(1) of this section.

(d) *Variances.* An applicant for a construction permit, operating license, or combined license referencing an early site permit may include in its application a request for a variance from one or more site characteristics, design parameters, or terms and conditions of the early site permit, or from the site safety analysis report. In determining whether to grant the variance, the Commission shall apply the same technically relevant criteria applicable to the application for the original or renewed early site permit. Once a construction permit or combined license referencing an early site permit is issued, variances from the early site permit will not be granted for that construction permit or combined license.

(e) *Early site permit amendment.* The holder of an early site permit may not make changes to the early site permit, including the site safety analysis report, without prior Commission approval. The request for a change to the early site permit must be in the form of an application for a license amendment, and must meet the requirements of 10 CFR 50.90 and 50.92.

(f) *Information requests.* Except for information requests seeking to verify compliance with the current licensing basis of the early site permit, information requests to the holder of an early site permit must be evaluated before issuance to ensure that the burden to be imposed on respondents is justified in view of the potential safety significance of the issue to be addressed in the requested information. Each evaluation performed by the NRC staff must be in accordance with 10 CFR 50.54(f), and must be approved by the Executive Director for Operations or his or her designee before issuance of the request.

[72 FR 49517, Aug. 28, 2007, as amended at 85 FR 65663, Oct. 16, 2020]

Subpart B—Standard Design Certifications

§ 52.41 Scope of subpart.

(a) This subpart sets forth the requirements and procedures applicable to Commission issuance of rules granting standard design certifications for nuclear power facilities separate from the filing of an application for a construction permit or combined license for such a facility.

(b)(1) Any person may seek a standard design certification for an essentially complete nuclear power plant design which is an evolutionary change from light water reactor designs of plants which have been licensed and in commercial operation before April 18, 1989.

(2) Any person may also seek a standard design certification for a nuclear power plant design which differs significantly from the light water reactor designs described in paragraph (b)(1) of this section or uses simplified, inherent, passive, or other innovative means to accomplish its safety functions.

§ 52.43 Relationship to other subparts.

(a) This subpart applies to a person that requests a standard design certification from the NRC separately from an application for a combined license filed under subpart C of this part for a nuclear power facility. An applicant for a combined license may reference a standard design certification.

(b) Subpart E of this part governs the NRC staff review and approval of a standard design. Subpart E may be used independently of the provisions in this subpart.

(c) Subpart F of this part governs the issuance of licenses to manufacture nuclear power reactors to be installed and operated at sites not identified in the manufacturing license application. Subpart F may be used independently of the provisions in this subpart. However, an applicant for a manufacturing license under subpart F may reference a design certification.

[72 FR 49517, Aug. 28, 2007, as amended at 84 FR 63568, Nov. 18, 2019]

§ 52.45 Filing of applications.

(a) An application for design certification may be filed notwithstanding the fact that an application for a construction permit, combined license, or manufacturing license for such a facility has not been filed.

(b) The application must comply with the applicable filing requirements of §§ 52.3 and §§ 2.811 through 2.819 of this chapter.

(c) The fees associated with the review of an application for the initial issuance or renewal of a standard design certification are set forth in 10 CFR part 170.

§ 52.46 Contents of applications; general information.

The application must contain all of the information required by 10 CFR 50.33(a) through (c) and (j).

§ 52.47 Contents of applications; technical information.

The application must contain a level of design information sufficient to enable the Commission to judge the applicant's proposed means of assuring that construction conforms to the design and to reach a final conclusion on all safety questions associated with the design before the certification is granted. The information submitted for a design certification must include performance requirements and design information sufficiently detailed to permit the preparation of acceptance and inspection requirements by the NRC, and procurement specifications and construction and installation specifications by an applicant. The Commission will require, before design certification, that information normally contained in certain procurement specifications and construction and installation specifications be completed and available for audit if the information is necessary for the Commission to make its safety determination.

(a) The application must contain a final safety analysis report (FSAR) that describes the facility, presents the design bases and the limits on its operation, and presents a safety analysis of the structures, systems, and components and of the facility as a whole, and must include the following information:

(1) The site parameters postulated for the design, and an analysis and evaluation of the design in terms of those site parameters;

(2) A description and analysis of the structures, systems, and components (SSCs) of the facility, with emphasis upon performance requirements, the bases, with technical justification therefor, upon which these requirements have been established, and the evaluations required to show that safety functions will be accomplished. It is expected that the standard plant will reflect through its design, construction, and operation an extremely low probability for accidents that could result in the release of significant quantities of radioactive fission products. The description shall be sufficient to permit understanding of the system designs and their relationship to the safety evaluations. Such items as the reactor core, reactor coolant system, instrumentation and control systems, electrical systems, containment system, other engineered safety features, auxiliary and emergency systems, power conversion systems, radioactive waste handling systems, and fuel handling systems shall be discussed insofar as they are pertinent. The following power reactor design characteristics will be taken into consideration by the Commission:

(i) Intended use of the reactor including the proposed maximum power level and the nature and inventory of contained radioactive materials;

(ii) The extent to which generally accepted engineering standards are applied to the design of the reactor;

(iii) The extent to which the reactor incorporates unique, unusual or enhanced safety features having a significant bearing on the probability or consequences of accidental release of radioactive materials; and

(iv) The safety features that are to be engineered into the facility and those barriers that must be breached as a result of an accident before a release of radioactive material to the environment can occur. Special attention must be directed to plant design features intended to mitigate the radiological consequences of accidents. In

performing this assessment, an applicant shall assume a fission product release[3] from the core into the containment assuming that the facility is operated at the ultimate power level contemplated. The applicant shall perform an evaluation and analysis of the postulated fission product release, using the expected demonstrable containment leak rate and any fission product cleanup systems intended to mitigate the consequences of the accidents, together with applicable postulated site parameters, including site meteorology, to evaluate the offsite radiological consequences. The evaluation must determine that:

(A) An individual located at any point on the boundary of the exclusion area for any 2-hour period following the onset of the postulated fission product release, would not receive a radiation dose in excess of 25 rem[4] total effective dose equivalent (TEDE);

(B) An individual located at any point on the outer boundary of the low population zone, who is exposed to the radioactive cloud resulting from the postulated fission product release (during the entire period of its passage) would not receive a radiation dose in excess of 25 rem TEDE;

(3) The design of the facility including:

(i) The principal design criteria for the facility. Appendix A to 10 CFR part 50, general design criteria (GDC), establishes minimum requirements for the principal design criteria for water-cooled nuclear power plants similar in design and location to plants for which construction permits have previously been issued by the Commission and provides guidance to applicants in establishing principal design criteria for other types of nuclear power units;

(ii) The design bases and the relation of the design bases to the principal design criteria;

(iii) Information relative to materials of construction, general arrangement, and approximate dimensions, sufficient to provide reasonable assurance that the design will conform to the design bases with an adequate margin for safety;

(4) An analysis and evaluation of the design and performance of structures, systems, and components with the objective of assessing the risk to public health and safety resulting from operation of the facility and including determination of the margins of safety during normal operations and transient conditions anticipated during the life of the facility, and the adequacy of structures, systems, and components provided for the prevention of accidents and the mitigation of the consequences of accidents. Analysis and evaluation of emergency core cooling system (ECCS) cooling performance and the need for high-point vents following postulated loss-of-coolant accidents shall be performed in accordance with the requirements of §§ 50.46 and 50.46a of this chapter;

(5) The kinds and quantities of radioactive materials expected to be produced in the operation and the means for controlling and limiting radioactive effluents and radiation exposures within the limits set forth in part 20 of this chapter;

(6) The information required by § 20.1406 of this chapter;

(7) The technical qualifications of the applicant to engage in the proposed activities in accordance with the regulations in this chapter;

(8) The information necessary to demonstrate compliance with any technically relevant portions of the Three

[3] The fission product release assumed for this evaluation should be based upon a major accident, hypothesized for purposes of site analysis or postulated from considerations of possible accidental events. These accidents have generally been assumed to result in substantial meltdown of the core with subsequent release into the containment of appreciable quantities of fission products.

[4] A whole body dose of 25 rem has been stated to correspond numerically to the once in a lifetime accidental or emergency dose for radiation workers which, according to NCRP recommendations at the time could be disregarded in the determination of their radiation exposure status (see NBS Handbook 69 dated June 5, 1959). However, its use is not intended to imply that this number constitutes an acceptable limit for an emergency dose to the public under accident conditions. This dose value has been set forth in this section as a reference value, which can be used in the evaluation of plant design features with respect to postulated reactor accidents, to assure that these designs provide assurance of low risk of public exposure to radiation, in the event of an accident.

Mile Island requirements set forth in 10 CFR 50.34(f), except paragraphs (f)(1)(xii), (f)(2)(ix), and (f)(3)(v);

(9) For applications for light-water-cooled nuclear power plants, an evaluation of the standard plant design against the Standard Review Plan (SRP) revision in effect 6 months before the docket date of the application. The evaluation required by this section shall include an identification and description of all differences in design features, analytical techniques, and procedural measures proposed for the design and those corresponding features, techniques, and measures given in the SRP acceptance criteria. Where a difference exists, the evaluation shall discuss how the proposed alternative provides an acceptable method of complying with the Commission's regulations, or portions thereof, that underlie the corresponding SRP acceptance criteria. The SRP is not a substitute for the regulations, and compliance is not a requirement.

(10) The information with respect to the design of equipment to maintain control over radioactive materials in gaseous and liquid effluents produced during normal reactor operations described in 10 CFR 50.34a(e);

(11) Proposed technical specifications prepared in accordance with the requirements of §§ 50.36 and 50.36a of this chapter;

(12) An analysis and description of the equipment and systems for combustible gas control as required by 10 CFR 50.44;

(13) The list of electric equipment important to safety that is required by 10 CFR 50.49(d);

(14) A description of protection provided against pressurized thermal shock events, including projected values of the reference temperature for reactor vessel beltline materials as defined in 10 CFR 50.60 and 50.61;

(15) Information demonstrating how the applicant will comply with requirements for reduction of risk from anticipated transients without scram events in § 50.62;

(16) A coping analysis, and any design features necessary to address station blackout, as required by 10 CFR 50.63;

(17) Information demonstrating how the applicant will comply with requirements for criticality accidents in § 50.68(b)(2)–(b)(4);

(18) A description and analysis of the fire protection design features for the standard plant necessary to comply with 10 CFR part 50, appendix A, GDC 3, and § 50.48 of this chapter;

(19) A description of the quality assurance program applied to the design of the structures, systems, and components of the facility. Appendix B to 10 CFR part 50, ''Quality Assurance Criteria for Nuclear Power Plants and Fuel Reprocessing Plants,'' sets forth the requirements for quality assurance programs for nuclear power plants. The description of the quality assurance program for a nuclear power plant shall include a discussion of how the applicable requirements of appendix B to 10 CFR part 50 were satisfied;

(20) The information necessary to demonstrate that the standard plant complies with the earthquake engineering criteria in 10 CFR part 50, appendix S;

(21) Proposed technical resolutions of those Unresolved Safety Issues and medium- and high-priority generic safety issues which are identified in the version of NUREG–0933 current on the date up to 6 months before the docket date of the application and which are technically relevant to the design;

(22) The information necessary to demonstrate how operating experience insights have been incorporated into the plant design;

(23) For light-water reactor designs, a description and analysis of design features for the prevention and mitigation of severe accidents, e.g., challenges to containment integrity caused by core-concrete interaction, steam explosion, high-pressure core melt ejection, hydrogen combustion, and containment bypass;

(24) A representative conceptual design for those portions of the plant for which the application does not seek certification, to aid the NRC in its review of the FSAR and to permit assessment of the adequacy of the interface requirements in paragraph (a)(25) of this section;

(25) The interface requirements to be met by those portions of the plant for which the application does not seek

certification. These requirements must be sufficiently detailed to allow completion of the FSAR;

(26) Justification that compliance with the interface requirements of paragraph (a)(25) of this section is verifiable through inspections, tests, or analyses. The method to be used for verification of interface requirements must be included as part of the proposed ITAAC required by paragraph (b)(1) of this section; and

(27) A description of the design-specific probabilistic risk assessment (PRA) and its results.

(28) For applications for standard design certifications which are subject to 10 CFR 50.150(a), the information required by 10 CFR 50.150(b).

(b) The application must also contain:

(1) The proposed inspections, tests, analyses, and acceptance criteria that are necessary and sufficient to provide reasonable assurance that, if the inspections, tests, and analyses are performed and the acceptance criteria met, a facility that incorporates the design certification has been constructed and will be operated in conformity with the design certification, the provisions of the Act, and the Commission's rules and regulations; and

(2) An environmental report as required by 10 CFR 51.55.

(c) This paragraph applies, according to its provisions, to particular applications:

(1) An application for certification of a nuclear power reactor design that is an evolutionary change from light-water reactor designs of plants that have been licensed and in commercial operation before April 18, 1989, must provide an essentially complete nuclear power plant design except for site-specific elements such as the service water intake structure and the ultimate heat sink;

(2) An application for certification of a nuclear power reactor design that differs significantly from the light-water reactor designs described in paragraph (c)(1) of this section or uses simplified, inherent, passive, or other innovative means to accomplish its safety functions must provide an essentially complete nuclear power reactor design except for site-specific elements such as the service water intake structure and the ultimate heat sink, and must meet the requirements of 10 CFR 50.43(e); and

(3) An application for certification of a modular nuclear power reactor design must describe and analyze the possible operating configurations of the reactor modules with common systems, interface requirements, and system interactions. The final safety analysis must also account for differences among the configurations, including any restrictions that will be necessary during the construction and startup of a given module to ensure the safe operation of any module already operating.

(d) Each applicant for a standard design certification under this part shall protect Safeguards Information against unauthorized disclosure in accordance with the requirements in §§ 73.21 and 73.22 of this chapter, as applicable.

[72 FR 49517, Aug. 28, 2007, as amended at 73 FR 63571, Oct. 24, 2008; 74 FR 28147, June 12, 2009]

§ 52.48 Standards for review of applications.

Applications filed under this subpart will be reviewed for compliance with the standards set out in 10 CFR parts 20, 50 and its appendices, 51, 73, and 100.

§ 52.51 Administrative review of applications.

(a) A standard design certification is a rule that will be issued in accordance with the provisions of subpart H of 10 CFR part 2, as supplemented by the provisions of this section. The Commission shall initiate the rulemaking after an application has been filed under § 52.45 and shall specify the procedures to be used for the rulemaking. The notice of proposed rulemaking published in the FEDERAL REGISTER must provide an opportunity for the submission of comments on the proposed design certification rule. If, at the time a proposed design certification rule is published in the FEDERAL REGISTER under this paragraph (a), the Commission decides that a legislative hearing should be held, the information required by 10 CFR 2.1502(c) must be included in the FEDERAL REGISTER document for the proposed design certification.

(b) Following the submission of comments on the proposed design certification rule, the Commission may, at its discretion, hold a legislative hearing under the procedures in subpart O of part 2 of this chapter. The Commission shall publish a document in the FEDERAL REGISTER of its decision to hold a legislative hearing. The document shall contain the information specified in paragraph (c) of this section, and specify whether the Commission or a presiding officer will conduct the legislative hearing.

(c) Notwithstanding anything in 10 CFR 2.390 to the contrary, proprietary information will be protected in the same manner and to the same extent as proprietary information submitted in connection with applications for licenses, provided that the design certification shall be published in Chapter I of this title.

§ 52.53 Referral to the Advisory Committee on Reactor Safeguards (ACRS).

The Commission shall refer a copy of the application to the ACRS. The ACRS shall report on those portions of the application which concern safety.

§ 52.54 Issuance of standard design certification.

(a) After conducting a rulemaking proceeding under § 52.51 on an application for a standard design certification and receiving the report to be submitted by the Advisory Committee on Reactor Safeguards under § 52.53, the Commission may issue a standard design certification in the form of a rule for the design which is the subject of the application, if the Commission determines that:

(1) The application meets the applicable standards and requirements of the Atomic Energy Act and the Commission's regulations;

(2) Notifications, if any, to other agencies or bodies have been duly made;

(3) There is reasonable assurance that the standard design conforms with the provisions of the Act, and the Commission's regulations;

(4) The applicant is technically qualified;

(5) The proposed inspections, tests, analyses, and acceptance criteria are necessary and sufficient, within the scope of the standard design, to provide reasonable assurance that, if the inspections, tests, and analyses are performed and the acceptance criteria met, the facility has been constructed and will be operated in accordance with the design certification, the provisions of the Act, and the Commission's regulations;

(6) Issuance of the standard design certification will not be inimical to the common defense and security or to the health and safety of the public;

(7) The findings required by subpart A of part 51 of this chapter have been made; and

(8) The applicant has implemented the quality assurance program described or referenced in the safety analysis report.

(b) The design certification rule must specify the site parameters, design characteristics, and any additional requirements and restrictions of the design certification rule.

(c) After the Commission has adopted a final design certification rule, the applicant shall not permit any individual to have access to or any facility to possess restricted data or classified National Security Information until the individual and/or facility has been approved for access under the provisions of 10 CFR parts 25 and/or 95, as applicable.

§ 52.55 Duration of certification.

(a) Except as provided in paragraph (b) of this section, a standard design certification issued under this subpart is valid for 15 years from the date of issuance.

(b) A standard design certification continues to be valid beyond the date of expiration in any proceeding on an application for a combined license or an operating license that references the standard design certification and is docketed either before the date of expiration of the certification, or, if a timely application for renewal of the certification has been filed, before the Commission has determined whether to renew the certification. A design certification also continues to be valid beyond the date of expiration in any

hearing held under § 52.103 before operation begins under a combined license that references the design certification.

(c) An applicant for a construction permit or a combined license may, at its own risk, reference in its application a design for which a design certification application has been docketed but not granted.

§ 52.57 Application for renewal.

(a) Not less than 12 nor more than 36 months before the expiration of the initial 15-year period, or any later renewal period, any person may apply for renewal of the certification. An application for renewal must contain all information necessary to bring up to date the information and data contained in the previous application. The Commission will require, before renewal of certification, that information normally contained in certain procurement specifications and construction and installation specifications be completed and available for audit if this information is necessary for the Commission to make its safety determination. Notice and comment procedures must be used for a rulemaking proceeding on the application for renewal. The Commission, in its discretion, may require the use of additional procedures in individual renewal proceedings.

(b) A design certification, either original or renewed, for which a timely application for renewal has been filed remains in effect until the Commission has determined whether to renew the certification. If the certification is not renewed, it continues to be valid in certain proceedings, in accordance with the provisions of § 52.55.

(c) The Commission shall refer a copy of the application for renewal to the Advisory Committee on Reactor Safeguards (ACRS). The ACRS shall report on those portions of the application which concern safety and shall apply the criteria set forth in § 52.59.

§ 52.59 Criteria for renewal.

(a) The Commission shall issue a rule granting the renewal if the design, either as originally certified or as modified during the rulemaking on the renewal, complies with the Atomic Energy Act and the Commission's regulations applicable and in effect at the time the certification was issued, provided, however, that the first time the Commission issues a rule granting the renewal for a standard design certification in effect on July 13, 2009, the Commission shall, in addition, find that the renewed design complies with the applicable requirements of 10 CFR 50.150.

(b) The Commission may impose other requirements if it determines that:

(1) They are necessary for adequate protection to public health and safety or common defense and security;

(2) They are necessary for compliance with the Commission's regulations and orders applicable and in effect at the time the design certification was issued; or

(3) There is a substantial increase in overall protection of the public health and safety or the common defense and security to be derived from the new requirements, and the direct and indirect costs of implementing those requirements are justified in view of this increased protection.

(c) In addition, the applicant for renewal may request an amendment to the design certification. The Commission shall grant the amendment request if it determines that the amendment will comply with the Atomic Energy Act and the Commission's regulations in effect at the time of renewal. If the amendment request entails such an extensive change to the design certification that an essentially new standard design is being proposed, an application for a design certification must be filed in accordance with this subpart.

(d) Denial of renewal does not bar the applicant, or another applicant, from filing a new application for certification of the design, which proposes design changes that correct the deficiencies cited in the denial of the renewal.

[72 FR 49517, Aug. 28, 2007, as amended at 74 FR 28147, June 12, 2009]

§ 52.61 Duration of renewal.

Each renewal of certification for a standard design will be for not less than 10, nor more than 15 years.

§ 52.63 Finality of standard design certifications.

(a)(1) Notwithstanding any provision in 10 CFR 50.109, while a standard design certification rule is in effect under §§ 52.55 or 52.61, the Commission may not modify, rescind, or impose new requirements on the certification information, whether on its own motion, or in response to a petition from any person, unless the Commission determines in a rulemaking that the change:

(i) Is necessary either to bring the certification information or the referencing plants into compliance with the Commission's regulations applicable and in effect at the time the certification was issued;

(ii) Is necessary to provide adequate protection of the public health and safety or the common defense and security;

(iii) Reduces unnecessary regulatory burden and maintains protection to public health and safety and the common defense and security;

(iv) Provides the detailed design information to be verified under those inspections, tests, analyses, and acceptance criteria (ITAAC) which are directed at certification information (*i.e.*, design acceptance criteria);

(v) Is necessary to correct material errors in the certification information;

(vi) Substantially increases overall safety, reliability, or security of facility design, construction, or operation, and the direct and indirect costs of implementation of the rule change are justified in view of this increased safety, reliability, or security; or

(vii) Contributes to increased standardization of the certification information.

(2)(i) In a rulemaking under § 52.63(a)(1), except for § 52.63(a)(1)(ii), the Commission will give consideration to whether the benefits justify the costs for plants that are already licensed or for which an application for a permit or license is under consideration.

(ii) The rulemaking procedures for changes under § 52.63(a)(1) must provide for notice and opportunity for public comment.

(3) Any modification the NRC imposes on a design certification rule under paragraph (a)(1) of this section will be applied to all plants referencing the certified design, except those to which the modification has been rendered technically irrelevant by action taken under paragraphs (a)(4) or (b)(1) of this section.

(4) The Commission may not impose new requirements by plant-specific order on any part of the design of a specific plant referencing the design certification rule if that part was approved in the design certification while a design certification rule is in effect under § 52.55 or § 52.61, unless:

(i) A modification is necessary to secure compliance with the Commission's regulations applicable and in effect at the time the certification was issued, or to assure adequate protection of the public health and safety or the common defense and security; and

(ii) Special circumstances as defined in 10 CFR 52.7 are present. In addition to the factors listed in § 52.7, the Commission shall consider whether the special circumstances which § 52.7 requires to be present outweigh any decrease in safety that may result from the reduction in standardization caused by the plant-specific order.

(5) Except as provided in 10 CFR 2.335, in making the findings required for issuance of a combined license, construction permit, operating license, or manufacturing license, or for any hearing under § 52.103, the Commission shall treat as resolved those matters resolved in connection with the issuance or renewal of a design certification rule.

(b)(1) An applicant or licensee who references a design certification rule may request an exemption from one or more elements of the certification information. The Commission may grant such a request only if it determines that the exemption will comply with the requirements of § 52.7. In addition to the factors listed in § 52.7, the Commission shall consider whether the special circumstances that § 52.7 requires to be present outweigh any decrease in safety that may result from the reduction in standardization caused by the exemption. The granting of an exemption on request of an applicant is subject to litigation in the same manner as other issues in the operating license or combined license hearing.

(2) Subject to § 50.59 of this chapter, a licensee who references a design certification rule may make departures from the design of the nuclear power facility, without prior Commission approval, unless the proposed departure involves a change to the design as described in the rule certifying the design. The licensee shall maintain records of all departures from the facility and these records must be maintained and available for audit until the date of termination of the license.

(c) The Commission will require, before granting a construction permit, combined license, operating license, or manufacturing license which references a design certification rule, that information normally contained in certain procurement specifications and construction and installation specifications be completed and available for audit if the information is necessary for the Commission to make its safety determinations, including the determination that the application is consistent with the certification information. This information may be acquired by appropriate arrangements with the design certification applicant.

Subpart C—Combined Licenses

§ 52.71 Scope of subpart.

This subpart sets out the requirements and procedures applicable to Commission issuance of combined licenses for nuclear power facilities.

§ 52.73 Relationship to other subparts.

(a) An application for a combined license under this subpart may, but need not, reference a standard design certification, standard design approval, or manufacturing license issued under subparts B, E, or F of this part, respectively, or an early site permit issued under subpart A of this part. In the absence of a demonstration that an entity other than the one originally sponsoring and obtaining a design certification is qualified to supply a design, the Commission will entertain an application for a combined license that references a standard design certification issued under subpart B of this part only if the entity that sponsored and obtained the certification supplies the design for the applicant's use.

(b) The Commission will require, before granting a combined license that references a standard design certification, that information normally contained in certain procurement specifications and construction and installation specifications be completed and available for audit if the information is necessary for the Commission to make its safety determinations, including the determination that the application is consistent with the certification information.

§ 52.75 Filing of applications.

(a) Any person except one excluded by § 50.38 of this chapter may file an application for a combined license for a nuclear power facility with the Director, Office of Nuclear Reactor Regulation.

(b) The application must comply with the applicable filing requirements of §§ 52.3 and 50.30 of this chapter.

(c) The fees associated with the filing and review of the application are set forth in 10 CFR part 170.

[72 FR 49517, Aug. 28, 2007, as amended at 73 FR 5724, Jan. 31, 2008; 84 FR 65645, Nov. 29, 2019]

§ 52.77 Contents of applications; general information.

The application must contain all of the information required by 10 CFR 50.33.

§ 52.79 Contents of applications; technical information in final safety analysis report.

(a) The application must contain a final safety analysis report that describes the facility, presents the design bases and the limits on its operation, and presents a safety analysis of the structures, systems, and components of the facility as a whole. The final safety analysis report shall include the following information, at a level of information sufficient to enable the Commission to reach a final conclusion on all safety matters that must be resolved by the Commission before issuance of a combined license:

(1)(i) The boundaries of the site;

(ii) The proposed general location of each facility on the site;

(iii) The seismic, meteorological, hydrologic, and geologic characteristics

of the proposed site with appropriate consideration of the most severe of the natural phenomena that have been historically reported for the site and surrounding area and with sufficient margin for the limited accuracy, quantity, and time in which the historical data have been accumulated;

(iv) The location and description of any nearby industrial, military, or transportation facilities and routes;

(v) The existing and projected future population profile of the area surrounding the site;

(vi) A description and safety assessment of the site on which the facility is to be located. The assessment must contain an analysis and evaluation of the major structures, systems, and components of the facility that bear significantly on the acceptability of the site under the radiological consequence evaluation factors identified in paragraphs (a)(1)(vi)(A) and (a)(1)(vi)(B) of this section. In performing this assessment, an applicant shall assume a fission product release[5] from the core into the containment assuming that the facility is operated at the ultimate power level contemplated. The applicant shall perform an evaluation and analysis of the postulated fission product release, using the expected demonstrable containment leak rate and any fission product cleanup systems intended to mitigate the consequences of the accidents, together with applicable site characteristics, including site meteorology, to evaluate the offsite radiological consequences. Site characteristics must comply with part 100 of this chapter. The evaluation must determine that:

(A) An individual located at any point on the boundary of the exclusion area for any 2-hour period following the onset of the postulated fission product release, would not receive a radiation dose in excess of 25 rem[6] total effective dose equivalent (TEDE).

(B) An individual located at any point on the outer boundary of the low population zone, who is exposed to the radioactive cloud resulting from the postulated fission product release (during the entire period of its passage) would not receive a radiation dose in excess of 25 rem TEDE; and

(2) A description and analysis of the structures, systems, and components of the facility with emphasis upon performance requirements, the bases, with technical justification therefor, upon which these requirements have been established, and the evaluations required to show that safety functions will be accomplished. It is expected that reactors will reflect through their design, construction, and operation an extremely low probability for accidents that could result in the release of significant quantities of radioactive fission products. The descriptions shall be sufficient to permit understanding of the system designs and their relationship to safety evaluations. Items such as the reactor core, reactor coolant system, instrumentation and control systems, electrical systems, containment system, other engineered safety features, auxiliary and emergency systems, power conversion systems, radioactive waste handling systems, and fuel handling systems shall be discussed insofar as they are pertinent. The following power reactor design characteristics and proposed operation will be taken into consideration by the Commission:

[5] The fission product release assumed for this evaluation should be based upon a major accident, hypothesized for purposes of site analysis or postulated from considerations of possible accidental events. These accidents have generally been assumed to result in substantial meltdown of the core with subsequent release into the containment of appreciable quantities of fission products.

[6] A whole body dose of 25 rem has been stated to correspond numerically to the once in a lifetime accidental or emergency dose for radiation workers which, according to NCRP recommendations at the time could be disregarded in the determination of their radiation exposure status (see NBS Handbook 69 dated June 5, 1959). However, its use is not intended to imply that this number constitutes an acceptable limit for an emergency dose to the public under accident conditions. Rather, this dose value has been set forth in this section as a reference value, which can be used in the evaluation of plant design features with respect to postulated reactor accidents, to assure that these designs provide assurance of low risk of public exposure to radiation, in the event of an accident.

(i) Intended use of the reactor including the proposed maximum power level and the nature and inventory of contained radioactive materials;

(ii) The extent to which generally accepted engineering standards are applied to the design of the reactor;

(iii) The extent to which the reactor incorporates unique, unusual or enhanced safety features having a significant bearing on the probability or consequences of accidental release of radioactive materials;

(iv) The safety features that are to be engineered into the facility and those barriers that must be breached as a result of an accident before a release of radioactive material to the environment can occur. Special attention must be directed to plant design features intended to mitigate the radiological consequences of accidents. In performing this assessment, an applicant shall assume a fission product release[7] from the core into the containment assuming that the facility is operated at the ultimate power level contemplated;

(3) The kinds and quantities of radioactive materials expected to be produced in the operation and the means for controlling and limiting radioactive effluents and radiation exposures within the limits set forth in part 20 of this chapter;

(4) The design of the facility including:

(i) The principal design criteria for the facility. Appendix A to part 50 of this chapter, ''General Design Criteria for Nuclear Power Plants,'' establishes minimum requirements for the principal design criteria for water-cooled nuclear power plants similar in design and location to plants for which construction permits have previously been issued by the Commission and provides guidance to applicants in establishing principal design criteria for other types of nuclear power units;

(ii) The design bases and the relation of the design bases to the principal design criteria;

(iii) Information relative to materials of construction, arrangement, and dimensions, sufficient to provide reasonable assurance that the design will conform to the design bases with adequate margin for safety.

(5) An analysis and evaluation of the design and performance of structures, systems, and components with the objective of assessing the risk to public health and safety resulting from operation of the facility and including determination of the margins of safety during normal operations and transient conditions anticipated during the life of the facility, and the adequacy of structures, systems, and components provided for the prevention of accidents and the mitigation of the consequences of accidents. Analysis and evaluation of ECCS cooling performance and the need for high-point vents following postulated loss-of-coolant accidents shall be performed in accordance with the requirements of §§50.46 and 50.46a of this chapter;

(6) A description and analysis of the fire protection design features for the reactor necessary to comply with 10 CFR part 50, appendix A, GDC 3, and §50.48 of this chapter;

(7) A description of protection provided against pressurized thermal shock events, including projected values of the reference temperature for reactor vessel beltline materials as defined in §§50.60 and 50.61(b)(1) and (b)(2) of this chapter;

(8) An analysis and description of the equipment and systems for combustible gas control as required by §50.44 of this chapter;

(9) The coping analyses, and any design features necessary to address station blackout, as described in §50.63 of this chapter;

(10) A description of the program, and its implementation, required by §50.49(a) of this chapter for the environmental qualification of electric equipment important to safety and the list of electric equipment important to safety that is required by 10 CFR 50.49(d);

(11) A description of the program(s), and their implementation, necessary to

[7] The fission product release assumed for this evaluation should be based upon a major accident, hypothesized for purposes of site analysis or postulated from considerations of possible accidental events. These accidents have generally been assumed to result in substantial meltdown of the core with subsequent release into the containment of appreciable quantities of fission products.

ensure that the systems and components meet the requirements of the ASME Boiler and Pressure Vessel Code and the ASME Code for Operation and Maintenance of Nuclear Power Plants in accordance with 50.55a of this chapter;

(12) A description of the primary containment leakage rate testing program, and its implementation, necessary to ensure that the containment meets the requirements of appendix J to 10 CFR part 50;

(13) A description of the reactor vessel material surveillance program required by appendix H to 10 CFR part 50 and its implementation;

(14) A description of the operator training program, and its implementation, necessary to meet the requirements of 10 CFR part 55;

(15) A description of the program, and its implementation, for monitoring the effectiveness of maintenance necessary to meet the requirements of § 50.65 of this chapter;

(16)(i) The information with respect to the design of equipment to maintain control over radioactive materials in gaseous and liquid effluents produced during normal reactor operations, as described in § 50.34a(d) of this chapter;

(ii) A description of the process and effluent monitoring and sampling program required by appendix I to 10 CFR part 50 and its implementation.

(17) The information with respect to compliance with technically relevant positions of the Three Mile Island requirements in § 50.34(f) of this chapter, with the exception of § 50.34(f)(1)(xii), (f)(2)(ix), (f)(2)(xxv), and (f)(3)(v);

(18) If the applicant seeks to use risk-informed treatment of SSCs in accordance with § 50.69 of this chapter, the information required by § 50.69(b)(2) of this chapter;

(19) Information necessary to demonstrate that the plant complies with the earthquake engineering criteria in 10 CFR part 50, appendix S;

(20) Proposed technical resolutions of those Unresolved Safety Issues and medium- and high-priority generic safety issues which are identified in the version of NUREG–0933 current on the date up to 6 months before the docket date of the application and which are technically relevant to the design;

(21) Emergency plans complying with the requirements of § 50.47 of this chapter, and 10 CFR part 50, appendix E;

(22)(i) All emergency plan certifications that have been obtained from the State and local governmental agencies with emergency planning responsibilities must state that:

(A) The proposed emergency plans are practicable;

(B) These agencies are committed to participating in any further development of the plans, including any required field demonstrations; and

(C) These agencies are committed to executing their responsibilities under the plans in the event of an emergency;

(ii) If certifications cannot be obtained after sustained, good faith efforts by the applicant, then the application must contain information, including a utility plan, sufficient to show that the proposed plans provide reasonable assurance that adequate protective measures can and will be taken in the event of a radiological emergency at the site.

(23) [Reserved]

(24) If the application is for a nuclear power reactor design which differs significantly from light-water reactor designs that were licensed before 1997 or use simplified, inherent, passive, or other innovative means to accomplish their safety functions, the application must describe how the design meets the requirements in § 50.43(e) of this chapter;

(25) A description of the quality assurance program, applied to the design, and to be applied to the fabrication, construction, and testing, of the structures, systems, and components of the facility. Appendix B to 10 CFR part 50 sets forth the requirements for quality assurance programs for nuclear power plants. The description of the quality assurance program for a nuclear power plant must include a discussion of how the applicable requirements of appendix B to 10 CFR part 50 have been and will be satisfied, including a discussion of how the quality assurance program will be implemented;

(26) The applicant's organizational structure, allocations or responsibilities and authorities, and personnel

qualifications requirements for operation;

(27) Managerial and administrative controls to be used to assure safe operation. Appendix B to 10 CFR part 50 sets forth the requirements for these controls for nuclear power plants. The information on the controls to be used for a nuclear power plant shall include a discussion of how the applicable requirements of appendix B to 10 CFR part 50 will be satisfied;

(28) Plans for preoperational testing and initial operations;

(29)(i) Plans for conduct of normal operations, including maintenance, surveillance, and periodic testing of structures, systems, and components;

(ii) Plans for coping with emergencies, other than the plans required by § 52.79(a)(21);

(30) Proposed technical specifications prepared in accordance with the requirements of §§ 50.36 and 50.36a of this chapter;

(31) For nuclear power plants to be operated on multi-unit sites, an evaluation of the potential hazards to the structures, systems, and components important to safety of operating units resulting from construction activities, as well as a description of the managerial and administrative controls to be used to provide assurance that the limiting conditions for operation are not exceeded as a result of construction activities at the multi-unit sites;

(32) The technical qualifications of the applicant to engage in the proposed activities in accordance with the regulations in this chapter;

(33) A description of the training program required by § 50.120 of this chapter and its implementation;

(34) A description and plans for implementation of an operator requalification program. The operator requalification program must as a minimum, meet the requirements for those programs contained in § 55.59 of this chapter;

(35)(i) A physical security plan, describing how the applicant will meet the requirements of 10 CFR part 73 (and 10 CFR part 11, if applicable, including the identification and description of jobs as required by § 11.11(a) of this chapter, at the proposed facility). The plan must list tests, inspections, audits, and other means to be used to demonstrate compliance with the requirements of 10 CFR parts 11 and 73, if applicable;

(ii) A description of the implementation of the physical security plan;

(36)(i) A safeguards contingency plan in accordance with the criteria set forth in appendix C to 10 CFR part 73. The safeguards contingency plan shall include plans for dealing with threats, thefts, and radiological sabotage, as defined in part 73 of this chapter, relating to the special nuclear material and nuclear facilities licensed under this chapter and in the applicant's possession and control. Each application for this type of license shall include the information contained in the applicant's safeguards contingency plan.[8] (Implementing procedures required for this plan need not be submitted for approval.)

(ii) A training and qualification plan in accordance with the criteria set forth in appendix B to 10 CFR part 73.

(iii) A cyber security plan in accordance with the criteria set forth in § 73.54 of this chapter;

(iv) A description of the implementation of the safeguards contingency plan, training and qualification plan, and cyber security plan; and

(v) Each applicant who prepares a physical security plan, a safeguards contingency plan, a training and qualification plan, or a cyber security plan, shall protect the plans and other related Safeguards Information against unauthorized disclosure in accordance with the requirements of § 73.21 of this chapter.

(37) The information necessary to demonstrate how operating experience insights have been incorporated into the plant design;

(38) For light-water reactor designs, a description and analysis of design features for the prevention and mitigation of severe accidents, e.g., challenges to containment integrity caused by core-concrete interaction, steam explosion,

[8] A physical security plan that contains all the information required in both § 73.55 of this chapter and appendix C to 10 CFR part 73 satisfies the requirement for a contingency plan.

high-pressure core melt ejection, hydrogen combustion, and containment bypass;

(39) A description of the radiation protection program required by § 20.1101 of this chapter and its implementation.

(40) A description of the fire protection program required by § 50.48 of this chapter and its implementation.

(41) For applications for light-water-cooled nuclear power plant combined licenses, an evaluation of the facility against the Standard Review Plan (SRP) revision in effect 6 months before the docket date of the application. The evaluation required by this section shall include an identification and description of all differences in design features, analytical techniques, and procedural measures proposed for a facility and those corresponding features, techniques, and measures given in the SRP acceptance criteria. Where a difference exists, the evaluation shall discuss how the proposed alternative provides an acceptable method of complying with the Commission's regulations, or portions thereof, that underlie the corresponding SRP acceptance criteria. The SRP is not a substitute for the regulations, and compliance is not a requirement;

(42) Information demonstrating how the applicant will comply with requirements for reduction of risk from anticipated transients without scram (ATWS) events in § 50.62 of this chapter;

(43) Information demonstrating how the applicant will comply with requirements for criticality accidents in § 50.68 of this chapter;

(44) A description of the fitness-for-duty program required by 10 CFR part 26 and its implementation.

(45) The information required by § 20.1406 of this chapter.

(46) A description of the plant-specific probabilistic risk assessment (PRA) and its results.

(47) For applications for combined licenses which are subject to 10 CFR 50.150(a), the information required by 10 CFR 50.150(b).

(b) If the combined license application references an early site permit, then the following requirements apply:

(1) The final safety analysis report need not contain information or analyses submitted to the Commission in connection with the early site permit, *provided, however*, that the final safety analysis report must either include or incorporate by reference the early site permit site safety analysis report and must contain, in addition to the information and analyses otherwise required, information sufficient to demonstrate that the design of the facility falls within the site characteristics and design parameters specified in the early site permit.

(2) If the final safety analysis report does not demonstrate that design of the facility falls within the site characteristics and design parameters, the application shall include a request for a variance that complies with the requirements of §§ 52.39 and 52.93.

(3) The final safety analysis report must demonstrate that all terms and conditions that have been included in the early site permit, other than those imposed under § 50.36b, will be satisfied by the date of issuance of the combined license. Any terms or conditions of the early site permit that could not be met by the time of issuance of the combined license, must be set forth as terms or conditions of the combined license.

(4) If the early site permit approves complete and integrated emergency plans, or major features of emergency plans, then the final safety analysis report must include any new or additional information that updates and corrects the information that was provided under § 52.17(b), and discuss whether the new or additional information materially changes the bases for compliance with the applicable requirements. The application must identify changes to the emergency plans or major features of emergency plans that have been incorporated into the proposed facility emergency plans and that constitute or would constitute a reduction in effectiveness under § 50.54(q) of this chapter.

(5) If complete and integrated emergency plans are approved as part of the early site permit, new certifications meeting the requirements of paragraph (a)(22) of this section are not required.

(c) If the combined license application references a standard design approval, then the following requirements apply:

(1) The final safety analysis report need not contain information or analyses submitted to the Commission in connection with the design approval, *provided, however,* that the final safety analysis report must either include or incorporate by reference the standard design approval final safety analysis report and must contain, in addition to the information and analyses otherwise required, information sufficient to demonstrate that the characteristics of the site fall within the site parameters specified in the design approval. In addition, the plant-specific PRA information must use the PRA information for the design approval and must be updated to account for site-specific design information and any design changes or departures.

(2) The final safety analysis report must demonstrate that all terms and conditions that have been included in the design approval will be satisfied by the date of issuance of the combined license.

(d) If the combined license application references a standard design certification, then the following requirements apply:

(1) The final safety analysis report need not contain information or analyses submitted to the Commission in connection with the design certification, *provided, however,* that the final safety analysis report must either include or incorporate by reference the standard design certification final safety analysis report and must contain, in addition to the information and analyses otherwise required, information sufficient to demonstrate that the site characteristics fall within the site parameters specified in the design certification. In addition, the plant-specific PRA information must use the PRA information for the design certification and must be updated to account for site-specific design information and any design changes or departures.

(2) The final safety analysis report must demonstrate that the interface requirements established for the design under § 52.47 have been met.

(3) The final safety analysis report must demonstrate that all requirements and restrictions set forth in the referenced design certification rule, other than those imposed under § 50.36b, must be satisfied by the date of issuance of the combined license. Any requirements and restrictions set forth in the referenced design certification rule that could not be satisfied by the time of issuance of the combined license, must be set forth as terms or conditions of the combined license.

(e) If the combined license application references the use of one or more manufactured nuclear power reactors licensed under subpart F of this part, then the following requirements apply:

(1) The final safety analysis report need not contain information or analyses submitted to the Commission in connection with the manufacturing license, *provided, however,* that the final safety analysis report must either include or incorporate by reference the manufacturing license final safety analysis report and must contain, in addition to the information and analyses otherwise required, information sufficient to demonstrate that the site characteristics fall within the site parameters specified in the manufacturing license. In addition, the plant-specific PRA information must use the PRA information for the manufactured reactor and must be updated to account for site-specific design information and any design changes or departures.

(2) The final safety analysis report must demonstrate that the interface requirements established for the design have been met.

(3) The final safety analysis report must demonstrate that all terms and conditions that have been included in the manufacturing license, other than those imposed under § 50.36b, will be satisfied by the date of issuance of the combined license. Any terms or conditions of the manufacturing license that could not be met by the time of issuance of the combined license, must be set forth as terms or conditions of the combined license.

(f) Each applicant for a combined license under this subpart shall protect Safeguards Information against unauthorized disclosure in accordance with

the requirements in §§ 73.21 and 73.22 of this chapter, as applicable.

[72 FR 49517, Aug. 28, 2007, as amended at 73 FR 63571, Oct. 24, 2008; 74 FR 13970, Mar. 27, 2009; 74 FR 28147, June 12, 2009; 76 FR 72600, Nov. 23, 2011; 78 FR 34249, June 7, 2013; 84 FR 63568, Nov. 18, 2019]

§ 52.80 Contents of applications; additional technical information.

The application must contain:

(a) The proposed inspections, tests, and analyses, including those applicable to emergency planning, that the licensee shall perform, and the acceptance criteria that are necessary and sufficient to provide reasonable assurance that, if the inspections, tests, and analyses are performed and the acceptance criteria met, the facility has been constructed and will be operated in conformity with the combined license, the provisions of the Act, and the Commission's rules and regulations.

(1) If the application references an early site permit with ITAAC, the early site permit ITAAC must apply to those aspects of the combined license which are approved in the early site permit.

(2) If the application references a standard design certification, the ITAAC contained in the certified design must apply to those portions of the facility design which are approved in the design certification.

(3) If the application references an early site permit with ITAAC or a standard design certification or both, the application may include a notification that a required inspection, test, or analysis in the ITAAC has been successfully completed and that the corresponding acceptance criterion has been met. The FEDERAL REGISTER notification required by § 52.85 must indicate that the application includes this notification.

(b) An environmental report, either in accordance with 10 CFR 51.50(c) if a limited work authorization under 10 CFR 50.10 is not requested in conjunction with the combined license application, or in accordance with §§ 51.49 and 51.50(c) of this chapter if a limited work authorization is requested in conjunction with the combined license application.

(c) If the applicant wishes to request that a limited work authorization under 10 CFR 50.10 be issued before issuance of the combined license, the application must include the information otherwise required by 10 CFR 50.10, in accordance with either 10 CFR 2.101(a)(1) through (a)(4), or 10 CFR 2.101(a)(9).

(d) The applicant's plans for implementing the requirements of § 50.155 of this chapter including a schedule for achieving full compliance with these requirements, and a description of the equipment upon which the strategies and guidelines required by § 50.155(b)(1) of this chapter rely, including the planned locations of the equipment and how the equipment meets the requirements of § 155(c) of this chapter.

[72 FR 49517, Aug. 28, 2007, as amended at 72 FR 57447, Oct. 9, 2007; 74 FR 13970, Mar. 27, 2009; 84 FR 39719, Aug. 8, 2019]

§ 52.81 Standards for review of applications.

Applications filed under this subpart will be reviewed according to the standards set out in 10 CFR parts 20, 50, 51, 54, 55, 73, 100, and 140.

§ 52.83 Finality of referenced NRC approvals; partial initial decision on site suitability.

(a) If the application for a combined license under this subpart references an early site permit, design certification rule, standard design approval, or manufacturing license, the scope and nature of matters resolved for the application and any combined license issued are governed by the relevant provisions addressing finality, including §§ 52.39, 52.63, 52.98, 52.145, and 52.171.

(b) While a partial decision on site suitability is in effect under 10 CFR 2.627(b)(2), the scope and nature of matters resolved in the proceeding are governed by the finality provisions in 10 CFR 2.629.

[72 FR 49517, Aug. 28, 2007, as amended at 84 FR 63568, Nov. 18, 2019]

§ 52.85 Administrative review of applications; hearings.

A proceeding on a combined license is subject to all applicable procedural requirements contained in 10 CFR part

2, including the requirements for docketing (§ 2.101 of this chapter) and issuance of a notice of hearing (§ 2.104 of this chapter). If an applicant requests a Commission finding on certain ITAAC with the issuance of the combined license, then those ITAAC will be identified in the notice of hearing. All hearings on combined licenses are governed by the procedures contained in 10 CFR part 2.

§ 52.87 Referral to the Advisory Committee on Reactor Safeguards (ACRS).

The Commission shall refer a copy of the application to the ACRS. The ACRS shall report on those portions of the application that concern safety and shall apply the standards referenced in § 52.81, in accordance with the finality provisions in § 52.83.

§ 52.89 [Reserved]

§ 52.91 Authorization to conduct limited work authorization activities.

(a) If the application does not reference an early site permit which authorizes the holder to perform the activities under 10 CFR 50.10(d), the applicant may not perform those activities without obtaining the separate authorization required by 10 CFR 50.10(d). Authorization may be granted only after the presiding officer in the proceeding on the application has made the findings and determination required by 10 CFR 50.10(e), and the Director of the Office of Nuclear Reactor Regulation makes the determination required by 10 CFR 50.10(e).

(b) If, after an applicant has performed the activities permitted by paragraph (a) of this section, the application for the combined license is withdrawn or denied, then the applicant shall implement the approved site redress plan.

[72 FR 57447, Oct. 9, 2007, as amended at 84 FR 65645, Nov. 29, 2019]

§ 52.93 Exemptions and variances.

(a) Applicants for a combined license under this subpart, or any amendment to a combined license, may include in the application a request for an exemption from one or more of the Commission's regulations.

(1) If the request is for an exemption from any part of a referenced design certification rule, the Commission may grant the request if it determines that the exemption complies with any exemption provisions of the referenced design certification rule, or with § 52.63 if there are no applicable exemption provisions in the referenced design certification rule.

(2) For all other requests for exemptions, the Commission may grant a request if it determines that the exemption complies with § 52.7.

(b) An applicant for a combined license who has filed an application referencing an early site permit issued under subpart A of this part may include in the application a request for a variance from one or more site characteristics, design parameters, or terms and conditions of the permit, or from the site safety analysis report. In determining whether to grant the variance, the Commission shall apply the same technically relevant criteria as were applicable to the application for the original or renewed site permit. Once a construction permit or combined license referencing an early site permit is issued, variances from the early site permit will not be granted for that construction permit or combined license.

(c) An applicant for a combined license who has filed an application referencing a nuclear power reactor manufactured under a manufacturing license issued under subpart F of this part may include in the application a request for a departure from one or more design characteristics, site parameters, terms and conditions, or approved design of the manufactured reactor. The Commission may grant a request only if it determines that the departure will comply with the requirements of 10 CFR 52.7, and that the special circumstances outweigh any decrease in safety that may result from the reduction in standardization caused by the departure.

(d) Issuance of a variance under paragraph (b) or a departure under paragraph (c) of this section is subject to litigation during the combined license proceeding in the same manner as other issues material to that proceeding.

§ 52.97 Issuance of combined licenses.

(a)(1) After conducting a hearing in accordance with § 52.85 and receiving the report submitted by the ACRS, the Commission may issue a combined license if the Commission finds that:

(i) The applicable standards and requirements of the Act and the Commission's regulations have been met;

(ii) Any required notifications to other agencies or bodies have been duly made;

(iii) There is reasonable assurance that the facility will be constructed and will operate in conformity with the license, the provisions of the Act, and the Commission's regulations.

(iv) The applicant is technically and financially qualified to engage in the activities authorized; and

(v) Issuance of the license will not be inimical to the common defense and security or to the health and safety of the public; and

(vi) The findings required by subpart A of part 51 of this chapter have been made.

(2) The Commission may also find, at the time it issues the combined license, that certain acceptance criteria in one or more of the inspections, tests, analyses, and acceptance criteria (ITAAC) in a referenced early site permit or standard design certification have been met. This finding will finally resolve that those acceptance criteria have been met, those acceptance criteria will be deemed to be excluded from the combined license, and findings under § 52.103(g) with respect to those acceptance criteria are unnecessary.

(b) The Commission shall identify within the combined license the inspections, tests, and analyses, including those applicable to emergency planning, that the licensee shall perform, and the acceptance criteria that, if met, are necessary and sufficient to provide reasonable assurance that the facility has been constructed and will be operated in conformity with the license, the provisions of the Act, and the Commission's rules and regulations.

(c) A combined license shall contain the terms and conditions, including technical specifications, as the Commission deems necessary and appropriate.

§ 52.98 Finality of combined licenses; information requests.

(a) After issuance of a combined license, the Commission may not modify, add, or delete any term or condition of the combined license, the design of the facility, the inspections, tests, analyses, and acceptance criteria contained in the license which are not derived from a referenced standard design certification or manufacturing license, except in accordance with the provisions of § 52.103 or § 50.109 of this chapter, as applicable.

(b) If the combined license does not reference a design certification or a reactor manufactured under a manufacturing license issued under subpart F of this part, then a licensee may make changes in the facility as described in the final safety analysis report (as updated), make changes in the procedures as described in the final safety analysis report (as updated), and conduct tests or experiments not described in the final safety analysis report (as updated) under the applicable change processes in 10 CFR part 50 (*e.g.*, § 50.54, § 50.59, or § 50.90 of this chapter).

(c) If the combined license references a certified design, then—

(1) Changes to or departures from information within the scope of the referenced design certification rule are subject to the applicable change processes in that rule; and

(2) Changes that are not within the scope of the referenced design certification rule are subject to the applicable change processes in 10 CFR part 50, unless they also involve changes to or noncompliance with information within the scope of the referenced design certification rule. In these cases, the applicable provisions of this section and the design certification rule apply.

(d) If the combined license references a reactor manufactured under a manufacturing license issued under subpart F of this part, then—

(1) Changes to or departures from information within the scope of the manufactured reactor's design are subject to the change processes in § 52.171; and

(2) Changes that are not within the scope of the manufactured reactor's design are subject to the applicable change processes in 10 CFR part 50.

(e) The Commission may issue and make immediately effective any amendment to a combined license upon a determination by the Commission that the amendment involves no significant hazards consideration, notwithstanding the pendency before the Commission of a request for a hearing from any person. The amendment may be issued and made immediately effective in advance of the holding and completion of any required hearing. The amendment will be processed in accordance with the procedures specified in 10 CFR 50.91.

(f) Any modification to, addition to, or deletion from the terms and conditions of a combined license, including any modification to, addition to, or deletion from the inspections, tests, analyses, or related acceptance criteria contained in the license is a proposed amendment to the license. There must be an opportunity for a hearing on the amendment.

(g) Except for information sought to verify licensee compliance with the current licensing basis for that facility, information requests to the holder of a combined license must be evaluated before issuance to ensure that the burden to be imposed on the licensee is justified in view of the potential safety significance of the issue to be addressed in the requested information. Each evaluation performed by the NRC staff must be in accordance with 10 CFR 50.54(f) and must be approved by the Executive Director for Operations or his or her designee before issuance of the request.

[72 FR 49517, Aug. 28, 2007, as amended at 86 FR 43402, Aug. 9, 2021]

§ 52.99 Inspection during construction; ITAAC schedules and notifications; NRC notices.

(a) *Licensee schedule for completing inspections, tests, or analyses.* The licensee shall submit to the NRC, no later than 1 year after issuance of the combined license or at the start of construction as defined at 10 CFR 50.10(a), whichever is later, its schedule for completing the inspections, tests, or analyses in the ITAAC. The licensee shall submit updates to the ITAAC schedules every 6 months thereafter and, within 1 year of its scheduled date for initial loading of fuel, the licensee shall submit updates to the ITAAC schedule every 30 days until the final notification is provided to the NRC under paragraph (c)(1) of this section.

(b) *Licensee and applicant conduct of activities subject to ITAAC.* With respect to activities subject to an ITAAC, an applicant for a combined license may proceed at its own risk with design and procurement activities, and a licensee may proceed at its own risk with design, procurement, construction, and preoperational activities, even though the NRC may not have found that any one of the prescribed acceptance criteria are met.

(c) *Licensee notifications*—(1) *ITAAC closure notification.* The licensee shall notify the NRC that prescribed inspections, tests, and analyses have been performed and that the prescribed acceptance criteria are met. The notification must contain sufficient information to demonstrate that the prescribed inspections, tests, and analyses have been performed and that the prescribed acceptance criteria are met.

(2) *ITAAC post-closure notifications.* Following the licensee's ITAAC closure notifications under paragraph (c)(1) of this section until the Commission makes the finding under 10 CFR 52.103(g), the licensee shall notify the NRC, in a timely manner, of new information that materially alters the basis for determining that either inspections, tests, or analyses were performed as required, or that acceptance criteria are met. The notification must contain sufficient information to demonstrate that, notwithstanding the new information, the prescribed inspections, tests, or analyses have been performed as required, and the prescribed acceptance criteria are met.

(3) *Uncompleted ITAAC notification.* If the licensee has not provided, by the date 225 days before the scheduled date for initial loading of fuel, the notification required by paragraph (c)(1) of this section for all ITAAC, then the licensee shall notify the NRC that the prescribed inspections, tests, or analyses for all uncompleted ITAAC will be performed and that the prescribed acceptance criteria will be met prior to operation. The notification must be provided no later than the date 225 days

before the scheduled date for initial loading of fuel, and must provide sufficient information to demonstrate that the prescribed inspections, tests, or analyses will be performed and the prescribed acceptance criteria for the uncompleted ITAAC will be met, including, but not limited to, a description of the specific procedures and analytical methods to be used for performing the prescribed inspections, tests, and analyses and determining that the prescribed acceptance criteria are met.

(4) *All ITAAC complete notification.* The licensee shall notify the NRC that all ITAAC are complete.

(d) *Licensee determination of non-compliance with ITAAC.* (1) In the event that an activity is subject to an ITAAC derived from a referenced standard design certification and the licensee has not demonstrated that the prescribed acceptance criteria are met, the licensee may take corrective actions to successfully complete that ITAAC or request an exemption from the standard design certification ITAAC, as applicable. A request for an exemption must also be accompanied by a request for a license amendment under 10 CFR 52.98(f).

(2) In the event that an activity is subject to an ITAAC not derived from a referenced standard design certification and the licensee has not demonstrated that the prescribed acceptance criteria are met, the licensee may take corrective actions to successfully complete that ITAAC or request a license amendment under 10 CFR 52.98(f).

(e) *NRC inspection, publication of notices, and availability of licensee notifications.* The NRC shall ensure that the prescribed inspections, tests, and analyses in the ITAAC are performed.

(1) At appropriate intervals until the last date for submission of requests for hearing under 10 CFR 52.103(a), the NRC shall publish notices in the FEDERAL REGISTER of the NRC staff's determination of the successful completion of inspections, tests, and analyses.

(2) The NRC shall make publicly available the licensee notifications under paragraph (c) of this section. The NRC shall, no later than the date of publication of the notice of intended operation required by 10 CFR 52.103(a), make publicly available those licensee notifications under paragraph (c) of this section that have been submitted to the NRC at least seven (7) days before that notice.

[77 FR 51892, Aug. 28, 2012]

§ 52.103 Operation under a combined license.

(a) The licensee shall notify the NRC of its scheduled date for initial loading of fuel no later than 270 days before the scheduled date and shall notify the NRC of updates to its schedule every 30 days thereafter. Not less than 180 days before the date scheduled for initial loading of fuel into a plant by a licensee that has been issued a combined license under this part, the Commission shall publish notice of intended operation in the FEDERAL REGISTER. The notice must provide that any person whose interest may be affected by operation of the plant may, within 60 days, request that the Commission hold a hearing on whether the facility as constructed complies, or on completion will comply, with the acceptance criteria in the combined license, except that a hearing shall not be granted for those ITAAC which the Commission found were met under § 52.97(a)(2).

(b) A request for hearing under paragraph (a) of this section must show, prima facie, that—

(1) One or more of the acceptance criteria of the ITAAC in the combined license have not been, or will not be, met; and

(2) The specific operational consequences of nonconformance that would be contrary to providing reasonable assurance of adequate protection of the public health and safety.

(c) The Commission, acting as the presiding officer, shall determine whether to grant or deny the request for hearing in accordance with the applicable requirements of 10 CFR 2.309. If the Commission grants the request, the Commission, acting as the presiding officer, shall determine whether during a period of interim operation there will be reasonable assurance of adequate protection to the public health and safety. The Commission's determination must consider the petitioner's *prima facie* showing and any

answers thereto. If the Commission determines there is such reasonable assurance, it shall allow operation during an interim period under the combined license.

(d) The Commission, in its discretion, shall determine appropriate hearing procedures, whether informal or formal adjudicatory, for any hearing under paragraph (a) of this section, and shall state its reasons therefore.

(e) The Commission shall, to the maximum possible extent, render a decision on issues raised by the hearing request within 180 days of the publication of the notice provided by paragraph (a) of this section or by the anticipated date for initial loading of fuel into the reactor, whichever is later.

(f) A petition to modify the terms and conditions of the combined license will be processed as a request for action in accordance with 10 CFR 2.206. The petitioner shall file the petition with the Secretary of the Commission. Before the licensed activity allegedly affected by the petition (fuel loading, low power testing, etc.) commences, the Commission shall determine whether any immediate action is required. If the petition is granted, then an appropriate order will be issued. Fuel loading and operation under the combined license will not be affected by the granting of the petition unless the order is made immediately effective.

(g) The licensee shall not operate the facility until the Commission makes a finding that the acceptance criteria in the combined license are met, except for those acceptance criteria that the Commission found were met under § 52.97(a)(2). If the combined license is for a modular design, each reactor module may require a separate finding as construction proceeds.

(h) After the Commission has made the finding in paragraph (g) of this section, the ITAAC do not, by virtue of their inclusion in the combined license, constitute regulatory requirements either for licensees or for renewal of the license; except for the specific ITAAC for which the Commission has granted a hearing under paragraph (a) of this section, all ITAAC expire upon final Commission action in the proceeding. However, subsequent changes to the facility or procedures described in the final safety analysis report (as updated) must comply with the requirements in §§ 52.98(e) or (f), as applicable.

§ 52.104 Duration of combined license.

A combined license is issued for a specified period not to exceed 40 years from the date on which the Commission makes a finding that acceptance criteria are met under § 52.103(g) or allowing operation during an interim period under the combined license under § 52.103(c).

§ 52.105 Transfer of combined license.

A combined license may be transferred in accordance with § 50.80 of this chapter.

§ 52.107 Application for renewal.

The filing of an application for a renewed license must be in accordance with 10 CFR part 54.

§ 52.109 Continuation of combined license.

Each combined license for a facility that has permanently ceased operations, continues in effect beyond the expiration date to authorize ownership and possession of the production or utilization facility, until the Commission notifies the licensee in writing that the license is terminated. During this period of continued effectiveness the licensee shall—

(1) Take actions necessary to decommission and decontaminate the facility and continue to maintain the facility, including, where applicable, the storage, control and maintenance of the spent fuel, in a safe condition; and

(2) Conduct activities in accordance with all other restrictions applicable to the facility in accordance with the NRC's regulations and the provisions of the combined license for the facility.

§ 52.110 Termination of license.

(a)(1) When a licensee has determined to permanently cease operations the licensee shall, within 30 days, submit a written certification to the NRC, consistent with the requirements of § 52.3(b)(8);

(2) Once fuel has been permanently removed from the reactor vessel, the licensee shall submit a written certification to the NRC that meets the requirements of § 52.3(b)(9); and

(3) For licensees whose licenses have been permanently modified to allow possession but not operation of the facility, before September 27, 2007, the certification required in paragraph (a)(1) of this section shall be deemed to have been submitted.

(b) Upon docketing of the certifications for permanent cessation of operations and permanent removal of fuel from the reactor vessel, or when a final legally effective order to permanently cease operations has come into effect, the 10 CFR part 52 license no longer authorizes operation of the reactor or emplacement or retention of fuel into the reactor vessel.

(c) Decommissioning will be completed within 60 years of permanent cessation of operations. Completion of decommissioning beyond 60 years will be approved by the Commission only when necessary to protect public health and safety. Factors that will be considered by the Commission in evaluating an alternative that provides for completion of decommissioning beyond 60 years of permanent cessation of operations include unavailability of waste disposal capacity and other site-specific factors affecting the licensee's capability to carry out decommissioning, including presence of other nuclear facilities at the site.

(d)(1) Before or within 2 years following permanent cessation of operations, the licensee shall submit a post-shutdown decommissioning activities report (PSDAR) to the NRC, and a copy to the affected State(s). The report must include a description of the planned decommissioning activities along with a schedule for their accomplishment, an estimate of expected costs, and a discussion that provides the reasons for concluding that the environmental impacts associated with site-specific decommissioning activities will be bounded by appropriate previously issued environmental impact statements.

(2) The NRC shall notice receipt of the PSDAR and make the PSDAR available for public comment. The NRC shall also schedule a public meeting in the vicinity of the licensee's facility upon receipt of the PSDAR. The NRC shall publish a document in the FEDERAL REGISTER and in a forum, such as local newspapers, that is readily accessible to individuals in the vicinity of the site, announcing the date, time and location of the meeting, along with a brief description of the purpose of the meeting.

(e) Licensees shall not perform any major decommissioning activities, as defined in § 50.2 of this chapter, until 90 days after the NRC has received the licensee's PSDAR submittal and until certifications of permanent cessation of operations and permanent removal of fuel from the reactor vessel, as required under § 52.110(a)(1), have been submitted.

(f) Licensees shall not perform any decommissioning activities, as defined in § 52.1, that—

(1) Foreclose release of the site for possible unrestricted use;

(2) Result in significant environmental impacts not previously reviewed; or

(3) Result in there no longer being reasonable assurance that adequate funds will be available for decommissioning.

(g) In taking actions permitted under § 50.59 of this chapter following submittal of the PSDAR, the licensee shall notify the NRC in writing and send a copy to the affected State(s), before performing any decommissioning activity inconsistent with, or making any significant schedule change from, those actions and schedules described in the PSDAR, including changes that significantly increase the decommissioning cost.

(h)(1) Decommissioning trust funds may be used by licensees if—

(i) The withdrawals are for expenses for legitimate decommissioning activities consistent with the definition of decommissioning in § 52.1;

(ii) The expenditure would not reduce the value of the decommissioning trust below an amount necessary to place and maintain the reactor in a safe storage condition if unforeseen conditions or expenses arise and;

(iii) The withdrawals would not inhibit the ability of the licensee to complete funding of any shortfalls in the decommissioning trust needed to ensure the availability of funds to ultimately release the site and terminate the license.

(2) Initially, 3 percent of the generic amount specified in § 50.75 of this chapter may be used for decommissioning planning. For licensees that have submitted the certifications required under § 52.110(a) and commencing 90 days after the NRC has received the PSDAR, an additional 20 percent may be used. A site-specific decommissioning cost estimate must be submitted to the NRC before the licensee may use any funding in excess of these amounts.

(3) Within 2 years following permanent cessation of operations, if not already submitted, the licensee shall submit a site-specific decommissioning cost estimate.

(4) For decommissioning activities that delay completion of decommissioning by including a period of storage or surveillance, the licensee shall provide a means of adjusting cost estimates and associated funding levels over the storage or surveillance period.

(i) All power reactor licensees must submit an application for termination of license. The application for termination of license must be accompanied or preceded by a license termination plan to be submitted for NRC approval.

(1) The license termination plan must be a supplement to the FSAR or equivalent and must be submitted at least 2 years before termination of the license date.

(2) The license termination plan must include—

(i) A site characterization;

(ii) Identification of remaining dismantlement activities;

(iii) Plans for site remediation;

(iv) Detailed plans for the final radiation survey;

(v) A description of the end use of the site, if restricted;

(vi) An updated site-specific estimate of remaining decommissioning costs;

(vii) A supplement to the environmental report, under § 51.53 of this chapter, describing any new information or significant environmental change associated with the licensee's proposed termination activities; and

(viii) Identification of parts, if any, of the facility or site that were released for use before approval of the license termination plan.

(3) The NRC shall notice receipt of the license termination plan and make the license termination plan available for public comment. The NRC shall also schedule a public meeting in the vicinity of the licensee's facility upon receipt of the license termination plan. The NRC shall publish a document in the FEDERAL REGISTER and in a forum, such as local newspapers, which is readily accessible to individuals in the vicinity of the site, announcing the date, time and location of the meeting, along with a brief description of the purpose of the meeting.

(j) If the license termination plan demonstrates that the remainder of decommissioning activities will be performed in accordance with the regulations in this chapter, will not be inimical to the common defense and security or to the health and safety of the public, and will not have a significant effect on the quality of the environment and after notice to interested persons, the Commission shall approve the plan, by license amendment, subject to terms and conditions as it deems appropriate and necessary and authorize implementation of the license termination plan.

(k) The Commission shall terminate the license if it determines that—

(1) The remaining dismantlement has been performed in accordance with the approved license termination plan; and

(2) The final radiation survey and associated documentation, including an assessment of dose contributions associated with parts released for use before approval of the license termination plan, demonstrate that the facility and site have met the criteria for decommissioning in subpart E to 10 CFR part 20.

(l) For a facility that has permanently ceased operation before the expiration of its license, the collection period for any shortfall of funds will be determined, upon application by the licensee, on a case-by-case basis taking into account the specific financial situation of each licensee.

Subpart D [Reserved]

Subpart E—Standard Design Approvals

§ 52.131 Scope of subpart.

This subpart sets out procedures for the filing, NRC staff review, and referral to the Advisory Committee on Reactor Safeguards of standard designs for a nuclear power reactor of the type described in § 50.22 of this chapter or major portions thereof.

§ 52.133 Relationship to other subparts.

(a) This subpart applies to a person that requests a standard design approval from the NRC staff separately from an application for a construction permit filed under 10 CFR part 50 or a combined license filed under subpart C of this part. An applicant for a construction permit or combined license may reference a standard design approval.

(b) Subpart B of this part governs the certification by rulemaking of the design of a nuclear power plant. Subpart B may be used independently of the provisions in this subpart.

(c) Subpart F of this part governs the issuance of licenses to manufacture nuclear power reactors to be installed and operated at sites not identified in the manufacturing license application. Subpart F of this part may be used independently of the provisions in this subpart.

§ 52.135 Filing of applications.

(a) Any person may submit a proposed standard design for a nuclear power reactor of the type described in 10 CFR 50.22 to the NRC staff for its review. The submittal may consist of either the final design for the entire facility or the final design of major portions thereof.

(b) The submittal for review of the proposed standard design must be made in the same manner and in the same number of copies as provided in 10 CFR 50.30 and 52.3 for license applications.

(c) The fees associated with the filing and review of the application are set forth in 10 CFR part 170.

§ 52.136 Contents of applications; general information.

The application must contain all of the information required by 10 CFR 50.33(a) through (c) and (j).

[72 FR 49517, Aug. 28, 2007, as amended at 86 FR 67843, Nov. 30, 2021]

§ 52.137 Contents of applications; technical information.

If the applicant seeks review of a major portion of a standard design, the application need only contain the information required by this section to the extent the requirements are applicable to the major portion of the standard design for which NRC staff approval is sought.

(a) The application must contain a final safety analysis report that describes the facility, presents the design bases and the limits on its operation, and presents a safety analysis of the structures, systems, and components and of the facility, or major portion thereof, and must include the following information:

(1) The site parameters postulated for the design, and an analysis and evaluation of the design in terms of those site parameters;

(2) A description and analysis of the SSCs of the facility, with emphasis upon performance requirements, the bases, with technical justification, upon which the requirements have been established, and the evaluations required to show that safety functions will be accomplished. It is expected that the standard plant will reflect through its design, construction, and operation an extremely low probability for accidents that could result in the release of significant quantities of radioactive fission products. The description shall be sufficient to permit understanding of the system designs and their relationship to the safety evaluations. Items such as the reactor core, reactor coolant system, instrumentation and control systems, electrical systems, containment system, other engineered safety features, auxiliary and emergency systems, power conversion systems, radioactive waste handling systems, and fuel handling systems shall be discussed insofar as they are pertinent. The following power reactor design characteristics will be

taken into consideration by the Commission:

(i) Intended use of the reactor including the proposed maximum power level and the nature and inventory of contained radioactive materials;

(ii) The extent to which generally accepted engineering standards are applied to the design of the reactor;

(iii) The extent to which the reactor incorporates unique, unusual or enhanced safety features having a significant bearing on the probability or consequences of accidental release of radioactive materials; and

(iv) The safety features that are to be engineered into the facility and those barriers that must be breached as a result of an accident before a release of radioactive material to the environment can occur. Special attention must be directed to plant design features intended to mitigate the radiological consequences of accidents. In performing this assessment, an applicant shall assume a fission product release[9] from the core into the containment assuming that the facility is operated at the ultimate power level contemplated. The applicant shall perform an evaluation and analysis of the postulated fission product release, using the expected demonstrable containment leak rate and any fission product cleanup systems intended to mitigate the consequences of the accidents, together with applicable postulated site parameters, including site meteorology, to evaluate the offsite radiological consequences. The evaluation must determine that:

(A) An individual located at any point on the boundary of the exclusion area for any 2-hour period following the onset of the postulated fission product release, would not receive a radiation dose in excess of 25 rem[10] total effective dose equivalent (TEDE); and

(B) An individual located at any point on the outer boundary of the low population zone, who is exposed to the radioactive cloud resulting from the postulated fission product release (during the entire period of its passage) would not receive a radiation dose in excess of 25 rem TEDE;

(3) The design of the facility including:

(i) The principal design criteria for the facility. Appendix A to 10 CFR part 50, general design criteria (GDC), establishes minimum requirements for the principal design criteria for water-cooled nuclear power plants similar in design and location to plants for which construction permits have previously been issued by the Commission and provides guidance to applicants in establishing principal design criteria for other types of nuclear power units;

(ii) The design bases and the relation of the design bases to the principal design criteria; and

(iii) Information relative to materials of construction, general arrangement, and approximate dimensions, sufficient to provide reasonable assurance that the design will conform to the design bases with adequate margin for safety;

(4) An analysis and evaluation of the design and performance of SSC with the objective of assessing the risk to public health and safety resulting from operation of the facility and including determination of the margins of safety during normal operations and transient conditions anticipated during the life of the facility, and the adequacy of

[9] The fission product release assumed for this evaluation should be based upon a major accident, hypothesized for purposes of site analysis or postulated from considerations of possible accidental events. These accidents have generally been assumed to result in substantial meltdown of the core with subsequent release into the containment of appreciable quantities of fission products.

[10] A whole body dose of 25 rem has been stated to correspond numerically to the once in a lifetime accidental or emergency dose for radiation workers which, according to NCRP recommendations at the time could be disregarded in the determination of their radiation exposure status (see NBS Handbook 69 dated June 5, 1959). However, its use is not intended to imply that this number constitutes an acceptable limit for an emergency dose to the public under accident conditions. Rather, this dose value has been set forth in this section as a reference value, which can be used in the evaluation of plant design features with respect to postulated reactor accidents, to assure that these designs provide assurance of low risk of public exposure to radiation, in the event of an accident.

SSCs provided for the prevention of accidents and the mitigation of the consequences of accidents. Analysis and evaluation of ECCS cooling performance and the need for high-point vents following postulated loss-of-coolant accidents shall be performed in accordance with the requirements of 10 CFR 50.46 and 50.46a;

(5) The kinds and quantities of radioactive materials expected to be produced in the operation and the means for controlling and limiting radioactive effluents and radiation exposures within the limits set forth in part 20 of this chapter;

(6) The information required by § 20.1406 of this chapter;

(7) The technical qualifications of the applicant to engage in the proposed activities in accordance with the regulations in this chapter;

(8) The information necessary to demonstrate compliance with any technically relevant portions of the Three Mile Island requirements set forth in 10 CFR 50.34(f), except paragraphs (f)(1)(xii), (f)(2)(ix), and (f)(3)(v) of 10 CFR 50.34(f);

(9) For applications for light-water-cooled nuclear power plants, an evaluation of the standard plant design against the Standard Review Plan (SRP) revision in effect 6 months before the docket date of the application. The evaluation required by this section shall include an identification and description of all differences in design features, analytical techniques, and procedural measures proposed for the design and those corresponding features, techniques, and measures given in the SRP acceptance criteria. Where a difference exists, the evaluation shall discuss how the proposed alternative provides an acceptable method of complying with the Commission's regulations, or portions thereof, that underlie the corresponding SRP acceptance criteria. The SRP is not a substitute for the regulations, and compliance is not a requirement;

(10) The information with respect to the design of equipment to maintain control over radioactive materials in gaseous and liquid effluents produced during normal reactor operations described in 10 CFR 50.34a(e);

(11) The information pertaining to design features that affect plans for coping with emergencies in the operation of the reactor facility or a major portion thereof;

(12) An analysis and description of the equipment and systems for combustible gas control as required by § 50.44 of this chapter;

(13) The list of electric equipment important to safety that is required by 10 CFR 50.49(d);

(14) A description of protection provided against pressurized thermal shock events, including projected values of the reference temperature for reactor vessel beltline materials as defined in 10 CFR 50.60 and 50.61;

(15) Information demonstrating how the applicant will comply with requirements for reduction of risk from anticipated transients without scram (ATWS) events in § 50.62;

(16) The coping analysis, and any design features necessary to address station blackout, as described in § 50.63 of this chapter;

(17) Information demonstrating how the applicant will comply with requirements for criticality accidents in § 50.68(b)(2)–(b)(4);

(18) A description and analysis of the fire protection design features for the standard plant necessary to comply with part 50, appendix A, GDC 3, and § 50.48 of this chapter;

(19) A description of the quality assurance program applied to the design of the SSCs of the facility. Appendix B to 10 CFR part 50, ''Quality Assurance Criteria for Nuclear Power Plants and Fuel Reprocessing Plants,'' sets forth the requirements for quality assurance programs for nuclear power plants. The description of the quality assurance program for a nuclear power plant shall include a discussion of how the applicable requirements of appendix B to 10 CFR part 50 were satisfied;

(20) The information necessary to demonstrate that the standard plant complies with the earthquake engineering criteria in 10 CFR part 50, appendix S;

(21) Proposed technical resolutions of those Unresolved Safety Issues and medium- and high-priority generic safety issues which are identified in the version of NUREG–0933 current on

the date up to 6 months before the docket date of the application and which are technically relevant to the design;

(22) The information necessary to demonstrate how operating experience insights have been incorporated into the plant design;

(23) For light-water reactor designs, a description and analysis of design features for the prevention and mitigation of severe accidents, e.g., challenges to containment integrity caused by core-concrete interaction, steam explosion, high-pressure core melt ejection, hydrogen combustion, and containment bypass;

(24) A description, analysis, and evaluation of the interfaces between the standard design and the balance of the nuclear power plant; and

(25) A description of the design-specific probabilistic risk assessment and its results.

(26) For applications for standard design approvals which are subject to 10 CFR 50.150(a), the information required by 10 CFR 50.150(b).

(b) An application for approval of a standard design, which differs significantly from the light-water reactor designs of plants that have been licensed and in commercial operation before April 18, 1989, or uses simplified, inherent, passive, or other innovative means to accomplish its safety functions, must meet the requirements of 10 CFR 50.43(e).

[72 FR 49517, Aug. 28, 2007, as amended at 74 FR 28147, June 12, 2009]

§ 52.139 Standards for review of applications.

Applications filed under this subpart will be reviewed for compliance with the standards set out in 10 CFR parts 20, 50 and its appendices, and 10 CFR parts 73 and 100.

§ 52.141 Referral to the Advisory Committee on Reactor Safeguards (ACRS).

The Commission shall refer a copy of the application to the ACRS. The ACRS shall report on those portions of the application which concern safety.

§ 52.143 Staff approval of design.

Upon completion of its review of a submittal under this subpart and receipt of a report by the Advisory Committee on Reactor Safeguards under § 52.141 of this subpart, the NRC staff shall publish a determination in the FEDERAL REGISTER as to whether or not the design is acceptable, subject to appropriate terms and conditions, and make an analysis of the design in the form of a report available at the NRC Web site, *http://www.nrc.gov*.

§ 52.145 Finality of standard design approvals; information requests.

(a) An approved design must be used by and relied upon by the NRC staff and the ACRS in their review of any individual facility license application that incorporates by reference a standard design approved in accordance with this paragraph unless there exists significant new information that substantially affects the earlier determination or other good cause.

(b) The determination and report by the NRC staff do not constitute a commitment to issue a permit or license, or in any way affect the authority of the Commission, Atomic Safety and Licensing Board Panel, or presiding officers in any proceeding under part 2 of this chapter.

(c) Except for information requests seeking to verify compliance with the current licensing basis of the standard design approval, information requests to the holder of a standard design approval must be evaluated before issuance to ensure that the burden to be imposed on respondents is justified in view of the potential safety significance of the issue to be addressed in the requested information. Each evaluation performed by the NRC staff must be in accordance with 10 CFR 50.54(f) and must be approved by the Executive Director for Operations or his or her designee before issuance of the request.

§ 52.147 Duration of design approval.

A standard design approval issued under this subpart is valid for 15 years from the date of issuance and may not be renewed. A design approval continues to be valid beyond the date of

expiration in any proceeding on an application for a construction permit or an operating license under part 50 or a combined license or manufacturing license under part 52 that references the final design approval and is docketed before the date of expiration of the design approval.

Subpart F—Manufacturing Licenses

§ 52.151 Scope of subpart.

This subpart sets out the requirements and procedures applicable to Commission issuance of a license authorizing manufacture of nuclear power reactors to be installed at sites not identified in the manufacturing license application.

§ 52.153 Relationship to other subparts.

(a) A nuclear power reactor manufactured under a manufacturing license issued under this subpart may only be transported to and installed at a site for which either a construction permit under part 50 of this chapter or a combined license under subpart C of this part has been issued.

(b) Subpart B of this part governs the certification by rulemaking of the design of standard nuclear power facilities. Subpart E of this part governs the NRC staff review and approval of standard designs for a nuclear power facility. A manufacturing license applicant may reference a standard design certification or a standard design approval in its application. These subparts may also be used independently of the provisions in this subpart.

§ 52.155 Filing of applications.

(a) Any person, except one excluded by 10 CFR 50.38, may file an application for a manufacturing license under this subpart with the Director, Office of Nuclear Reactor Regulation.

(b) The application must comply with the applicable filing requirements of §§ 52.3 and 50.30 of this chapter.

(c) The fees associated with the filing and review of the application are set forth in 10 CFR part 170.

[72 FR 49517, Aug. 28, 2007, as amended at 84 FR 65645, Nov. 29, 2019]

§ 52.156 Contents of applications; general information.

The application must contain all of the information required by 10 CFR 50.33(a) through (d), and (j).

§ 52.157 Contents of applications; technical information in final safety analysis report.

The application must contain a final safety analysis report containing the information set forth below, with a level of design information sufficient to enable the Commission to judge the applicant's proposed means of assuring that the manufacturing conforms to the design and to reach a final conclusion on all safety questions associated with the design, permit the preparation of construction and installation specifications by an applicant who seeks to use the manufactured reactor, and permit the preparation of acceptance and inspection requirements by the NRC:

(a) The principal design criteria for the reactor to be manufactured. Appendix A of 10 CFR part 50, ''General Design Criteria for Nuclear Power Plants,'' establishes minimum requirements for the principal design criteria for water-cooled nuclear power plants similar in design and location to plants for which construction permits have previously been issued by the Commission and provides guidance to applicants in establishing principal design criteria for other types of nuclear power units;

(b) The design bases and the relation of the design bases to the principal design criteria;

(c) A description and analysis of the structures, systems, and components of the reactor to be manufactured, with emphasis upon the materials of manufacture, performance requirements, the bases, with technical justification therefor, upon which the performance requirements have been established, and the evaluations required to show that safety functions will be accomplished. The description shall be sufficient to permit understanding of the system designs and their relationship to safety evaluations. Items such as the reactor core, reactor coolant system, instrumentation and control systems, electrical systems, containment

system, other engineered safety features, auxiliary and emergency systems, power conversion systems, radioactive waste handling systems, and fuel handling systems shall be discussed insofar as they are pertinent. The following power reactor design characteristics will be taken into consideration by the Commission:

(1) Intended use of the manufactured reactor including the proposed maximum power level and the nature and inventory of contained radioactive materials;

(2) The extent to which generally accepted engineering standards are applied to the design of the reactor; and

(3) The extent to which the reactor incorporates unique, unusual or enhanced safety features having a significant bearing on the probability or consequences of accidental release of radioactive materials;

(d) The safety features that are engineered into the reactor and those barriers that must be breached as a result of an accident before a release of radioactive material to the environment can occur. Special attention must be directed to reactor design features intended to mitigate the radiological consequences of accidents. In performing this assessment, an applicant shall assume a fission product release[11] from the core into the containment assuming that the facility is operated at the ultimate power level contemplated. The applicant shall perform an evaluation and analysis of the postulated fission product release, using the expected demonstrable containment leak rate and any fission product cleanup systems intended to mitigate the consequences of the accidents, together with applicable postulated site parameters, including site meteorology, to evaluate the offsite radiological consequences. The evaluation must determine that:

(1) An individual located at any point on the boundary of the exclusion area for any 2 hour period following the onset of the postulated fission product release, would not receive a radiation dose in excess of 25 rem[12] total effective dose equivalent (TEDE);

(2) An individual located at any point on the outer boundary of the low population zone, who is exposed to the radioactive cloud resulting from the postulated fission product release (during the entire period of its passage) would not receive a radiation dose in excess of 25 rem TEDE; and

(e) The kinds and quantities of radioactive materials expected to be produced in the operation and the means for controlling and limiting radioactive effluents and radiation exposures within the limits set forth in part 20 of this chapter.

(f) Information necessary to establish that the design of the reactor to be manufactured complies with the technical requirements in 10 CFR Chapter I, including:

(1) An analysis and evaluation of the design and performance of structures, systems, and components with the objective of assessing the risk to public health and safety resulting from operation of the facility and including determination of the margins of safety during normal operations and transient conditions anticipated during the life of the facility, and the adequacy of structures, systems, and components provided for the prevention of accidents and the mitigation of the consequences of accidents. Analysis and

[11] The fission product release assumed for this evaluation should be based upon a major accident, hypothesized for purposes of site analysis or postulated from considerations of possible accidental events. These accidents have generally been assumed to result in substantial meltdown of the core with subsequent release into the containment of appreciable quantities of fission products.

[12] A whole body dose of 25 rem has been stated to correspond numerically to the once in a lifetime accidental or emergency dose for radiation workers which, according to NCRP recommendations at the time could be disregarded in the determination of their radiation exposure status (see NBS Handbook 69 dated June 5, 1959). However, its use is not intended to imply that this number constitutes an acceptable limit for an emergency dose to the public under accident conditions. Rather, this dose value has been set forth in this section as a reference value, which can be used in the evaluation of plant design features with respect to postulated reactor accidents, to assure that these designs provide assurance of low risk of public exposure to radiation, in the event of an accident.

evaluation of ECCS cooling performance and the need for high-point vents following postulated loss-of-coolant accidents shall be performed in accordance with the requirements of §§ 50.46 and 50.46a of this chapter;

(2) A description and analysis of the fire protection design features for the reactor necessary to comply with 10 CFR part 50, appendix A, GDC 3 and § 50.48 of this chapter;

(3) A description of protection provided against pressurized thermal shock events, including projected values of the reference temperature for reactor vessel beltline materials as defined in §§ 50.60 and 50.61 of this chapter;

(4) An analysis and description of the equipment and systems for combustible gas control as required by § 50.44 of this chapter;

(5) The coping analysis, and any design features necessary to address station blackout, as described in § 50.63 of this chapter;

(6) The list of electric equipment important to safety that is required by 10 CFR 50.49(d);

(7) Information demonstrating how the applicant will comply with requirements for reduction of risk from anticipated transients without scram (ATWS) events in § 50.62;

(8) Information demonstrating how the applicant will comply with requirements for criticality accidents in § 50.68(b)(2)–(b)(4);

(9) The information required by § 20.1406 of this chapter;

(10) [Reserved]

(11) The information with respect to the design of equipment to maintain control over radioactive materials in gaseous and liquid effluents produced during normal reactor operations, as described in § 50.34a(e) of this chapter;

(12) The information necessary to demonstrate compliance with any technically relevant portions of the Three Mile Island requirements set forth in § 50.34(f) of this chapter, except paragraphs (f)(1)(xii), (f)(2)(ix), and (f)(3)(v);

(13) If the applicant seeks to use risk-informed treatment of SSCs in accordance with § 50.69 of this chapter, the information required by § 50.69(b)(2) of this chapter;

(14) The information necessary to demonstrate that the manufactured reactor complies with the earthquake engineering criteria in appendix S to 10 CFR part 50;

(15) Information sufficient to demonstrate compliance with the applicable requirements regarding testing, analysis, and prototypes as set forth in § 50.43(e) of this chapter;

(16) The technical qualifications of the applicant to engage in the proposed activities in accordance with the regulations in this chapter;

(17) A description of the quality assurance program applied to the design, and to be applied to the manufacture of, the structures, systems, and components of the reactor. Appendix B to 10 CFR part 50, ''Quality Assurance Criteria for Nuclear Power Plants and Fuel Reprocessing Plants,'' sets forth the requirements for quality assurance programs for nuclear power plants. The description of the quality assurance program must include a discussion of how the applicable requirements of appendix B to 10 CFR part 50 have been and will be satisfied; and

(18) Proposed technical specifications applicable to the reactor being manufactured, prepared in accordance with the requirements of §§ 50.36 and 50.36a of this chapter;

(19) The site parameters postulated for the design, and an analysis and evaluation of the reactor design in terms of those site parameters;

(20) The interface requirements between the manufactured reactor and the remaining portions of the nuclear power plant. These requirements must be sufficiently detailed to allow for completion of the final safety analysis;

(21) Justification that compliance with the interface requirements of paragraph (f)(20) of this section is verifiable through inspections, testing, or analysis. The method to be used for verification of interface requirements must be included as part of the proposed ITAAC required by § 52.158(a);

(22) A representative conceptual design for a nuclear power facility using the manufactured reactor, to aid the NRC in its review of the final safety analysis required by this section and to permit assessment of the adequacy of

the interface requirements in paragraph (f)(20) of this section;

(23) For light-water reactor designs, a description and analysis of design features for the prevention and mitigation of severe accidents, e.g., challenges to containment integrity caused by core-concrete interaction, steam explosion, high-pressure core melt ejection, hydrogen combustion, and containment bypass;

(24) [Reserved]

(25) If the reactor is to be used in modular plant design, a description of the possible operating configurations of the reactor modules with common systems, interface requirements, and system interactions. The final safety analysis must also account for differences among the configurations, including any restrictions that will be necessary during the construction and startup of a given module to ensure the safe operation of any module already operating;

(26) A description of the management plan for design and manufacturing activities, including:

(i) The organizational and management structure singularly responsible for direction of design and manufacture of the reactor;

(ii) Technical resources directed by the applicant, and the qualifications requirements;

(iii) Details of the interaction of design and manufacture within the applicant's organization and the manner by which the applicant will ensure close integration of the architect engineer and the nuclear steam supply vendor, as applicable;

(iv) Proposed procedures governing the preparation of the manufactured reactor for shipping to the site where it is to be operated, the conduct of shipping, and verifying the condition of the manufactured reactor upon receipt at the site; and

(v) The degree of top level management oversight and technical control to be exercised by the applicant during design and manufacture, including the preparation and implementation of procedures necessary to guide the effort;

(27) Necessary parameters to be used in developing plans for preoperational testing and initial operation;

(28) Proposed technical resolutions of those Unresolved Safety Issues and medium- and high-priority generic safety issues which are identified in the version of NUREG–0933 current on the date up to 6 months before the docket date of the application and which are technically relevant to the design;

(29) The information necessary to demonstrate how operating experience insights have been incorporated into the manufactured reactor design;

(30) For applications for light-water-cooled nuclear power plants, an evaluation of the design to be manufactured against the Standard Review Plan (SRP) revision in effect 6 months before the docket date of the application. The evaluation required by this section shall include an identification and description of all differences in design features, analytical techniques, and procedural measures proposed for the design and those corresponding features, techniques, and measures given in the SRP acceptance criteria. Where a difference exists, the evaluation shall discuss how the proposed alternative provides an acceptable method of complying with the Commission's regulations, or portions thereof, that underlie the corresponding SRP acceptance criteria. The SRP is not a substitute for the regulations, and compliance is not a requirement; and

(31) A description of the design-specific probabilistic risk assessment and its results.

(32) For applications for manufacturing licenses which are subject to 10 CFR 50.150(a), the information required by 10 CFR 50.150(b).

[72 FR 49517, Aug. 28, 2007, as amended at 74 FR 28147, June 12, 2009]

§ 52.158 Contents of application; additional technical information.

The application must contain:

(a)(1) *Inspections, tests, analyses, and acceptance criteria (ITAAC).* The proposed inspections, tests, and analyses that the licensee who will be operating the reactor shall perform, and the acceptance criteria that are necessary and sufficient to provide reasonable assurance that, if the inspections, tests, and analyses are performed and the acceptance criteria met:

(i) The reactor has been manufactured in conformity with the manufacturing license; the provisions of the Act, and the Commission's rules and regulations; and

(ii) The manufactured reactor will be operated in conformity with the approved design and any license authorizing operation of the manufactured reactor.

(2) If the application references a standard design certification, the ITAAC contained in the certified design must apply to those portions of the facility design which are covered by the design certification.

(3) If the application references a standard design certification, the application may include a notification that a required inspection, test, or analysis in the design certification ITAAC has been successfully completed and that the corresponding acceptance criterion has been met. The FEDERAL REGISTER notification required by § 52.163 must indicate that the application includes this notification.

(b)(1) An environmental report as required by 10 CFR 51.54.

(2) If the manufacturing license application references a standard design certification, the environmental report need not contain a discussion of severe accident mitigation design alternatives for the reactor.

§ 52.159 Standards for review of application.

Applications filed under this subpart will be reviewed according to the applicable standards set out in 10 CFR parts 20, 50 and its appendices, 51, 73, and 100 and its appendices.

§ 52.161 [Reserved]

§ 52.163 Administrative review of applications; hearings.

A proceeding on a manufacturing license is subject to all applicable procedural requirements contained in 10 CFR part 2, including the requirements for docketing in § 2.101(a)(1) through (4) of this chapter, and the requirements for issuance of a notice of proposed action in § 2.105 of this chapter, *provided, however*, that the designated sections may not be construed to require that the environmental report or draft or final environmental impact statement include an assessment of the benefits of constructing and/or operating the manufactured reactor or an evaluation of alternative energy sources. All hearings on manufacturing licenses are governed by the hearing procedures contained in 10 CFR part 2, subparts C, E, G, L, and N.

[72 FR 49517, Aug. 28, 2007, as amended at 78 FR 34249, June 7, 2013]

§ 52.165 Referral to the Advisory Committee on Reactor Safeguards (ACRS).

The Commission shall refer a copy of the application to the ACRS. The ACRS shall report on those portions of the application which concern safety.

§ 52.167 Issuance of manufacturing license.

(a) After completing any hearing under § 52.163, and receiving the report submitted by the ACRS, the Commission may issue a manufacturing license if the Commission finds that:

(1) Applicable standards and requirements of the Act and the Commission's regulations have been met;

(2) There is reasonable assurance that the reactor(s) will be manufactured, and can be transported, incorporated into a nuclear power plant, and operated in conformity with the manufacturing license, the provision of the Act, and the Commission's regulations;

(3) The proposed reactor(s) can be incorporated into a nuclear power plant and operated at sites having characteristics that fall within the site parameters postulated for the design of the manufactured reactor(s) without undue risk to the health and safety of the public;

(4) The applicant is technically qualified to design and manufacture the proposed nuclear power reactor(s);

(5) The proposed inspections, tests, analyses and acceptance criteria are necessary and sufficient, within the scope of the manufacturing license, to provide reasonable assurance that the manufactured reactor has been manufactured and will be operated in conformity with the license, the provisions of the Act, and the Commission's regulations;

(6) The issuance of a license to the applicant will not be inimical to the common defense and security or to the health and safety of the public; and

(7) The findings required by subpart A of part 51 of this chapter have been made.

(b) Each manufacturing license issued under this subpart shall specify:

(1) Terms and conditions as the Commission deems necessary and appropriate;

(2) Technical specifications for operation of the manufactured reactor, as the Commission deems necessary and appropriate;

(3) Site parameters and design characteristics for the manufactured reactor; and

(4) The interface requirements to be met by the site-specific elements of the facility, such as the service water intake structure and the ultimate heat sink, not within the scope of the manufactured reactor.

(c)(1) A holder of a manufacturing license may not transport or allow to be removed from the place of manufacture the manufactured reactor except to the site of a licensee with either a construction permit under part 50 of this chapter or a combined license under subpart C of this part. The construction permit or combined license must authorize the construction of a nuclear power facility using the manufactured reactor(s).

(2) A holder of a manufacturing license shall include, in any contract governing the transport of a manufactured reactor from the place of manufacture to any other location, a provision requiring that the person or entity transporting the manufactured reactor to comply with all NRC-approved shipping requirements in the manufacturing license.

§ 52.169 [Reserved]

§ 52.171 Finality of manufacturing licenses; information requests.

(a)(1) Notwithstanding any provision in 10 CFR 50.109, during the term of a manufacturing license the Commission may not modify, rescind, or impose new requirements on the design of the nuclear power reactor being manufactured, or the requirements for the manufacture of the nuclear power reactor, unless the Commission determines that a modification is necessary to bring the design of the reactor or its manufacture into compliance with the Commission's requirements applicable and in effect at the time the manufacturing license was issued, or to provide reasonable assurance of adequate protection to public health and safety or common defense and security.

(2) Any modification to the design of a manufactured nuclear power reactor which is imposed by the Commission under paragraph (a)(1) of this section will be applied to all reactors manufactured under the license, including those that have already been transported and sited, except those reactors to which the modification has been rendered technically irrelevant by action taken under paragraph (b) of this section.

(3) In making the findings required for issuance of a construction permit, operating license, combined license, in any hearing under § 52.103, or in any enforcement hearing other than one initiated by the Commission under paragraph (a)(1) of this section, for which a nuclear power reactor manufactured under this subpart is referenced or used, the Commission shall treat as resolved those matters resolved in the proceeding on the application for issuance or renewal of the manufacturing license, including the adequacy of design of the manufactured reactor, the costs and benefits of severe accident mitigation design alternatives, and the bases for not incorporating severe accident mitigation design alternatives into the design of the reactor to be manufactured.

(b)(1) The holder of a manufacturing license may not make changes to the design of the nuclear power reactor authorized to be manufactured without prior Commission approval. The request for a change to the design must be in the form of an application for a license amendment, and must meet the requirements of 10 CFR 50.90 and 50.92.

(2) An applicant or licensee who references or uses a nuclear power reactor manufactured under a manufacturing license under this subpart may request

a departure from the design characteristics, site parameters, terms and conditions, or approved design of the manufactured reactor. The Commission may grant a request only if it determines that the departure will comply with the requirements of 10 CFR 52.7, and that the special circumstances outweigh any decrease in safety that may result from the reduction in standardization caused by the departure. The granting of a departure on request of an applicant is subject to litigation in the same manner as other issues in the construction permit or combined license hearing.

(c) Except for information requests seeking to verify compliance with the current licensing basis of either the manufacturing license or the manufactured reactor, information requests to the holder of a manufacturing license or an applicant or licensee using a manufactured reactor must be evaluated before issuance to ensure that the burden to be imposed on respondents is justified in view of the potential safety significance of the issue to be addressed in the requested information. Each evaluation performed by the NRC staff must be in accordance with 10 CFR 50.54(f) and must be approved by the Executive Director for Operations or his or her designee before issuance of the request.

§ 52.173 Duration of manufacturing license.

A manufacturing license issued under this subpart may be valid for not less than 5, nor more than 15 years from the date of issuance. A holder of a manufacturing license may not initiate the manufacture of a reactor less than 3 years before the expiration of the license even though a timely application for renewal has been docketed with the NRC. Upon expiration of the manufacturing license, the manufacture of any uncompleted reactors must cease unless a timely application for renewal has been docketed with the NRC.

§ 52.175 Transfer of manufacturing license.

A manufacturing license may be transferred in accordance with § 50.80 of this chapter.

§ 52.177 Application for renewal.

(a) Not less than 12 months, nor more than 5 years before the expiration of the manufacturing license, or any later renewal period, the holder of the manufacturing license may apply for a renewal of the license. An application for renewal must contain all information necessary to bring up to date the information and data contained in the previous application.

(b) The filing of an application for a renewed license must be in accordance with subpart A of 10 CFR part 2 and 10 CFR 52.3 and 50.30.

(c) A manufacturing license, either original or renewed, for which a timely application for renewal has been filed, remains in effect until the Commission has made a final determination on the renewal application, *provided, however,* that in accordance with § 52.173, the holder of a manufacturing license may not begin manufacture of a reactor less than 3 years before the expiration of the license.

(d) Any person whose interest may be affected by renewal of the permit may request a hearing on the application for renewal. The request for a hearing must comply with 10 CFR 2.309. If a hearing is granted, notice of the hearing will be published in accordance with 10 CFR 2.104.

(e) The Commission shall refer a copy of the application for renewal to the Advisory Committee on Reactor Safeguards (ACRS). The ACRS shall report on those portions of the application which concern safety and shall apply the criteria set forth in § 52.159.

§ 52.179 Criteria for renewal.

The Commission may grant the renewal if the Commission determines:

(a) The manufacturing license complies with the Atomic Energy Act and the Commission's regulations and orders applicable and in effect at the time the manufacturing license was originally issued; and

(b) Any new requirements the Commission may wish to impose are:

(1) Necessary for adequate protection to public health and safety or common defense and security;

(2) Necessary for compliance with the Commission's regulations and orders applicable and in effect at the time the

manufacturing license was originally issued; or

(3) A substantial increase in overall protection of the public health and safety or the common defense and security to be derived from the new requirements, and the direct and indirect costs of implementation of those requirements are justified in view of this increased protection.

§ 52.181 Duration of renewal.

A renewed manufacturing license may be issued for a term of not less than 5, nor more than 15 years, plus any remaining years on the manufacturing license then in effect before renewal. The renewed license shall be subject to the requirements of §§ 52.171 and 52.175.

Subpart G [Reserved]

Subpart H—Enforcement

§ 52.301 Violations.

(a) The Commission may obtain an injunction or other court order to prevent a violation of the provisions of—

(1) The Atomic Energy Act of 1954, as amended;

(2) Title II of the Energy Reorganization Act of 1974, as amended; or

(3) A regulation or order issued under those Acts.

(b) The Commission may obtain a court order for the payment of a civil penalty imposed under Section 234 of the Atomic Energy Act:

(1) For violations of—

(i) Sections 53, 57, 62, 63, 81, 82, 101, 103, 104, 107, or 109 of the Atomic Energy Act of 1954, as amended;

(ii) Section 206 of the Energy Reorganization Act;

(iii) Any regulation, or order issued under the sections specified in paragraph (b)(1)(i) of this section;

(iv) Any term, condition, or limitation of any license issued under the sections specified in paragraph (b)(1)(i) of this section.

(2) For any violation for which a license may be revoked under Section 186 of the Atomic Energy Act of 1954, as amended.

§ 52.303 Criminal penalties.

(a) Section 223 of the Atomic Energy Act of 1954, as amended, provides for criminal sanctions for willful violation of, attempted violation of, or conspiracy to violate, any regulation issued under Sections 161b, 161i, or 161o of the Act. For purposes of Section 223, all the regulations in part 52 are issued under one or more of Sections 161b, 161i, or 160o, except for the sections listed in paragraph (b) of this section.

(b) The regulations in part 52 that are not issued under Sections 161b, 161i, or 161o for the purposes of Section 223 are as follows: §§ 52.0, 52.1, 52.2, 52.3, 52.7, 52.8, 52.9, 52.10, 52.11, 52.12, 52.13, 52.15, 52.16, 52.17, 52.18, 52.21, 52.23, 52.24, 52.26 52.28, 52.29, 52.31, 52.33, 52.39, 52.41, 52.43, 52.45, 52.46, 52.47, 52.48, 52.51, 52.53, 52.54, 52.55, 52.57, 52.59, 52.61, 52.63, 52.71, 52.73, 52.75, 52.77, 52.79, 52.80, 52.81, 52.83, 52.85, 52.87, 52.93, 52.97, 52.98, 52.103, 52.104, 52.105, 52.107, 52.109, 52.131, 52.133, 52.135, 52.136, 52.137, 52.139, 52.141, 52.143, 52.145, 52.147, 52.151, 52.153, 52.155, 52.156, 52.157, 52.158, 52.159, 52.161, 52.163, 52.165, 52.167, 52.171, 52.173, 52.175, 52.177, 52.179, 52.181, 52.301, and 52.303.

[72 FR 49517, Aug. 28, 2007, as amended at 85 FR 65663, Oct. 16, 2020]

APPENDIX A TO PART 52—DESIGN CERTIFICATION RULE FOR THE U.S. ADVANCED BOILING WATER REACTOR

I. INTRODUCTION

Appendix A constitutes the renewed standard design certification for the U.S. Advanced Boiling Water Reactor (U.S. ABWR) design, in accordance with 10 CFR part 52, subpart B. The applicant for certification of the U.S. ABWR design is General Electric-Hitachi Nuclear Energy Americas, LLC (GEH).

II. DEFINITIONS

A. *Generic design control document (generic DCD)* means the document containing the Tier 1 and Tier 2 information and generic technical specifications that is incorporated by reference into this appendix.

B. *Generic technical specifications (generic TS)* means the information required by §§ 50.36 and 50.36a of this chapter for the portion of the plant that is within the scope of this appendix.

C. *Plant-specific DCD* means that portion of the combined license (COL) final safety analysis report (FSAR) that sets forth both the

generic DCD information and any plant-specific changes to generic DCD information.

D. *Tier 1* means the portion of the design-related information contained in the generic DCD that is approved and certified by this appendix (Tier 1 information). The design descriptions, interface requirements, and site parameters are derived from Tier 2 information. Tier 1 information includes:

1. Definitions and general provisions;
2. Design descriptions;
3. Inspections, tests, analyses, and acceptance criteria (ITAAC);
4. Significant site parameters; and
5. Significant interface requirements.

E. *Tier 2* means the portion of the design-related information contained in the generic DCD that is approved but not certified by this appendix (Tier 2 information). Compliance with Tier 2 is required, but generic changes to and plant-specific departures from Tier 2 are governed by Section VIII of this appendix. Compliance with Tier 2 provides a sufficient, but not the only acceptable, method for complying with Tier 1. Compliance methods differing from Tier 2 must satisfy the change process in Section VIII of this appendix. Regardless of these differences, an applicant or licensee must meet the requirement in paragraph III.B of this appendix to reference Tier 2 when referencing Tier 1. Tier 2 information includes:

1. Information required by § 52.47(a) and (c), with the exception of generic TS and conceptual design information;
2. Supporting information on the inspections, tests, and analyses that will be performed to demonstrate that the acceptance criteria in the ITAAC have been met; and
3. COL action items (COL license information), which identify certain matters that must be addressed in the site-specific portion of the FSAR by an applicant who references this appendix. These items constitute information requirements but are not the only acceptable set of information in the FSAR. An applicant may depart from or omit these items, provided that the departure or omission is identified and justified in the FSAR. After issuance of a COL, these items are not requirements for the licensee unless such items are restated in the FSAR.

F. *Tier 2** means the portion of the Tier 2 information, designated as such in the generic DCD, which is subject to the change process in paragraph VIII.B.6 of this appendix. This designation expires for some Tier 2* information under paragraph VIII.B.6 of this appendix.

G. *Departure from a method of evaluation described in the plant-specific DCD used in establishing the design bases or in the safety analyses* means:

1. Changing any of the elements of the method described in the plant-specific DCD unless the results of the analysis are conservative or essentially the same; or
2. Changing from a method described in the plant-specific DCD to another method unless that method has been approved by the NRC for the intended application.

H. All other terms in this appendix have the meaning set out in § 50.2 of this chapter, § 52.1, or Section 11 of the Atomic Energy Act of 1954, as amended, as applicable.

III. Scope and Contents

A. Incorporation by reference approval. The ABWR material identified in paragraph III.A.1 of this section is approved for incorporation by reference by the Director of the Office of the Federal Register under 5 U.S.C. 552(a) and 1 CFR part 51. You may obtain copies of the generic DCD, including the generic technical specifications, and the two GEH technical reports (NEDO–33875 and NEDO–33878) from Michelle Catts, Senior Vice President, Regulatory Affairs, General Electric-Hitachi Nuclear Energy Americas, LLC, 3901 Castle Hayne Road, P.O. Box 780, M/C A10, Wilmington, NC 28402. You can view the generic DCD, including the generic technical specifications, and the two GEH technical reports (NEDO–33875 and NEDO–33878) online in the NRC Library at *https://www.nrc.gov/reading-rm/adams.html*. In ADAMS, search under ADAMS Accession No. ML20093K254 to obtain the generic DCD, ADAMS Accession No. ML17059C523 to obtain GEH technical report NEDO–33875, and ADAMS Accession No. ML18092A306 to obtain GEH technical report NEDO–33878. If you do not have access to ADAMS or if you have problems accessing documents located in ADAMS, contact the NRC's Public Document Room (PDR) reference staff at 1–800–397–4209, at 301–415–3747, or by email at *PDR.Resource@nrc.gov*. Copies of the ABWR materials are available in the ADAMS Public Documents Collection. All approved material is available for inspection at the National Archives and Records Administration (NARA). For information on the availability of this material at NARA, email *fedreg.legal@nara.gov* or go to *www.archives.gov/federal-register/cfr/ibr-locations.html*.

1. General Electric-Hitachi Nuclear Energy Americas, LLC

a. ABWR Design Control Document Tier 1 (25A5675AA), Revision 7 (October 2019).

b. ABWR Design Control Document Tier 2 (25A5675AB), Revision 7 (October 2019).

c. Technical Report NEDO–33875, ABWR US Certified Design—Aircraft Impact Assessment, Licensing Basis Information and Design Details for Key Design Features, Rev. 3 (M170049) (February 2017).

d. Licensing Technical Report NEDO–33878, ABWR ECCS Suction Strainer Evaluation of Long-Term Recirculation Capability, Rev. 3 (M180068) (March 2018).

B. An applicant or licensee referencing this appendix, in accordance with Section IV of

this appendix, shall incorporate by reference and comply with the requirements of this appendix except as otherwise provided in this appendix. Conceptual design information, as set forth in the generic DCD, the ''Technical Support Document for the ABWR,'' and the ''Amendment to Technical Support Document for the ABWR,'' are not part of this appendix. Tier 2 references to the probabilistic risk assessment (PRA) in the U.S. ABWR DCD Tier 2 Chapter 19 do not incorporate the PRA into Tier 2.

C. If there is a conflict between Tier 1 and Tier 2 of the DCD, then Tier 1 controls.

D. If there is a conflict between the generic DCD and either the application for the design certification renewal of the U.S. ABWR design or the NUREG–1503, ''Final Safety Evaluation Report Related to Certification of the ABWR Standard Design''; NUREG–1503, Supplement 1; and NUREG–1503, Supplement 2, then the generic DCD controls.

E. Design activities for structures, systems, and components that are wholly outside the scope of this appendix may be performed using site characteristics, provided the design activities do not affect the DCD or conflict with the interface requirements.

IV. Additional Requirements and Restrictions

A. An applicant for a COL that wishes to reference this appendix shall, in addition to complying with the requirements of §§ 52.77, 52.79, and 52.80, comply with the following requirements:

1. Incorporate by reference, as part of its application, this appendix.

2. Include, as part of its application:

a. A plant-specific DCD containing the same type of information and using the same organization and numbering as the generic DCD for the U.S. ABWR design, either by including or incorporating by reference the generic DCD information, and as modified and supplemented by the applicant's exemptions and departures;

b. The reports on departures from and updates to the plant-specific DCD required by paragraph X.B of this appendix;

c. Plant-specific TS, consisting of the generic and site-specific TS that are required by §§ 50.36 and 50.36a of this chapter;

d. Information demonstrating that the site characteristics fall within the site parameters and that the interface requirements have been met;

e. Information that addresses the COL action items; and

f. Information required by § 52.47(a) that is not within the scope of this appendix.

3. Include, in the plant-specific DCD, the sensitive, unclassified, non-safeguards information (including proprietary information and security-related information) and safeguards information referenced in the U.S. ABWR generic DCD.

4. Include, as part of its application, a demonstration that an entity other than GEH is qualified to supply the U.S. ABWR design, unless GEH supplies the design for the applicant's use.

B. The Commission reserves the right to determine in what manner this appendix may be referenced by an applicant for a construction permit or operating license under 10 CFR part 50.

V. Applicable Regulations

A.1. Except as indicated in paragraphs A.2 and A.3 and B of this section, the regulations that apply to the U.S. ABWR design are in 10 CFR parts 20, 50, 52, 73, and 100, codified as of May 2, 1997, that are applicable and technically relevant, as described in the final safety evaluation report (NUREG–1503); NUREG–1503, Supplement 1; and as described in NUREG–1503, Supplement 2, for renewal modifications except as it pertains to addressing compliance with § 50.150 of this chapter.

2. Except as indicated in paragraphs A.1 and A.3 and B of this section, the regulations that apply to the U.S. ABWR design are in 10 CFR parts 20, 50, 52, 73, and 100, codified as of September 29, 2021, that are applicable and technically relevant, as described in NUREG–1503, Supplement 2, for renewal amendments.

3. Except as indicated in paragraphs A.1 and A.2 and B of this section, the regulations in § 50.150 of this chapter, codified as of September 29, 2021, apply to the U.S. ABWR design, that are applicable and technically relevant, as described in NUREG–1503, Supplement 2.

B. The U.S. ABWR design is exempt from portions of the following regulations:

1. Paragraph (f)(2)(iv) of 10 CFR 50.34—Plant Safety Parameter Display Console—codified as of May 2, 1997;

2. Paragraph (f)(2)(viii) of 10 CFR 50.34—Post-Accident Sampling for Boron, Chloride, and Dissolved Gases—codified as of May 2, 1997; and

3. Paragraph (f)(3)(iv) of 10 CFR 50.34—Dedicated Containment Penetration—codified as of May 2, 1997.

VI. Issue Resolution

A. The Commission has determined that the structures, systems, and components and design features of the U.S. ABWR design comply with the provisions of the Atomic Energy Act of 1954, as amended, and the applicable regulations identified in Section V of this appendix; and therefore, provide adequate protection to the health and safety of the public. A conclusion that a matter is resolved includes the finding that additional or

alternative structures, systems, and components, design features, design criteria, testing, analyses, acceptance criteria, or justifications are not necessary for the U.S. ABWR design.

B. The Commission considers the following matters resolved within the meaning of § 52.63(a)(5) in subsequent proceedings for issuance of a COL, amendment of a COL, or renewal of a COL, proceedings held under § 52.103, and enforcement proceedings involving plants referencing this appendix:

1. All nuclear safety issues associated with the information in the final safety evaluation reports (NUREG–1503; NUREG–1503, Supplement 1; and NUREG–1503, Supplement 2), Tier 1, Tier 2, and the rulemaking records for original certification and renewal of the U.S. ABWR design, with the exception of generic TS and other operational requirements;

2. All nuclear safety and safeguards issues associated with the referenced information in the 85 public and non-public documents in Tables 1.6–1 and 1.6–2 of Tier 2 of the generic DCD, or other referenced documents, which, in context, are intended as requirements in the generic DCD for the U.S. ABWR design;

3. All generic changes to the DCD under and in compliance with the change processes in paragraphs VIII.A.1 and VIII.B.1 of this appendix;

4. All exemptions from the DCD under and in compliance with the change processes in paragraphs VIII.A.4 and VIII.B.4 of this appendix, but only for that plant;

5. All departures from the DCD that are approved by license amendment, but only for that plant;

6. Except as provided in paragraph VIII.B.5.f of this appendix, all departures from Tier 2 under and in compliance with the change processes in paragraph VIII.B.5 of this appendix that do not require prior NRC approval, but only for that plant; and

7. All environmental issues concerning severe accident mitigation design alternatives associated with the information in the NRC's environmental assessment for the U.S. ABWR design (ADAMS Accession No. ML21147A381) and GEH's supplemental evaluation of various severe accident mitigation design alternatives to prevent and mitigate severe accidents in ''Amendment to Technical Support Document for the ABWR'' (ADAMS Accession No. ML110040178), which updates information in the original ''Technical Support Document for the ABWR'' (ADAMS Accession No. ML100210563) for plants referencing this appendix whose averted risk person-rem value for each severe accident mitigation design alternative is less than or equal to the averted risk person-rem value for that severe accident mitigation design alternative provided in Table 5 of the original technical support document.

C. The Commission does not consider operational requirements for an applicant or licensee who references this appendix to be matters resolved within the meaning of § 52.63(a)(5). The Commission reserves the right to require operational requirements for an applicant or licensee who references this appendix by rule, regulation, order, or license condition.

D. Except under the change processes in Section VIII of this appendix, the Commission may not require an applicant or licensee who references this appendix to:

1. Modify structures, systems, components, or design features as described in the generic DCD;

2. Provide additional or alternative structures, systems, components, or design features not discussed in the generic DCD; or

3. Provide additional or alternative design criteria, testing, analyses, acceptance criteria, or justification for structures, systems, components, or design features discussed in the generic DCD.

E. The NRC will specify, at an appropriate time, the procedures to be used by an interested person who wishes to review portions of the DC or references containing safeguards information or sensitive unclassified non-safeguards information (including proprietary information, such as trade secrets and commercial or financial information obtained from a person that are privileged or confidential (§ 2.390 of this chapter and 10 CFR part 9), and security-related information), for the purpose of participating in the hearing required by § 52.85, the hearing provided under § 52.103, or in any other proceeding relating to this appendix, in which interested persons have a right to request an adjudicatory hearing.

VII. Duration of this Appendix

This appendix may be referenced for a period of 15 years from September 29, 2021, except as provided for in §§ 52.55(b) and 52.57(b). This appendix remains valid for an applicant or licensee who references this appendix until the application is withdrawn, or the license expires or is terminated by the NRC, including any period of extended operation under a renewed license.

VIII. Processes for Changes and Departures

A. Tier 1 Information

1. Generic changes to Tier 1 information are governed by the requirements in § 52.63(a)(1).

2. Generic changes to Tier 1 information are applicable to all applicants or licensees who reference this appendix, except those for which the change has been rendered technically irrelevant by action taken under paragraph A.3 or A.4 of this section.

3. Departures from Tier 1 information that are required by the Commission through

plant-specific orders are governed by the requirements in § 52.63(a)(4).

4. Exemptions from Tier 1 information are governed by the requirements in §§ 52.63(b)(1) and 52.98(f). The Commission will deny a request for an exemption from Tier 1, if it finds that the design change will result in a significant decrease in the level of safety otherwise provided by the design.

B. Tier 2 Information

1. Generic changes to Tier 2 information are governed by the requirements in § 52.63(a)(1).

2. Generic changes to Tier 2 information are applicable to all applicants or licensees who reference this appendix, except those for which the change has been rendered technically irrelevant by action taken under paragraph B.3, B.4, or B.5, of this section.

3. The Commission may not require new requirements on Tier 2 information by plant-specific order, while this appendix is in effect under § 52.55 or § 52.61, unless:

a. A modification is necessary to secure compliance with the Commission's regulations applicable and in effect at the time this appendix was approved, as set forth in Section V of this appendix, or to ensure adequate protection of the public health and safety or the common defense and security; and

b. Special circumstances as defined in § 50.12(a) of this chapter are present.

4. An applicant or licensee who references this appendix may request an exemption from Tier 2 information. The Commission may grant such a request only if it determines that the exemption will comply with the requirements of § 50.12(a) of this chapter. The Commission will deny a request for an exemption from Tier 2, if it finds that the design change will result in a significant decrease in the level of safety otherwise provided by the design. The granting of an exemption to an applicant must be subject to litigation in the same manner as other issues material to the license hearing. The granting of an exemption to a licensee must be subject to an opportunity for a hearing in the same manner as license amendments.

5.a. An applicant or licensee who references this appendix may depart from Tier 2 information, without prior NRC approval, unless the proposed departure involves a change to or departure from Tier 1 information, Tier 2* information, or the TS, or requires a license amendment under paragraph B.5.b or B.5.c of this section. When evaluating the proposed departure, an applicant or licensee shall consider all matters described in the plant-specific DCD.

b. A proposed departure from Tier 2, other than one affecting resolution of a severe accident issue identified in the plant-specific DCD or one affecting information required by § 52.47(a)(28) to address aircraft impacts, requires a license amendment if it would:

(1) Result in more than a minimal increase in the frequency of occurrence of an accident previously evaluated in the plant-specific DCD;

(2) Result in more than a minimal increase in the likelihood of occurrence of a malfunction of a structure, system, or component important to safety and previously evaluated in the plant-specific DCD;

(3) Result in more than a minimal increase in the consequences of an accident previously evaluated in the plant-specific DCD;

(4) Result in more than a minimal increase in the consequences of a malfunction of a structure, system, or component important to safety previously evaluated in the plant-specific DCD;

(5) Create a possibility for an accident of a different type than any evaluated previously in the plant-specific DCD;

(6) Create a possibility for a malfunction of a structure, system, or component important to safety with a different result than any evaluated previously in the plant-specific DCD;

(7) Result in a design-basis limit for a fission product barrier as described in the plant-specific DCD being exceeded or altered; or

(8) Result in a departure from a method of evaluation described in the plant-specific DCD used in establishing the design bases or in the safety analyses.

c. A proposed departure from Tier 2, affecting resolution of an ex-vessel severe accident design feature identified in the plant-specific DCD, requires a license amendment if:

(1) There is a substantial increase in the probability of an ex-vessel severe accident such that a particular ex-vessel severe accident previously reviewed and determined to be not credible could become credible; or

(2) There is a substantial increase in the consequences to the public of a particular ex-vessel severe accident previously reviewed.

d. A proposed departure from Tier 2 information required by § 52.47(a)(28) to address aircraft impacts shall consider the effect of the changed design feature or functional capability on the original aircraft impact assessment required by § 50.150(a) of this chapter. The applicant or licensee shall describe, in the plant-specific DCD, how the modified design features and functional capabilities continue to meet the aircraft impact assessment requirements in § 50.150(a)(1) of this chapter.

e. If a departure requires a license amendment under paragraph B.5.b or B.5.c of this section, it is governed by § 50.90 of this chapter.

f. A departure from Tier 2 information that is made under paragraph B.5 of this section does not require an exemption from this appendix.

g. A party to an adjudicatory proceeding for either the issuance, amendment, or renewal of a license or for operation under §52.103(a), who believes that an applicant or licensee who references this appendix has not complied with paragraph VIII.B.5 of this appendix when departing from Tier 2 information, may petition to admit into the proceeding such a contention. In addition to complying with the general requirements of §2.309 of this chapter, the petition must demonstrate that the departure does not comply with paragraph VIII.B.5 of this appendix. Further, the petition must demonstrate that the change bears on an asserted noncompliance with an ITAAC acceptance criterion in the case of a §52.103 preoperational hearing, or that the change bears directly on the amendment request in the case of a hearing on a license amendment. Any other party may file a response. If, on the basis of the petition and any response, the presiding officer determines that a sufficient showing has been made, the presiding officer shall certify the matter directly to the Commission for determination of the admissibility of the contention. The Commission may admit such a contention if it determines the petition raises a genuine issue of material fact regarding compliance with paragraph VIII.B.5 of this appendix.

6.a. An applicant who references this appendix may not depart from Tier 2* information, which is designated with brackets, italicized text, and an asterisk in the generic DCD, without NRC approval. The departure will not be considered a resolved issue, within the meaning of Section VI of this appendix and §52.63(a)(5).

b. A licensee who references this appendix may not depart from the following Tier 2* matters without prior NRC approval. A request for a departure will be treated as a request for a license amendment under 10 CFR 50.90.

(1) Fuel burnup limit (4.2).

(2) Fuel design evaluation (4.2.3).

(3) Fuel licensing acceptance criteria (Appendix 4B).

c. A licensee who references this appendix may not, before the plant first achieves full power following the finding required by 10 CFR 52.103(g), depart from the following Tier 2* matters except in accordance with paragraph B.6.b of this section. After the plant first achieves full power, the following Tier 2* matters revert to Tier 2 status and are thereafter subject to the departure provisions in paragraph B.5 of this section.

(1) ASME Boiler & Pressure Vessel Code, Section III.

(2) ACI 349 and ANSI/AISC N–690.

(3) Motor-operated valves.

(4) Equipment seismic qualification methods.

(5) Piping design acceptance criteria.

(6) Fuel system and assembly design (4.2), except burnup limit.

(7) Nuclear design (4.3).

(8) Equilibrium cycle and control rod patterns (Appendix 4A).

(9) Control rod licensing acceptance criteria (Appendix 4C).

(10) Instrument setpoint methodology.

(11) EMS performance specifications and architecture.

(12) SSLC hardware and software qualification.

(13) Self-test system design testing features and commitments.

(14) Human factors engineering design and implementation process.

d. Departures from Tier 2* information that are made under paragraph B.6 of this section do not require an exemption from this appendix.

C. Operational Requirements

1. Changes to U.S. ABWR DC generic TS and other operational requirements that were completely reviewed and approved in the design certification rulemaking and do not require a change to a design feature in the generic DCD are governed by the requirements in §50.109 of this chapter. Changes that require a change to a design feature in the generic DCD are governed by the requirements in paragraph A or B of this section.

2. Changes to U.S. ABWR DC generic TS and other operational requirements are applicable to all applicants who reference this appendix, except those for which the change has been rendered technically irrelevant by action taken under paragraph C.3 or C.4 of this section.

3. The Commission may require plant-specific departures on generic TS and other operational requirements that were completely reviewed and approved, provided a change to a design feature in the generic DCD is not required and special circumstances, as defined in §2.335 of this chapter are present. The Commission may modify or supplement generic TS and other operational requirements that were not completely reviewed and approved or require additional TS and other operational requirements on a plant-specific basis, provided a change to a design feature in the generic DCD is not required.

4. An applicant who references this appendix may request an exemption from the generic TS or other operational requirements. The Commission may grant such a request only if it determines that the exemption will comply with the requirements of §52.7. The granting of an exemption must be subject to litigation in the same manner as other issues material to the license hearing.

5. A party to an adjudicatory proceeding for the issuance, amendment, or renewal of a license, or for operation under §52.103(a), who

believes that an operational requirement approved in the DCD or a TS derived from the generic TS must be changed, may petition to admit such a contention into the proceeding. The petition must comply with the general requirements of § 2.309 of this chapter and must either demonstrate why special circumstances as defined in § 2.335 of this chapter are present or demonstrate that the proposed change is necessary for compliance with the Commission's regulations applicable and in effect, as set forth in Section V of this appendix. Any other party may file a response to the petition. If, on the basis of the petition and any response, the presiding officer determines that a sufficient showing has been made, the presiding officer shall certify the matter directly to the Commission for determination of the admissibility of the contention. All other issues with respect to the plant-specific TS or other operational requirements are subject to a hearing as part of the licensing proceeding.

6. After issuance of a license, the generic TS have no further effect on the plant-specific TS. Changes to the plant-specific TS will be treated as license amendments under § 50.90 of this chapter.

IX. [RESERVED]

X. RECORDS AND REPORTING

A. Records

1. The applicant for this appendix shall maintain a copy of the generic DCD that includes all generic changes that are made to Tier 1 and Tier 2, and the generic TS and other operational requirements. The applicant shall maintain the sensitive unclassified non-safeguards information (including proprietary information and security-related information) and safeguards information referenced in the generic DCD for the period that this appendix may be referenced, as specified in Section VII of this appendix.

2. An applicant or licensee who references this appendix shall maintain the plant-specific DCD to accurately reflect both generic changes to the generic DCD and plant-specific departures made under Section VIII of this appendix throughout the period of application and for the term of the license (including any periods of renewal).

3. An applicant or licensee who references this appendix shall prepare and maintain written evaluations which provide the bases for the determinations required by Section VIII of this appendix. These evaluations must be retained throughout the period of application and for the term of the license (including any periods of renewal).

4.a. The applicant for the U.S. ABWR design shall maintain a copy of the aircraft impact assessment performed to comply with the requirements of § 50.150(a) of this chapter for the term of the certification (including any periods of renewal).

b. An applicant or licensee who references this appendix shall maintain a copy of the aircraft impact assessment performed to comply with the requirements of § 50.150(a) of this chapter throughout the pendency of the application and for the term of the license (including any periods of renewal).

B. Reporting

1. An applicant or licensee who references this appendix shall submit a report to the NRC containing a brief description of any plant-specific departures from the DCD, including a summary of the evaluation of each departure. This report must be filed in accordance with the filing requirements applicable to reports in § 52.3.

2. An applicant or licensee who references this appendix shall submit updates to its plant-specific DCD, which reflect the generic changes to and plant-specific departures from the generic DCD made under Section VIII of this appendix. These updates shall be filed under the filing requirements applicable to final safety analysis report updates in §§ 50.71(e) of this chapter and 52.3.

3. The reports and updates required by paragraphs X.B.1 and X.B.2 of this appendix must be submitted as follows:

a. On the date that an application for a license referencing this appendix is submitted, the application must include the report and any updates to the generic DCD.

b. During the interval from the date of application for a license to the date the Commission makes its finding required by § 52.103(g) of this chapter, the report must be submitted semi-annually. Updates to the plant-specific DCD must be submitted annually and may be submitted along with amendments to the application.

c. After the Commission makes the finding required by § 52.103(g), the reports and updates to the plant-specific DCD must be submitted, along with updates to the site-specific portion of the final safety analysis report for the facility, at the intervals required by §§ 50.59(d)(2) and 50.71(e)(4) of this chapter, respectively, or at shorter intervals as specified in the license.

[86 FR 34932, July 1, 2021]

APPENDIX B TO PART 52—DESIGN CERTIFICATION RULE FOR THE SYSTEM 80 + DESIGN

I. INTRODUCTION

Appendix B constitutes design certification for the System 80 +[1] standard plant

[1] "System 80 + " is a trademark of Westinghouse Electric Company LLC.

design, in accordance with 10 CFR part 52, subpart B. The applicant for certification of the System 80 + design was Combustion Engineering, Inc. (ABB–CE), which is now Westinghouse Electric Company LLC.

II. Definitions

A. Generic design control document (generic DCD) means the document containing the Tier 1 and Tier 2 information and generic technical specifications that is incorporated by reference into this appendix.

B. Generic technical specifications means the information, required by 10 CFR 50.36 and 50.36a, for the portion of the plant that is within the scope of this appendix.

C. Plant-specific DCD means the document, maintained by an applicant or licensee who references this appendix, consisting of the information in the generic DCD, as modified and supplemented by the plant-specific departures and exemptions made under Section VIII of this appendix.

D. *Tier 1* means the portion of the design-related information contained in the generic DCD that is approved and certified by this appendix (hereinafter Tier 1 information). The design descriptions, interface requirements, and site parameters are derived from Tier 2 information. Tier 1 information includes:

1. Definitions and general provisions;
2. Design descriptions;
3. Inspections, tests, analyses, and acceptance criteria (ITAAC);
4. Significant site parameters; and
5. Significant interface requirements.

E. *Tier 2* means the portion of the design-related information contained in the generic DCD that is approved but not certified by this appendix (Tier 2 information). Compliance with Tier 2 is required, but generic changes to and plant-specific departures from Tier 2 are governed by Section VIII of this appendix. Compliance with Tier 2 provides a sufficient, but not the only acceptable, method for complying with Tier 1. Compliance methods differing from Tier 2 must satisfy the change process in Section VIII of this appendix. Regardless of these differences, an applicant or licensee must meet the requirement in Section III.B of this appendix to reference Tier 2 when referencing Tier 1. Tier 2 information includes:

1. Information required by §§52.47(a) and 52.47(c), with the exception of generic technical specifications and conceptual design information;
2. Supporting information on the inspections, tests, and analyses that will be performed to demonstrate that the acceptance criteria in the ITAAC have been met; and
3. Combined license (COL) action items (COL license information), which identify certain matters that must be addressed in the site-specific portion of the final safety analysis report (FSAR) by an applicant who references this appendix. These items constitute information requirements but are not the only acceptable set of information in the FSAR. An applicant may depart from or omit these items, provided that the departure or omission is identified and justified in the FSAR. After issuance of a construction permit or COL, these items are not requirements for the licensee unless such items are restated in the FSAR.

F. *Tier 2** means the portion of the Tier 2 information, designated as such in the generic DCD, which is subject to the change process in Section VIII.B.6 of this appendix. This designation expires for some Tier 2* information under Section VIII.B.6 of this appendix.

G. Departure from a method of evaluation described in the plant-specific DCD used in establishing the design bases or in the safety analyses means:

(1) Changing any of the elements of the method described in the plant-specific DCD unless the results of the analysis are conservative or essentially the same; or

(2) Changing from a method described in the plant-specific DCD to another method unless that method has been approved by NRC for the intended application.

H. All other terms in this appendix have the meaning set out in 10 CFR 50.2 or 52.1, or Section 11 of the Atomic Energy Act of 1954, as amended, as applicable.

III. Scope and Contents

A. Tier 1, Tier 2, and the generic technical specifications in the System 80 + Design Control Document, ABB–CE, with revisions dated January 1997, are approved for incorporation by reference by the Director of the Office of the Federal Register in accordance with 5 U.S.C. 552(a) and 1 CFR part 51. Copies of the generic DCD may be obtained from the National Technical Information Service, 5285 Port Royal Road, Springfield, Virginia 22161. A copy is available for examination and copying at the NRC Public Document Room located at One White Flint North, 11555 Rockville Pike (first floor), Rockville, Maryland 20852. Copies are also available for examination at the NRC Library located at Two White Flint North, 11545 Rockville Pike, Rockville, Maryland 20852 and the Office of the Federal Register, 800 North Capitol Street, NW., Suite 700, Washington, DC.

B. An applicant or licensee referencing this appendix, in accordance with Section IV of this appendix, shall incorporate by reference and comply with the requirements of this appendix, including Tier 1, Tier 2, and the generic technical specifications except as otherwise provided in this appendix. Conceptual design information, as set forth in the generic DCD, and the Technical Support Document for the System 80 + design are not part of this appendix.

C. If there is a conflict between Tier 1 and Tier 2 of the DCD, then Tier 1 controls.

D. If there is a conflict between the generic DCD and either the application for design certification of the System 80 + design or NUREG–1462, ''Final Safety Evaluation Report Related to the Certification of the System 80 + Design,'' (FSER) and Supplement No. 1, then the generic DCD controls.

E. Design activities for structures, systems, and components that are wholly outside the scope of this appendix may be performed using site characteristics, provided the design activities do not affect the DCD or conflict with the interface requirements.

IV. Additional Requirements and Restrictions

A. An applicant for a combined license that wishes to reference this appendix shall, in addition to complying with the requirements of 10 CFR 52.77, 52.79, and 52.80, comply with the following requirements:

1. Incorporate by reference, as part of its application, this appendix;

2. Include, as part of its application:

a. A plant-specific DCD containing the same type of information and using the same organization and numbering as the generic DCD for the System 80 + design, as modified and supplemented by the applicant's exemptions and departures;

b. The reports on departures from and updates to the plant-specific DCD required by paragraph X.B of this appendix;

c. Plant-specific technical specifications, consisting of the generic and site-specific technical specifications, that are required by 10 CFR 50.36 and 50.36a;

d. Information demonstrating compliance with the site parameters and interface requirements;

e. Information that addresses the COL action items; and

f. Information required by 10 CFR 52.47 that is not within the scope of this appendix.

3. Include, in the plant-specific DCD, the proprietary information referenced in the System 80 + DCD.

B. The Commission reserves the right to determine in what manner this appendix may be referenced by an applicant for a construction permit or operating license under 10 CFR part 50.

V. Applicable Regulations

A. Except as indicated in paragraph B of this section, the regulations that apply to the System 80 + design are in 10 CFR parts 20, 50, 73, and 100, codified as of May 9, 1997, that are applicable and technically relevant, as described in the FSER (NUREG–1462) and Supplement No. 1.

B. The System 80 + design is exempt from portions of the following regulations:

1. Paragraph (f)(2)(iv) of 10 CFR 50.34—Separate Plant Safety Parameter Display Console;

2. Paragraphs (f)(2) (vii), (viii), (xxvi), and (xxviii) of 10 CFR 50.34—Accident Source Terms;

3. Paragraph (f)(2)(viii) of 10 CFR 50.34—Post-Accident Sampling for Hydrogen, Boron, Chloride, and Dissolved Gases;

4. Paragraph (f)(3)(iv) of 10 CFR 50.34—Dedicated Containment Penetration; and

5. Paragraphs III.A.1(a) and III.C.3(b) of Appendix J to 10 CFR 50—Containment Leakage Testing.

VI. Issue Resolution

A. The Commission has determined that the structures, systems, components, and design features of the System 80 + design comply with the provisions of the Atomic Energy Act of 1954, as amended, and the applicable regulations identified in Section V of this appendix; and therefore, provide adequate protection to the health and safety of the public. A conclusion that a matter is resolved includes the finding that additional or alternative structures, systems, components, design features, design criteria, testing, analyses, acceptance criteria, or justifications are not necessary for the System 80 + design.

B. The Commission considers the following matters resolved within the meaning of 10 CFR 52.63(a)(5) in subsequent proceedings for issuance of a combined license, amendment of a combined license, or renewal of a combined license, proceedings held under 10 CFR 52.103, and enforcement proceedings involving plants referencing this appendix:

1. All nuclear safety issues, except for the generic technical specifications and other operational requirements, associated with the information in the FSER and Supplement No. 1, Tier 1, Tier 2 (including referenced information which the context indicates is intended as requirements), and the rulemaking record for certification of the System 80 + design;

2. All nuclear safety and safeguards issues associated with the information in proprietary and safeguards documents, referenced and in context, are intended as requirements in the generic DCD for the System 80 + design;

3. All generic changes to the DCD under and in compliance with the change processes in Sections VIII.A.1 and VIII.B.1 of this appendix;

4. All exemptions from the DCD under and in compliance with the change processes in Sections VIII.A.4 and VIII.B.4 of this appendix, but only for that plant;

5. All departures from the DCD that are approved by license amendment, but only for that plant;

6. Except as provided in paragraph VIII.B.5.f of this appendix, all departures

from Tier 2 under and in compliance with the change processes in paragraph VIII.B.5 of this appendix that do not require prior NRC approval, but only for that plant;

7. All environmental issues concerning severe accident mitigation design alternatives associated with the information in the NRC's final environmental assessment for the System 80 + design and the technical support document for the System 80 + design, dated January 1995, for plants referencing this appendix whose site parameters are within those specified in the technical support document.

C. The Commission does not consider operational requirements for an applicant or licensee who references this appendix to be matters resolved within the meaning of 10 CFR 52.63(a)(5). The Commission reserves the right to require operational requirements for an applicant or licensee who references this appendix by rule, regulation, order, or license condition.

D. Except in accordance with the change processes in Section VIII of this appendix, the Commission may not require an applicant or licensee who references this appendix to:

1. Modify structures, systems, components, or design features as described in the generic DCD;

2. Provide additional or alternative structures, systems, components, or design features not discussed in the generic DCD; or

3. Provide additional or alternative design criteria, testing, analyses, acceptance criteria, or justification for structures, systems, components, or design features discussed in the generic DCD.

E.1. Persons who wish to review proprietary information or other secondary references in the DCD for the System 80 + design, in order to request or participate in the hearing required by 10 CFR 52.85 or the hearing provided under 10 CFR 52.103, or to request or participate in any other hearing relating to this appendix in which interested persons have adjudicatory hearing rights, shall first request access to such information from Westinghouse. The request must state with particularity:

a. The nature of the proprietary or other information sought;

b. The reason why the information currently available to the public at the NRC Web site, *http://www.nrc.gov*, and/or at the NRC Public Document Room, is insufficient;

c. The relevance of the requested information to the hearing issue(s) which the person proposes to raise; and

d. A showing that the requesting person has the capability to understand and utilize the requested information.

2. If a person claims that the information is necessary to prepare a request for hearing, the request must be filed no later than 15 days after publication in the FEDERAL REGISTER of the notice required either by 10 CFR 52.85 or 10 CFR 52.103. If Westinghouse declines to provide the information sought, Westinghouse shall send a written response within ten (10) days of receiving the request to the requesting person setting forth with particularity the reasons for its refusal. The person may then request the Commission (or presiding officer, if a proceeding has been established) to order disclosure. The person shall include copies of the original request (and any subsequent clarifying information provided by the requesting party to the applicant) and the applicant's response. The Commission and presiding officer shall base their decisions solely on the person's original request (including any clarifying information provided by the requesting person to Westinghouse), and Westinghouse's response. The Commission and presiding officer may order Westinghouse to provide access to some or all of the requested information, subject to an appropriate non-disclosure agreement.

VII. DURATION OF THIS APPENDIX

This appendix may be referenced for a period of 15 years from June 20, 1997, except as provided for in 10 CFR 52.55(b) and 52.57(b). This appendix remains valid for an applicant or licensee who references this appendix until the application is withdrawn or the license expires, including any period of extended operation under a renewed license.

VIII. PROCESSES FOR CHANGES AND DEPARTURES

A. Tier 1 information.

1. Generic changes to Tier 1 information are governed by the requirements in 10 CFR 52.63(a)(1).

2. Generic changes to Tier 1 information are applicable to all applicants or licensees who reference this appendix, except those for which the change has been rendered technically irrelevant by action taken under paragraphs A.3 or A.4 of this section.

3. Departures from Tier 1 information that are required by the Commission through plant-specific orders are governed by the requirements in 10 CFR 52.63(a)(4).

4. Exemptions from Tier 1 information are governed by the requirements in 10 CFR 52.63(b)(1) and 52.98(f). The Commission will deny a request for an exemption from Tier 1, if it finds that the design change will result in a significant decrease in the level of safety otherwise provided by the design.

B. TIER 2 INFORMATION

1. Generic changes to Tier 2 information are governed by the requirements in 10 CFR 52.63(a)(1).

2. Generic changes to Tier 2 information are applicable to all applicants or licensees who reference this appendix, except those for

which the change has been rendered technically irrelevant by action taken under paragraphs B.3, B.4, B.5, or B.6 of this section.

3. The Commission may not require new requirements on Tier 2 information by plant-specific order while this appendix is in effect under §§ 52.55 or 52.61, unless:

a. A modification is necessary to secure compliance with the Commission's regulations applicable and in effect at the time this appendix was approved, as set forth in Section V of this appendix, or to assure adequate protection of the public health and safety or the common defense and security; and

b. Special circumstances as defined in 10 CFR 52.7 are present.

4. An applicant or licensee who references this appendix may request an exemption from Tier 2 information. The Commission may grant such a request only if it determines that the exemption will comply with the requirements of 10 CFR 52.7. The Commission will deny a request for an exemption from Tier 2, if it finds that the design change will result in a significant decrease in the level of safety otherwise provided by the design. The grant of an exemption to an applicant must be subject to litigation in the same manner as other issues material to the license hearing. The grant of an exemption to a licensee must be subject to an opportunity for a hearing in the same manner as license amendments.

5.a. An applicant or licensee who references this appendix may depart from Tier 2 information, without prior NRC approval, unless the proposed departure involves a change to or departure from Tier 1 information, Tier 2* information, or the technical specifications, or requires a license amendment under paragraphs B.5.b or B.5.c of this section. When evaluating the proposed departure, an applicant or licensee shall consider all matters described in the plant-specific DCD.

b. A proposed departure from Tier 2, other than one affecting resolution of a severe accident issue identified in the plant-specific DCD, requires a license amendment if it would—

(1) Result in more than a minimal increase in the frequency of occurrence of an accident previously evaluated in the plant-specific DCD;

(2) Result in more than a minimal increase in the likelihood of occurrence of a malfunction of a structure, system, or component (SSC) important to safety previously evaluated in the plant-specific DCD;

(3) Result in more than a minimal increase in the consequences of an accident previously evaluated in the plant-specific DCD;

(4) Result in more than a minimal increase in the consequences of a malfunction of an SSC important to safety previously evaluated in the plant-specific DCD;

(5) Create a possibility for an accident of a different type than any evaluated previously in the plant-specific DCD;

(6) Create a possibility for a malfunction of an SSC important to safety with a different result than any evaluated previously in the plant-specific DCD;

(7) Result in a design basis limit for a fission product barrier as described in the plant-specific DCD being exceeded or altered; or

(8) Result in a departure from a method of evaluation described in the plant-specific DCD used in establishing the design bases or in the safety analyses.

c. A proposed departure from Tier 2 affecting resolution of an ex-vessel severe accident design feature identified in the plant-specific DCD, requires a license amendment if:

(1) There is a substantial increase in the probability of an ex-vessel severe accident such that a particular ex-vessel severe accident previously reviewed and determined to be not credible could become credible; or

(2) There is a substantial increase in the consequences to the public of a particular ex-vessel severe accident previously reviewed.

d. If a departure requires a license amendment under paragraph B.5.b or B.5.c of this section, it is governed by 10 CFR 50.90.

e. A departure from Tier 2 information that is made under paragraph B.5 of this section does not require an exemption from this appendix.

f. A party to an adjudicatory proceeding for either the issuance, amendment, or renewal of a license or for operation under 10 CFR 52.103(a), who believes that an applicant or licensee who references this appendix has not complied with paragraph VIII.B.5 of this appendix when departing from Tier 2 information, may petition the NRC to admit into the proceeding such a contention. In addition to compliance with the general requirements of 10 CFR 2.309, the petition must demonstrate that the departure does not comply with paragraph VIII.B.5 of this appendix. Further, the petition must demonstrate that the change bears on an asserted noncompliance with an ITAAC acceptance criterion in the case of a 10 CFR 52.103 preoperational hearing, or that the change bears directly on the amendment request in the case of a hearing on a license amendment. Any other party may file a response. If, on the basis of the petition and any response, the presiding officer determines that a sufficient showing has been made, the presiding officer shall certify the matter directly to the Commission for determination of the admissibility of the contention. The Commission may admit such a contention if it determines the petition raises a genuine issue of material fact regarding compliance with paragraph VIII.B.5 of this appendix.

6.a. An applicant who references this appendix may not depart from Tier 2* information, which is designated with italicized text or brackets and an asterisk in the generic DCD, without NRC approval. The departure will not be considered a resolved issue, within the meaning of Section VI of this appendix and 10 CFR 52.63(a)(5).

b. A licensee who references this appendix may not depart from the following Tier 2* matters without prior NRC approval. A request for a departure will be treated as a request for a license amendment under 10 CFR 50.90.

(1) Maximum fuel rod average burnup.

(2) Control room human factors engineering.

c. A licensee who references this appendix may not, before the plant first achieves full power following the finding required by 10 CFR 52.103(g), depart from the following Tier 2* matters except in accordance with paragraph B.6.b of this section. After the plant first achieves full power, the following Tier 2* matters revert to Tier 2 status and are thereafter subject to the departure provisions in paragraph B.5 of this section.

(1) ASME Boiler & Pressure Vessel Code, Section III.

(2) ACI 349 and ANSI/AISC N–690.

(3) Motor-operated valves.

(4) Equipment seismic qualification methods.

(5) Piping design acceptance criteria.

(6) Fuel and control rod design, except burnup limit.

(7) Instrumentation and controls setpoint methodology.

(8) Instrumentation and controls hardware and software changes.

(9) Instrumentation and controls environmental qualification.

(10) Seismic design criteria for non-seismic Category I structures.

d. Departures from Tier 2* information that are made under paragraph B.6 of this section do not require an exemption from this appendix.

C. Operational requirements.

1. Generic changes to generic technical specifications and other operational requirements that were completely reviewed and approved in the design certification rulemaking and do not require a change to a design feature in the generic DCD are governed by the requirements in 10 CFR 50.109. Generic changes that do require a change to a design feature in the generic DCD are governed by the requirements in paragraphs A or B of this section.

2. Generic changes to generic TS and other operational requirements are applicable to all applicants who reference this appendix, except those for which the change has been rendered technically irrelevant by action taken under paragraphs C.3 or C.4 of this section.

3. The Commission may require plant-specific departures on generic technical specifications and other operational requirements that were completely reviewed and approved, provided a change to a design feature in the generic DCD is not required and special circumstances as defined in 10 CFR 2.335 are present. The Commission may modify or supplement generic technical specifications and other operational requirements that were not completely reviewed and approved or require additional technical specifications and other operational requirements on a plant-specific basis, provided a change to a design feature in the generic DCD is not required.

4. An applicant who references this appendix may request an exemption from the generic technical specifications or other operational requirements. The Commission may grant such a request only if it determines that the exemption will comply with the requirements of 10 CFR 52.7. The grant of an exemption must be subject to litigation in the same manner as other issues material to the license hearing.

5. A party to an adjudicatory proceeding for either the issuance, amendment, or renewal of a license or for operation under 10 CFR 52.103(a), who believes that an operational requirement approved in the DCD or a technical specification derived from the generic technical specifications must be changed may petition to admit into the proceeding such a contention. Such a petition must comply with the general requirements of 10 CFR 2.309 and must demonstrate why special circumstances as defined in 10 CFR 2.335 are present, or for compliance with the Commission's regulations in effect at the time this appendix was approved, as set forth in Section V of this appendix. Any other party may file a response thereto. If, on the basis of the petition and any response, the presiding officer determines that a sufficient showing has been made, the presiding officer shall certify the matter directly to the Commission for determination of the admissibility of the contention. All other issues with respect to the plant-specific technical specifications or other operational requirements are subject to a hearing as part of the license proceeding.

6. After issuance of a license, the generic technical specifications have no further effect on the plant-specific technical specifications and changes to the plant-specific technical specifications will be treated as license amendments under 10 CFR 50.90.

IX. Inspections, Tests, Analyses, and Acceptance Criteria (ITAAC)

A.1 An applicant or licensee who references this appendix shall perform and demonstrate conformance with the ITAAC before fuel load. With respect to activities subject to an

ITAAC, an applicant for a license may proceed at its own risk with design and procurement activities, and a licensee may proceed at its own risk with design, procurement, construction, and preoperational activities, even though the NRC may not have found that any particular ITAAC has been met.

2. The licensee who references this appendix shall notify the NRC that the required inspections, tests, and analyses in the ITAAC have been successfully completed and that the corresponding acceptance criteria have been met.

3. In the event that an activity is subject to an ITAAC, and the applicant or licensee who references this appendix has not demonstrated that the ITAAC has been met, the applicant or licensee may either take corrective actions to successfully complete that ITAAC, request an exemption from the ITAAC in accordance with Section VIII of this appendix and 10 CFR 52.97(b), or petition for rulemaking to amend this appendix by changing the requirements of the ITAAC, under 10 CFR 2.802 and 52.97(b). Such rulemaking changes to the ITAAC must meet the requirements of Section VIII.A.1 of this appendix.

B.1 The NRC shall ensure that the required inspections, tests, and analyses in the ITAAC are performed. The NRC shall verify that the inspections, tests, and analyses referenced by the licensee have been successfully completed and, based solely thereon, find the prescribed acceptance criteria have been met. At appropriate intervals during construction, the NRC shall publish notices of the successful completion of ITAAC in the FEDERAL REGISTER.

2. In accordance with 10 CFR 52.103(g), the Commission shall find that the acceptance criteria in the ITAAC for the license are met before fuel load.

3. After the Commission has made the finding required by 10 CFR 52.103(g), the ITAAC do not, by virtue of their inclusion within the DCD, constitute regulatory requirements either for licensees or for renewal of the license; except for specific ITAAC, which are the subject of a §52.103(a) hearing, their expiration will occur upon final Commission action in such proceeding. However, subsequent modifications must comply with the Tier 1 and Tier 2 design descriptions in the plant-specific DCD unless the licensee has complied with the applicable requirements of 10 CFR 52.98 and Section VIII of this appendix.

X. RECORDS AND REPORTING

A. Records.

1. The applicant for this appendix shall maintain a copy of the generic DCD that includes all generic changes to Tier 1, Tier 2, and the generic TS and other operational requirements. The applicant shall maintain the proprietary and safeguards information referenced in the generic DCD for the period that this appendix may be referenced, as specified in Section VII of this appendix.

2. An applicant or licensee who references this appendix shall maintain the plant-specific DCD to accurately reflect both generic changes to the generic DCD and plant-specific departures made under Section VIII of this appendix throughout the period of application and for the term of the license (including any period of renewal).

3. An applicant or licensee who references this appendix shall prepare and maintain written evaluations which provide the bases for the determinations required by Section VIII of this appendix. These evaluations must be retained throughout the period of application and for the term of the license (including any period of renewal).

B. Reporting.

1. An applicant or licensee who references this appendix shall submit a report to the NRC containing a brief description of any plant-specific departures from the DCD, including a summary of the evaluation of each. This report must be filed in accordance with the filing requirements applicable to reports in 10 CFR 52.3.

2. An applicant or licensee who references this appendix shall submit updates to its DCD, which reflect the generic changes to and plant-specific departures from the generic DCD made under Section VIII of this appendix. These updates must be filed under the filing requirements applicable to final safety analysis report updates in 10 CFR 52.3 and 50.71(e).

3. The reports and updates required by paragraphs X.B.1 and X.B.2 must be submitted as follows:

a. On the date that an application for a license referencing this appendix is submitted, the application must include the report and any updates to the generic DCD.

b. During the interval from the date of application for a license to the date the Commission makes the finding required by 10 CFR 52.103(g), the report must be submitted semi-annually. Updates to the plant-specific DCD must be submitted annually and may be submitted along with amendments to the application.

c. After the Commission makes the finding required by 10 CFR 52.103(g), the reports and updates to the plant-specific DCD must be submitted, along with updates to the site-specific portion of the final safety analysis report for the facility, at the intervals required by 10 CFR 50.59(d)(2) and 50.71(e)(4), respectively, or at shorter intervals as specified in the license.

[72 FR 49517, Aug. 28, 2007, as amended at 76 FR 72085, Nov. 22, 2011; 84 FR 63568, Nov. 18, 2019]

APPENDIX C TO PART 52—DESIGN CERTIFICATION RULE FOR THE AP600 DESIGN

I. INTRODUCTION

Appendix C constitutes the standard design certification for the AP600[1] design, in accordance with 10 CFR part 52, subpart B. The applicant for certification of the AP600 design is Westinghouse Electric Company LLC.

II. DEFINITIONS

A. Generic design control document (generic DCD) means the document containing the Tier 1 and Tier 2 information and generic technical specifications that is incorporated by reference into this appendix.

B. Generic technical specifications means the information, required by 10 CFR 50.36 and 50.36a, for the portion of the plant that is within the scope of this appendix.

C. Plant-specific DCD means the document, maintained by an applicant or licensee who references this appendix, consisting of the information in the generic DCD, as modified and supplemented by the plant-specific departures and exemptions made under Section VIII of this appendix.

D. *Tier 1* means the portion of the design-related information contained in the generic DCD that is approved and certified by this appendix (hereinafter Tier 1 information). The design descriptions, interface requirements, and site parameters are derived from Tier 2 information. Tier 1 information includes:

1. Definitions and general provisions;
2. Design descriptions;
3. Inspections, tests, analyses, and acceptance criteria (ITAAC);
4. Significant site parameters; and
5. Significant interface requirements.

E. *Tier 2* means the portion of the design-related information contained in the generic DCD that is approved but not certified by this appendix (Tier 2 information). Compliance with Tier 2 is required, but generic changes to and plant-specific departures from Tier 2 are governed by Section VIII of this appendix. Compliance with Tier 2 provides a sufficient, but not the only acceptable, method for complying with Tier 1. Compliance methods differing from Tier 2 must satisfy the change process in Section VIII of this appendix. Regardless of these differences, an applicant or licensee must meet the requirement in Section III.B of this appendix to reference Tier 2 when referencing Tier 1. Tier 2 information includes:

1. Information required by §§52.47(a) and 52.47(c), with the exception of generic technical specifications and conceptual design information;
2. Supporting information on the inspections, tests, and analyses that will be performed to demonstrate that the acceptance criteria in the ITAAC have been met; and
3. Combined license (COL) action items (COL license information), which identify certain matters that must be addressed in the site-specific portion of the final safety analysis report (FSAR) by an applicant who references this appendix. These items constitute information requirements but are not the only acceptable set of information in the FSAR. An applicant may depart from or omit these items, provided that the departure or omission is identified and justified in the FSAR. After issuance of a construction permit or COL, these items are not requirements for the licensee unless such items are restated in the FSAR.
4. The investment protection short-term availability controls in Section 16.3 of the DCD.

F. *Tier 2** means the portion of the Tier 2 information, designated as such in the generic DCD, which is subject to the change process in Section VIII.B.6 of this appendix. This designation expires for some Tier 2* information under Section VIII.B.6.

G. Departure from a method of evaluation described in the plant-specific DCD used in establishing the design bases or in the safety analyses means:

(1) Changing any of the elements of the method described in the plant-specific DCD unless the results of the analysis are conservative or essentially the same; or

(2) Changing from a method described in the plant-specific DCD to another method unless that method has been approved by NRC for the intended application.

H. All other terms in this appendix have the meaning set out in 10 CFR 50.2 or 52.1, or Section 11 of the Atomic Energy Act of 1954, as amended, as applicable.

III. SCOPE AND CONTENTS

A. Tier 1, Tier 2 (including the investment protection short-term availability controls in Section 16.3), and the generic technical specifications in the AP600 DCD (12/99 revision) are approved for incorporation by reference by the Director of the Office of the Federal Register on January 24, 2000, in accordance with 5 U.S.C. 552(a) and 1 CFR part 51. Copies of the generic DCD may be obtained from Ronald P. Vijuk, Manager, Passive Plant Engineering, Westinghouse Electric Company, P.O. Box 355, Pittsburgh, Pennsylvania 15230–0355. A copy of the generic DCD is available for examination and copying at the NRC Public Document Room located at One White Flint North, 11555 Rockville Pike (first floor), Rockville, Maryland 20852. Copies are also available for examination at the NRC Library located at Two White Flint North, 11545 Rockville Pike, Rockville, Maryland 20852; and the Office of

[1] AP600 is a trademark of Westinghouse Electric Company LLC.

the Federal Register, 800 North Capitol Street, NW., Suite 700, Washington, DC.

B. An applicant or licensee referencing this appendix, in accordance with Section IV of this appendix, shall incorporate by reference and comply with the requirements of this appendix, including Tier 1, Tier 2 (including the investment protection short-term availability controls in Section 16.3), and the generic technical specifications except as otherwise provided in this appendix. Conceptual design information in the generic DCD and the evaluation of severe accident mitigation design alternatives in Appendix 1B of the generic DCD are not part of this appendix.

C. If there is a conflict between Tier 1 and Tier 2 of the DCD, then Tier 1 controls.

D. If there is a conflict between the generic DCD and either the application for design certification of the AP600 design or NUREG–1512, ''Final Safety Evaluation Report Related to Certification of the AP600 Standard Design,'' (FSER), then the generic DCD controls.

E. Design activities for structures, systems, and components that are wholly outside the scope of this appendix may be performed using site characteristics, provided the design activities do not affect the DCD or conflict with the interface requirements.

IV. Additional Requirements and Restrictions

A. An applicant for a combined license that wishes to reference this appendix shall, in addition to complying with the requirements of 10 CFR 52.77, 52.79, and 52.80, comply with the following requirements:

1. Incorporate by reference, as part of its application, this appendix;

2. Include, as part of its application:

a. A plant-specific DCD containing the same type of information and utilizing the same organization and numbering as the generic DCD for the AP600 design, as modified and supplemented by the applicant's exemptions and departures;

b. The reports on departures from and updates to the plant-specific DCD required by paragraph X.B of this appendix;

c. Plant-specific technical specifications, consisting of the generic and site-specific technical specifications, that are required by 10 CFR 50.36 and 50.36a;

d. Information demonstrating compliance with the site parameters and interface requirements;

e. Information that addresses the COL action items; and

f. Information required by 10 CFR 52.47 that is not within the scope of this appendix.

3. Include, in the plant-specific DCD, the proprietary information and safeguards information referenced in the AP600 DCD.

B. The Commission reserves the right to determine in what manner this appendix may be referenced by an applicant for a construction permit or operating license under 10 CFR part 50.

V. Applicable Regulations

A. Except as indicated in paragraph B of this section, the regulations that apply to the AP600 design are in 10 CFR parts 20, 50, 73, and 100, codified as of December 16, 1999, that are applicable and technically relevant, as described in the FSER (NUREG–1512) and the supplementary information for this section.

B. The AP600 design is exempt from portions of the following regulations:

1. Paragraph (a)(1) of 10 CFR 50.34—whole body dose criterion;

2. Paragraph (f)(2)(iv) of 10 CFR 50.34—Plant Safety Parameter Display Console;

3. Paragraphs (f)(2)(vii), (viii), (xxvi), and (xxviii) of 10 CFR 50.34—Accident Source Term in TID 14844;

4. Paragraph (a)(2) of 10 CFR 50.55a—ASME Boiler and Pressure Vessel Code;

5. Paragraph (c)(1) of 10 CFR 50.62—Auxiliary (or emergency) feedwater system;

6. Appendix A to 10 CFR part 50, GDC 17—Offsite Power Sources; and

7. Appendix A to 10 CFR part 50, GDC 19—whole body dose criterion.

VI. Issue Resolution

A. The Commission has determined that the structures, systems, components, and design features of the AP600 design comply with the provisions of the Atomic Energy Act of 1954, as amended, and the applicable regulations identified in Section V of this appendix; and therefore, provide adequate protection to the health and safety of the public. A conclusion that a matter is resolved includes the finding that additional or alternative structures, systems, components, design features, design criteria, testing, analyses, acceptance criteria, or justifications are not necessary for the AP600 design.

B. The Commission considers the following matters resolved within the meaning of 10 CFR 52.63(a)(5) in subsequent proceedings for issuance of a combined license, amendment of a combined license, or renewal of a combined license, proceedings held under 10 CFR 52.103, and enforcement proceedings involving plants referencing this appendix:

1. All nuclear safety issues, except for the generic technical specifications and other operational requirements, associated with the information in the FSER and Supplement No. 1, Tier 1, Tier 2 (including referenced information which the context indicates is intended as requirements and the investment protection short-term availability controls in Section 16.3), and the rulemaking record for certification of the AP600 design;

2. All nuclear safety and safeguards issues associated with the information in proprietary and safeguards documents, referenced

and in context, are intended as requirements in the generic DCD for the AP600 design;

3. All generic changes to the DCD under and in compliance with the change processes in Sections VIII.A.1 and VIII.B.1 of this appendix;

4. All exemptions from the DCD under and in compliance with the change processes in Sections VIII.A.4 and VIII.B.4 of this appendix, but only for that plant;

5. All departures from the DCD that are approved by license amendment, but only for that plant;

6. Except as provided in paragraph VIII.B.5.f of this appendix, all departures from Tier 2 under and in compliance with the change processes in paragraph VIII.B.5 of this appendix that do not require prior NRC approval, but only for that plant;

7. All environmental issues concerning severe accident mitigation design alternatives associated with the information in the NRC's environmental assessment for the AP600 design and appendix 1B of the generic DCD, for plants referencing this appendix whose site parameters are within those specified in the severe accident mitigation design alternatives evaluation.

C. The Commission does not consider operational requirements for an applicant or licensee who references this appendix to be matters resolved within the meaning of 10 CFR 52.63(a)(5). The Commission reserves the right to require operational requirements for an applicant or licensee who references this appendix by rule, regulation, order, or license condition.

D. Except in accordance with the change processes in Section VIII of this appendix, the Commission may not require an applicant or licensee who references this appendix to:

1. Modify structures, systems, components, or design features as described in the generic DCD;

2. Provide additional or alternative structures, systems, components, or design features not discussed in the generic DCD; or

3. Provide additional or alternative design criteria, testing, analyses, acceptance criteria, or justification for structures, systems, components, or design features discussed in the generic DCD.

E.1. Persons who wish to review proprietary and safeguards information or other secondary references in the AP600 DCD, in order to request or participate in the hearing required by 10 CFR 52.85 or the hearing provided under 10 CFR 52.103, or to request or participate in any other hearing relating to this appendix in which interested persons have adjudicatory hearing rights, shall first request access to such information from Westinghouse. The request must state with particularity:

a. The nature of the proprietary or other information sought;

b. The reason why the information currently available to the public at the NRC Web site, *http://www.nrc.gov,* and/or at the NRC Public Document Room, is insufficient;

c. The relevance of the requested information to the hearing issue(s) which the person proposes to raise; and

d. A showing that the requesting person has the capability to understand and utilize the requested information.

2. If a person claims that the information is necessary to prepare a request for hearing, the request must be filed no later than 15 days after publication in the FEDERAL REGISTER of the notice required either by 10 CFR 52.85 or 10 CFR 52.103. If Westinghouse declines to provide the information sought, Westinghouse shall send a written response within 10 days of receiving the request to the requesting person setting forth with particularity the reasons for its refusal. The person may then request the Commission (or presiding officer, if a proceeding has been established) to order disclosure. The person shall include copies of the original request (and any subsequent clarifying information provided by the requesting party to the applicant) and the applicant's response. The Commission and presiding officer shall base their decisions solely on the person's original request (including any clarifying information provided by the requesting person to Westinghouse), and Westinghouse's response. The Commission and presiding officer may order Westinghouse to provide access to some or all of the requested information, subject to an appropriate non-disclosure agreement.

VII. DURATION OF THIS APPENDIX

This appendix may be referenced for a period of 15 years from January 24, 2000, except as provided for in 10 CFR 52.55(b) and 52.57(b). This appendix remains valid for an applicant or licensee who references this appendix until the application is withdrawn or the license expires, including any period of extended operation under a renewed license.

VIII. PROCESSES FOR CHANGES AND DEPARTURES

A. Tier 1 information.

1. Generic changes to Tier 1 information are governed by the requirements in 10 CFR 52.63(a)(1).

2. Generic changes to Tier 1 information are applicable to all applicants or licensees who reference this appendix, except those for which the change has been rendered technically irrelevant by action taken under paragraphs A.3 or A.4 of this section.

3. Departures from Tier 1 information that are required by the Commission through plant-specific orders are governed by the requirements in 10 CFR 52.63(a)(4).

4. Exemptions from Tier 1 information are governed by the requirements in 10 CFR 52.63(b)(1) and 52.98(f). The Commission will deny a request for an exemption from Tier 1, if it finds that the design change will result in a significant decrease in the level of safety otherwise provided by the design.

B. Tier 2 information.

1. Generic changes to Tier 2 information are governed by the requirements in 10 CFR 52.63(a)(1).

2. Generic changes to Tier 2 information are applicable to all applicants or licensees who reference this appendix, except those for which the change has been rendered technically irrelevant by action taken under paragraphs B.3, B.4, B.5, or B.6 of this section.

3. The Commission may not require new requirements on Tier 2 information by plant-specific order while this appendix is in effect under §§ 52.55 or 52.61, unless:

a. A modification is necessary to secure compliance with the Commission's regulations applicable and in effect at the time this appendix was approved, as set forth in Section V of this appendix, or to assure adequate protection of the public health and safety or the common defense and security; and

b. Special circumstances as defined in 10 CFR 52.7 are present.

4. An applicant or licensee who references this appendix may request an exemption from Tier 2 information. The Commission may grant such a request only if it determines that the exemption will comply with the requirements of 10 CFR 52.7. The Commission will deny a request for an exemption from Tier 2, if it finds that the design change will result in a significant decrease in the level of safety otherwise provided by the design. The grant of an exemption to an applicant must be subject to litigation in the same manner as other issues material to the license hearing. The grant of an exemption to a licensee must be subject to an opportunity for a hearing in the same manner as license amendments.

5.a. An applicant or licensee who references this appendix may depart from Tier 2 information, without prior NRC approval, unless the proposed departure involves a change to or departure from Tier 1 information, Tier 2* information, or the technical specifications, or requires a license amendment under paragraphs B.5.b or B.5.c of this section. When evaluating the proposed departure, an applicant or licensee shall consider all matters described in the plant-specific DCD.

b. A proposed departure from Tier 2, other than one affecting resolution of a severe accident issue identified in the plant-specific DCD, requires a license amendment if it would:

(1) Result in more than a minimal increase in the frequency of occurrence of an accident previously evaluated in the plant-specific DCD;

(2) Result in more than a minimal increase in the likelihood of occurrence of a malfunction of a structure, system, or component (SSC) important to safety previously evaluated in the plant-specific DCD;

(3) Result in more than a minimal increase in the consequences of an accident previously evaluated in the plant-specific DCD;

(4) Result in more than a minimal increase in the consequences of a malfunction of an SSC important to safety previously evaluated in the plant-specific DCD;

(5) Create a possibility for an accident of a different type than any evaluated previously in the plant-specific DCD;

(6) Create a possibility for a malfunction of an SSC important to safety with a different result than any evaluated previously in the plant-specific DCD;

(7) Result in a design basis limit for a fission product barrier as described in the plant-specific DCD being exceeded or altered; or

(8) Result in a departure from a method of evaluation described in the plant-specific DCD used in establishing the design bases or in the safety analyses.

c. A proposed departure from Tier 2 affecting resolution of an ex-vessel severe accident design feature identified in the plant-specific DCD, requires a license amendment if:

(1) There is a substantial increase in the probability of an ex-vessel severe accident such that a particular ex-vessel severe accident previously reviewed and determined to be not credible could become credible; or

(2) There is a substantial increase in the consequences to the public of a particular ex-vessel severe accident previously reviewed.

d. If a departure requires a license amendment under paragraphs B.5.b or B.5.c of this section, it is governed by 10 CFR 50.90.

e. A departure from Tier 2 information that is made under paragraph B.5 of this section does not require an exemption from this appendix.

f. A party to an adjudicatory proceeding for either the issuance, amendment, or renewal of a license or for operation under 10 CFR 52.103(a), who believes that an applicant or licensee who references this appendix has not complied with paragraph VIII.B.5 of this appendix when departing from Tier 2 information, may petition the NRC to admit into the proceeding such a contention. In addition to compliance with the general requirements of 10 CFR 2.309, the petition must demonstrate that the departure does not comply with paragraph VIII.B.5 of this appendix. Further, the petition must demonstrate that the change bears on an asserted noncompliance with an ITAAC acceptance criterion in the case of a 10 CFR 52.103

preoperational hearing, or that the change bears directly on the amendment request in the case of a hearing on a license amendment. Any other party may file a response. If, on the basis of the petition and any response, the presiding officer determines that a sufficient showing has been made, the presiding officer shall certify the matter directly to the Commission for determination of the admissibility of the contention. The Commission may admit such a contention if it determines the petition raises a genuine issue of material fact regarding compliance with paragraph VIII.B.5 of this appendix.

6a. An applicant who references this appendix may not depart from Tier 2* information, which is designated with italicized text or brackets and an asterisk in the generic DCD, without NRC approval. The departure will not be considered a resolved issue, within the meaning of Section VI of this appendix and 10 CFR 52.63(a)(5).

b. A licensee who references this appendix may not depart from the following Tier 2* matters without prior NRC approval. A request for a departure will be treated as a request for a license amendment under 10 CFR 50.90.

(1) Maximum fuel rod average burn-up.

(2) Fuel principal design requirements.

(3) Fuel criteria evaluation process.

(4) Fire areas.

(5) Human factors engineering.

c. A licensee who references this appendix may not, before the plant first achieves full power following the finding required by 10 CFR 52.103(g), depart from the following Tier 2* matters except in accordance with paragraph B.6.b of this section. After the plant first achieves full power, the following Tier 2* matters revert to Tier 2 status and are thereafter subject to the departure provisions in paragraph B.5 of this section.

(1) Nuclear Island structural dimensions.

(2) ASME Boiler and Pressure Vessel Code, Section III, and Code Case—284.

(3) Design Summary of Critical Sections.

(4) ACI 318, ACI 349, and ANSI/AISC N—690.

(5) Definition of critical locations and thicknesses.

(6) Seismic qualification methods and standards.

(7) Nuclear design of fuel and reactivity control system, except burn-up limit.

(8) Motor-operated and power-operated valves.

(9) Instrumentation and control system design processes, methods, and standards.

(10) PRHR natural circulation test (first plant only).

(11) ADS and CMT verification tests (first three plants only).

d. Departures from Tier 2* information that are made under paragraph B.6 of this section do not require an exemption from this appendix.

C. Operational requirements.

1. Generic changes to generic technical specifications and other operational requirements that were completely reviewed and approved in the design certification rulemaking and do not require a change to a design feature in the generic DCD are governed by the requirements in 10 CFR 50.109. Generic changes that do require a change to a design feature in the generic DCD are governed by the requirements in paragraphs A or B of this section.

2. Generic changes to generic TS and other operational requirements are applicable to all applicants who reference this appendix, except those for which the change has been rendered technically irrelevant by action taken under paragraphs C.3 or C.4 of this section.

3. The Commission may require plant-specific departures on generic technical specifications and other operational requirements that were completely reviewed and approved, provided a change to a design feature in the generic DCD is not required and special circumstances as defined in 10 CFR 2.335 are present. The Commission may modify or supplement generic technical specifications and other operational requirements that were not completely reviewed and approved or require additional technical specifications and other operational requirements on a plant-specific basis, provided a change to a design feature in the generic DCD is not required.

4. An applicant who references this appendix may request an exemption from the generic technical specifications or other operational requirements. The Commission may grant such a request only if it determines that the exemption will comply with the requirements of 10 CFR 52.7. The grant of an exemption must be subject to litigation in the same manner as other issues material to the license hearing.

5. A party to an adjudicatory proceeding for either the issuance, amendment, or renewal of a license or for operation under 10 CFR 52.103(a), who believes that an operational requirement approved in the DCD or a technical specification derived from the generic technical specifications must be changed may petition to admit into the proceeding such a contention. Such petition must comply with the general requirements of 10 CFR 2.309 and must demonstrate why special circumstances as defined in 10 CFR 2.335 are present, or for compliance with the Commission's regulations in effect at the time this appendix was approved, as set forth in Section V of this appendix. Any other party may file a response thereto. If, on the basis of the petition and any response, the presiding officer determines that a sufficient showing has been made, the presiding officer shall certify the matter directly to the Commission for determination of the admissibility of the contention. All other issues with respect to the plant-specific technical

specifications or other operational requirements are subject to a hearing as part of the license proceeding.

6. After issuance of a license, the generic technical specifications have no further effect on the plant-specific technical specifications and changes to the plant-specific technical specifications will be treated as license amendments under 10 CFR 50.90.

IX. Inspections, Tests, Analyses, and Acceptance Criteria (ITAAC)

A.1 An applicant or licensee who references this appendix shall perform and demonstrate conformance with the ITAAC before fuel load. With respect to activities subject to an ITAAC, an applicant for a license may proceed at its own risk with design and procurement activities, and a licensee may proceed at its own risk with design, procurement, construction, and preoperational activities, even though the NRC may not have found that any particular ITAAC has been met.

2. The licensee who references this appendix shall notify the NRC that the required inspections, tests, and analyses in the ITAAC have been successfully completed and that the corresponding acceptance criteria have been met.

3. In the event that an activity is subject to an ITAAC, and the applicant or licensee who references this appendix has not demonstrated that the ITAAC has been met, the applicant or licensee may either take corrective actions to successfully complete that ITAAC, request an exemption from the ITAAC in accordance with Section VIII of this appendix and 10 CFR 52.97(b), or petition for rulemaking to amend this appendix by changing the requirements of the ITAAC, under 10 CFR 2.802 and 52.97(b). Such rulemaking changes to the ITAAC must meet the requirements of paragraph VIII.A.1 of this appendix.

B.1. The NRC shall ensure that the required inspections, tests, and analyses in the ITAAC are performed. The NRC shall verify that the inspections, tests, and analyses referenced by the licensee have been successfully completed and, based solely thereon, find the prescribed acceptance criteria have been met. At appropriate intervals during construction, the NRC shall publish notices of the successful completion of ITAAC in the Federal Register.

2. In accordance with 10 CFR 52.103(g), the Commission shall find that the acceptance criteria in the ITAAC for the license are met before fuel load.

3. After the Commission has made the finding required by 10 CFR 52.103(g), the ITAAC do not, by virtue of their inclusion within the DCD, constitute regulatory requirements either for licensees or for renewal of the license; except for specific ITAAC, which are the subject of a § 52.103(a) hearing, their expiration will occur upon final Commission action in such proceeding. However, subsequent modifications must comply with the Tier 1 and Tier 2 design descriptions in the plant-specific DCD unless the licensee has complied with the applicable requirements of 10 CFR 52.98 and Section VIII of this appendix.

X. Records and Reporting

A. Records.

1. The applicant for this appendix shall maintain a copy of the generic DCD that includes all generic changes to Tier 1, Tier 2, and the generic TS and other operational requirements. The applicant shall maintain the proprietary and safeguards information referenced in the generic DCD for the period that this appendix may be referenced, as specified in Section VII of this appendix.

2. An applicant or licensee who references this appendix shall maintain the plant-specific DCD to accurately reflect both generic changes to the generic DCD and plant-specific departures made under Section VIII of this appendix throughout the period of application and for the term of the license (including any period of renewal).

3. An applicant or licensee who references this appendix shall prepare and maintain written evaluations which provide the bases for the determinations required by Section VIII of this appendix. These evaluations must be retained throughout the period of application and for the term of the license (including any period of renewal).

B. Reporting.

1. An applicant or licensee who references this appendix shall submit a report to the NRC containing a brief description of any plant-specific departures from the DCD, including a summary of the evaluation of each. This report must be filed in accordance with the filing requirements applicable to reports in 10 CFR 52.3.

2. An applicant or licensee who references this appendix shall submit updates to its DCD, which reflect the generic changes to and plant-specific departures from the generic DCD made under Section VIII of this appendix. These updates must be filed under the filing requirements applicable to final safety analysis report updates in 10 CFR 52.3 and 50.71(e).

3. The reports and updates required by paragraphs X.B.1 and X.B.2 must be submitted as follows:

a. On the date that an application for a license referencing this appendix is submitted, the application must include the report and any updates to the generic DCD.

b. During the interval from the date of application for a license to the date the Commission makes the finding required by 10 CFR 52.103(g), the report must be submitted semi-annually. Updates to the plant-specific DCD must be submitted annually and may be

submitted along with amendments to the application.

c. After the Commission makes the finding required by 10 CFR 52.103(g), the reports and updates to the plant-specific DCD must be submitted, along with updates to the site-specific portion of the final safety analysis report for the facility, at the intervals required by 10 CFR 50.59(d)(2) and 50.71(e), respectively, or at shorter intervals as specified in the license.

[72 FR 49517, Aug. 28, 2007, as amended at 76 FR 72085, Nov. 22, 2011; 84 FR 63568, Nov. 18, 2019]

APPENDIX D TO PART 52—DESIGN CERTIFICATION RULE FOR THE AP1000 DESIGN

I. INTRODUCTION

Appendix D constitutes the standard design certification for the AP1000[1] design, in accordance with 10 CFR part 52, subpart B. The applicant for certification of the AP1000 design is Westinghouse Electric Company LLC.

II. DEFINITIONS

A. *Generic design control document (generic DCD)* means the documents containing the Tier 1 and Tier 2 information and generic technical specifications that are incorporated by reference into this appendix.

B. *Generic technical specifications* means the information required by 10 CFR 50.36 and 50.36a for the portion of the plant that is within the scope of this appendix.

C. *Plant-specific DCD* means the document maintained by an applicant or licensee who references this appendix consisting of the information in the generic DCD as modified and supplemented by the plant-specific departures and exemptions made under Section VIII of this appendix.

D. *Tier 1* means the portion of the design-related information contained in the generic DCD that is approved and certified by this appendix (Tier 1 information). The design descriptions, interface requirements, and site parameters are derived from Tier 2 information. Tier 1 information includes:

1. Definitions and general provisions;
2. Design descriptions;
3. Inspections, tests, analyses, and acceptance criteria (ITAAC);
4. Significant site parameters; and
5. Significant interface requirements.

E. *Tier 2* means the portion of the design-related information contained in the generic DCD that is approved but not certified by this appendix (Tier 2 information). Compliance with Tier 2 is required, but generic changes to and plant-specific departures from Tier 2 are governed by Section VIII of this appendix. Compliance with Tier 2 provides a sufficient, but not the only acceptable, method for complying with Tier 1. Compliance methods differing from Tier 2 must satisfy the change process in Section VIII of this appendix. Regardless of these differences, an applicant or licensee must meet the requirement in Section III.B of this appendix to reference Tier 2 when referencing Tier 1. Tier 2 information includes:

1. Information required by §§52.47(a) and 52.47(c), with the exception of generic technical specifications and conceptual design information;
2. Supporting information on the inspections, tests, and analyses that will be performed to demonstrate that the acceptance criteria in the ITAAC have been met; and
3. Combined license (COL) action items (COL license information), which identify certain matters that must be addressed in the site-specific portion of the final safety analysis report (FSAR) by an applicant who references this appendix. These items constitute information requirements but are not the only acceptable set of information in the FSAR. An applicant may depart from or omit these items, provided that the departure or omission is identified and justified in the FSAR. After issuance of a construction permit or COL, these items are not requirements for the licensee unless such items are restated in the FSAR.
4. The investment protection short-term availability controls in Section 16.3 of the DCD.

F. *Tier 2** means the portion of the Tier 2 information, designated as such in the generic DCD, which is subject to the change process in Section VIII.B.6 of this appendix. This designation expires for some Tier 2* information under paragraph VIII.B.6.

G. *Departure from a method of evaluation described in the plant-specific DCD used in establishing the design bases or in the safety analyses* means:

1. Changing any of the elements of the method described in the plant-specific DCD unless the results of the analysis are conservative or essentially the same; or
2. Changing from a method described in the plant-specific DCD to another method unless that method has been approved by the NRC for the intended application.

H. All other terms in this appendix have the meaning set out in 10 CFR 50.2, or 52.1, or Section 11 of the Atomic Energy Act of 1954, as amended, as applicable.

III. SCOPE AND CONTENTS

A. Tier 1, Tier 2 (including the investment protection short-term availability controls in Section 16.3), and the generic TSs in the AP1000 Design Control Document, Revision 19, (Public Version) (AP1000 DCD), APP–GW–

[1] AP1000 is a trademark of Westinghouse Electric Company LLC.

GL–702, dated June 13, 2011, and the amendments thereto in DCP__NRC__003343, Supplemental Information to Support the AP1000 Design Certification Extension (Non-proprietary), APP–GW–GL–705 Rev. 0, copyright 2021 (Supplemental Information), are approved for incorporation by reference by the Director of the Office of the Federal Register under 5 U.S.C. 552(a) and 1 CFR part 51. Copies of the generic DCD and Supplemental Information may be obtained from Zachary S. Harper, Manager, Licensing Engineering, Westinghouse Electric Company, 1000 Westinghouse Drive, Cranberry Township, Pennsylvania 16066, telephone (412) 374–5093. Copies of the generic DCD and Supplemental Information are also available for examination and copying at the NRC's PDR, Room O–1F21, One White Flint North, 11555 Rockville Pike, Rockville, Maryland 20852. Copies are available, by appointment, for examination at the NRC Library, Two White Flint North, 11545 Rockville Pike, Rockville, Maryland 20852, telephone (301) 415–5610, email *Library.Resource@nrc.gov*. The generic DCD and Supplemental Information can also be viewed online in the NRC Library at *https://www.nrc.gov/reading-rm/adams.html* by searching under ADAMS Accession Nos. ML11171A500 and ML21081A023. If you do not have access to ADAMS or if you have problems accessing documents located in ADAMS, contact the NRC's PDR reference staff at 1–800–397–4209, at 301–415–3747, or by email at *PDR.Resource@nrc.gov*. Copies of the AP1000 materials are available in the ADAMS Public Documents Collection. All approved material is available for inspection at the National Archives and Records Administration (NARA). For information on the availability of this material at NARA, email at *fr.inspection@nara.gov* or go to *https://www.archives.gov/federal-register/cfr/ibr-locations.html*.

B. An applicant or licensee referencing this appendix, in accordance with Section IV of this appendix, shall incorporate by reference and comply with the requirements of this appendix, including Tier 1, Tier 2 (including the investment protection short-term availability controls in Section 16.3 of the DCD), and the generic TS except as otherwise provided in this appendix. Conceptual design information in the generic DCD and the evaluation of severe accident mitigation design alternatives in appendix 1B of the generic DCD are not part of this appendix.

C. If there is a conflict between Tier 1 and Tier 2 of the DCD, then Tier 1 controls.

D.1. If there is a conflict between the generic DCD and either the application for the initial design certification of the AP1000 design or NUREG–1793, ''Final Safety Evaluation Report Related to Certification of the Westinghouse Standard Design,'' and Supplement No. 1, then the generic DCD controls.

2. If there is a conflict between the generic DCD and either the application for Amendment 1 to the design certification of the AP1000 design or NUREG–1793, ''Final Safety Evaluation Report Related to Certification of the Westinghouse Standard Design,'' Supplement No. 2, then the generic DCD controls.

3. The generic DCD controls if there is a conflict between the generic DCD and any of the following Safety Evaluations (SEs) for the matters discussed in the ''Verification Evaluation Report,'' May 11, 2021 (ADAMS Accession No. ML21131A221):

a. SE for Southern Nuclear Company's (SNC) Vogtle Units 3 and 4, respectively, license amendment request (LAR) 16–026, February 27, 2017 (ADAMS Accession No. ML17024A307);

b. SE for SNC Vogtle Units 3 and 4, respectively, LAR–17–023, April 20, 2018 (ADAMS Accession No. ML18085A628);

c. SE for SNC Vogtle Units 3 and 4, respectively, LAR 17–001, February 1, 2018 (ADAMS Accession No. ML18011A894);

d. SE for SNC Vogtle Units 3 and 4, respectively, LAR–17–003, August 23, 2017 (ADAMS Accession No. ML17213A224);

e. SE for SNC Vogtle Units 3 and 4, respectively, LAR–16–006, February 24, 2017 (ADAMS Accession No. ML16320A174);

f. SE for Florida Power and Light Company's Turkey Point Nuclear Generating Units 6 and 7, respectively, Chapter 16, ''Technical Specifications,'' November 10, 2016 (ADAMS Accession No. ML16266A185).

E. Design activities for structures, systems, and components that are wholly outside the scope of this appendix may be performed using site characteristics, provided the design activities do not affect the DCD or conflict with the interface requirements.

IV. Additional Requirements and Restrictions

A. An applicant for a combined license that wishes to reference this appendix shall, in addition to complying with the requirements of 10 CFR 52.77, 52.79, and 52.80, comply with the following requirements:

1. Incorporate by reference, as part of its application, this appendix.

2. Include, as part of its application:

a. A plant-specific DCD containing the same type of information and using the same organization and numbering as the generic DCD for the AP1000 design, as modified and supplemented by the applicant's exemptions and departures;

b. The reports on departures from and updates to the plant-specific DCD required by paragraph X.B of this appendix;

c. Plant-specific TS, consisting of the generic and site-specific TS that are required by 10 CFR 50.36 and 50.36a;

d. Information demonstrating compliance with the site parameters and interface requirements;

e. Information that addresses the COL action items; and

f. Information required by 10 CFR 52.47(a) that is not within the scope of this appendix.

3. Include, in the plant-specific DCD, the sensitive unclassified non-safeguards information (including proprietary information) and safeguards information referenced in the AP1000 DCD.

4. Include, as part of its application, a demonstration that an entity other than Westinghouse is qualified to supply the AP1000 design, unless Westinghouse supplies the design for the applicant's use.

B. The Commission reserves the right to determine in what manner this appendix may be referenced by an applicant for a construction permit or operating license under 10 CFR part 50.

V. Applicable Regulations

A.1. Except as indicated in paragraph B of this section, the regulations that apply to the AP1000 design are in 10 CFR parts 20, 50, 73, and 100, codified as of January 23, 2006, that are applicable and technically relevant, as described in the FSER (NUREG–1793) and Supplement No. 1. The regulations that apply to those portions of the AP1000 design as amended by Supplemental Information are in 10 CFR parts 20, 50, 52, 73, and 100, codified as of December 6, 2021, that are applicable and technically relevant, as described in the SEs listed in paragraphs III.D.3.a through III.D.3.f of this appendix.

2. The regulations that apply to those portions of the AP1000 design approved by Amendment 1 are in 10 CFR parts 20, 50, 73, and 100, codified as of December 30, 2011, that are applicable and technically relevant, as described in the Supplement No. 2 of the FSER (NUREG–1793).

B. The AP1000 design is exempt from portions of the following regulations:

1. Paragraph (f)(2)(iv) of 10 CFR 50.34—Plant Safety Parameter Display Console;

2. Paragraph (c)(1) of 10 CFR 50.62—Auxiliary (or emergency) feedwater system; and

3. Appendix A to 10 CFR part 50, GDC 17—Second offsite power supply circuit.

VI. Issue Resolution

A. The Commission has determined that the structures, systems, components, and design features of the AP1000 design comply with the provisions of the Atomic Energy Act of 1954, as amended, and the applicable regulations identified in Section V of this appendix; and therefore, provide adequate protection to the health and safety of the public. A conclusion that a matter is resolved includes the finding that additional or alternative structures, systems, components, design features, design criteria, testing, analyses, acceptance criteria, or justifications are not necessary for the AP1000 design.

B. The Commission considers the following matters resolved within the meaning of 10 CFR 52.63(a)(5) in subsequent proceedings for issuance of a COL, amendment of a COL, or renewal of a COL, proceedings held under 10 CFR 52.103, and enforcement proceedings involving plants referencing this appendix:

1. All nuclear safety issues, except for the generic TS and other operational requirements, associated with the information in the FSER, Supplement Nos. 1 and 2, and the Verification Evaluation Report (ADAMS Accession No. ML21131A221); Tier 1 and Tier 2 (including referenced information, which the context indicates is intended as requirements, and the investment protection short-term availability controls in Section 16.3 of the DCD) as amended by Supplemental Information; and the rulemaking records for initial certification, Amendment 1, and the duration extension of the AP1000 design;

2. All nuclear safety and safeguards issues associated with the referenced sensitive unclassified non-safeguards information (including proprietary information) and safeguards information which, in context, are intended as requirements in the generic DCD for the AP1000 design;

3. All generic changes to the DCD under and in compliance with the change processes in Sections VIII.A.1 and VIII.B.1 of this appendix;

4. All exemptions from the DCD under and in compliance with the change processes in Sections VIII.A.4 and VIII.B.4 of this appendix, but only for that plant;

5. All departures from the DCD that are approved by license amendment, but only for that plant;

6. Except as provided in paragraph VIII.B.5.g of this appendix, all departures from Tier 2 under and in compliance with the change processes in paragraph VIII.B.5 of this appendix that do not require prior NRC approval, but only for that plant;

7. All environmental issues concerning severe accident mitigation design alternatives associated with the information in the NRC's EA for the AP1000 design, Appendix 1B of Revision 15 of the generic DCD, the NRC's final EA for Amendment 1 to the AP1000 design, Appendix 1B of Revision 19 of the generic DCD, and the NRC's final EA relating to the extension of the AP1000 standard design certification, for plants referencing this appendix whose site parameters are within those specified in the severe accident mitigation design alternatives evaluation.

C. The Commission does not consider operational requirements for an applicant or licensee who references this appendix to be matters resolved within the meaning of 10 CFR 52.63(a)(5). The Commission reserves the

right to require operational requirements for an applicant or licensee who references this appendix by rule, regulation, order, or license condition.

D. Except under the change processes in Section VIII of this appendix, the Commission may not require an applicant or licensee who references this appendix to:

1. Modify structures, systems, components, or design features as described in the generic DCD;

2. Provide additional or alternative structures, systems, components, or design features not discussed in the generic DCD; or

3. Provide additional or alternative design criteria, testing, analyses, acceptance criteria, or justification for structures, systems, components, or design features discussed in the generic DCD.

E. The NRC will specify at an appropriate time the procedures to be used by an interested person who wishes to review portions of the design certification or references containing safeguards information or sensitive unclassified non-safeguards information (including proprietary information, such as trade secrets or financial information obtained from a person that are privileged or confidential (10 CFR 2.390 and 10 CFR part 9)), for the purpose of participating in the hearing required by 10 CFR 52.85, the hearing provided under 10 CFR 52.103, or in any other proceeding relating to this appendix in which interested persons have a right to request an adjudicatory hearing.

VII. Duration of This Appendix

This appendix may be referenced for a period of 20 years from February 27, 2006, except as provided for in 10 CFR 52.55(b) and 52.57(b). This appendix remains valid for an applicant or licensee who references this appendix until the application is withdrawn or the license expires, including any period of extended operation under a renewed license.

VIII. Processes for Changes and Departures

A. Tier 1 information.

1. Generic changes to Tier 1 information are governed by the requirements in 10 CFR 52.63(a)(1).

2. Generic changes to Tier 1 information are applicable to all applicants or licensees who reference this appendix, except those for which the change has been rendered technically irrelevant by action taken under paragraphs A.3 or A.4 of this section.

3. Departures from Tier 1 information that are required by the Commission through plant-specific orders are governed by the requirements in 10 CFR 52.63(a)(4).

4. Exemptions from Tier 1 information are governed by the requirements in 10 CFR 52.63(b)(1) and 52.98(f). The Commission will deny a request for an exemption from Tier 1, if it finds that the design change will result in a significant decrease in the level of safety otherwise provided by the design.

B. Tier 2 information.

1. Generic changes to Tier 2 information are governed by the requirements in 10 CFR 52.63(a)(1).

2. Generic changes to Tier 2 information are applicable to all applicants or licensees who reference this appendix, except those for which the change has been rendered technically irrelevant by action taken under paragraphs B.3, B.4, B.5, or B.6 of this section.

3. The Commission may not require new requirements on Tier 2 information by plant-specific order while this appendix is in effect under 10 CFR 52.55 or 52.61, unless:

a. A modification is necessary to secure compliance with the Commission's regulations applicable and in effect at the time this appendix was approved, as set forth in Section V of this appendix, or to ensure adequate protection of the public health and safety or the common defense and security; and

b. Special circumstances as defined in 10 CFR 50.12(a) are present.

4. An applicant or licensee who references this appendix may request an exemption from Tier 2 information. The Commission may grant such a request only if it determines that the exemption will comply with the requirements of 10 CFR 50.12(a). The Commission will deny a request for an exemption from Tier 2, if it finds that the design change will result in a significant decrease in the level of safety otherwise provided by the design. The grant of an exemption to an applicant must be subject to litigation in the same manner as other issues material to the license hearing. The grant of an exemption to a licensee must be subject to an opportunity for a hearing in the same manner as license amendments.

5.a. An applicant or licensee who references this appendix may depart from Tier 2 information, without prior NRC approval, unless the proposed departure involves a change to or departure from Tier 1 information, Tier 2* information, or the TS, or requires a license amendment under paragraphs B.5.b or B.5.c of this section. When evaluating the proposed departure, an applicant or licensee shall consider all matters described in the plant-specific DCD.

b. A proposed departure from Tier 2, other than one affecting resolution of a severe accident issue identified in the plant-specific DCD or one affecting information required by 10 CFR52.47(a)(28) to address 10 CFR 50.150, requires a license amendment if it would:

(1) Result in more than a minimal increase in the frequency of occurrence of an accident previously evaluated in the plant-specific DCD;

(2) Result in more than a minimal increase in the likelihood of occurrence of a malfunction of a structure, system, or component (SSC) important to safety and previously evaluated in the plant-specific DCD;

(3) Result in more than a minimal increase in the consequences of an accident previously evaluated in the plant-specific DCD;

(4) Result in more than a minimal increase in the consequences of a malfunction of an SSC important to safety previously evaluated in the plant-specific DCD;

(5) Create a possibility for an accident of a different type than any evaluated previously in the plant-specific DCD;

(6) Create a possibility for a malfunction of an SSC important to safety with a different result than any evaluated previously in the plant-specific DCD;

(7) Result in a design basis limit for a fission product barrier as described in the plant-specific DCD being exceeded or altered; or

(8) Result in a departure from a method of evaluation described in the plant-specific DCD used in establishing the design bases or in the safety analyses.

c. A proposed departure from Tier 2 affecting resolution of an ex-vessel severe accident design feature identified in the plant-specific DCD, requires a license amendment if:

(1) There is a substantial increase in the probability of an ex-vessel severe accident such that a particular ex-vessel severe accident previously reviewed and determined to be not credible could become credible; or

(2) There is a substantial increase in the consequences to the public of a particular ex-vessel severe accident previously reviewed.

d. If an applicant or licensee proposes to depart from the information required by 10 CFR 52.47(a)(28) to be included in the FSAR for the standard design certification, then the applicant or licensee shall consider the effect of the changed feature or capability on the original assessment required by 10 CFR 50.150(a). The applicant or licensee must also document how the modified design features and functional capabilities continue to meet the assessment requirements in 10 CFR 50.150(a)(1) in accordance with Section X of this appendix.

e. If a departure requires a license amendment under paragraph B.5.b or B.5.c of this section, it is governed by 10 CFR 50.90.

f. A departure from Tier 2 information that is made under paragraph B.5 of this section does not require an exemption from this appendix.

g. A party to an adjudicatory proceeding for either the issuance, amendment, or renewal of a license or for operation under 10 CFR 52.103(a), who believes that an applicant or licensee who references this appendix has not complied with paragraph VIII.B.5 of this appendix when departing from Tier 2 information, may petition to admit into the proceeding such a contention. In addition to compliance with the general requirements of 10 CFR 2.309, the petition must demonstrate that the departure does not comply with paragraph VIII.B.5 of this appendix. Further, the petition must demonstrate that the change bears on an asserted noncompliance with an ITAAC acceptance criterion in the case of a 10 CFR 52.103 preoperational hearing, or that the change bears directly on the amendment request in the case of a hearing on a license amendment. Any other party may file a response. If, on the basis of the petition and any response, the presiding officer determines that a sufficient showing has been made, the presiding officer shall certify the matter directly to the Commission for determination of the admissibility of the contention. The Commission may admit such a contention if it determines the petition raises a genuine issue of material fact regarding compliance with paragraph VIII.B.5 of this appendix.

6.a. An applicant who references this appendix may not depart from Tier 2* information, which is designated with italicized text or brackets and an asterisk in the generic DCD, without NRC approval. The departure will not be considered a resolved issue, within the meaning of Section VI of this appendix and 10 CFR 52.63(a)(5).

b. A licensee who references this appendix may not depart from the following Tier 2* matters without prior NRC approval. A request for a departure will be treated as a request for a license amendment under 10 CFR 50.90.

(1) Maximum fuel rod average burn-up.

(2) Fuel principal design requirements.

(3) Fuel criteria evaluation process.

(4) Fire areas.

(5) Reactor coolant pump type.

(6) Small-break loss-of-coolant accident (LOCA) analysis methodology.

(7) Screen design criteria.

(8) Heat sink data for containment pressure analysis.

c. A licensee who references this appendix may not, before the plant first achieves full power following the finding required by 10 CFR 52.103(g), depart from the following Tier 2* matters except under paragraph B.6.b of this section. After the plant first achieves full power, the following Tier 2* matters revert to Tier 2 status and are subject to the departure provisions in paragraph B.5 of this section.

(1) Nuclear Island structural dimensions.

(2) American Society of Mechanical Engineers Boiler & Pressure Vessel Code (ASME Code) piping design and welding restrictions, and ASME Code Cases.

(3) Design Summary of Critical Sections.

(4) American Concrete Institute (ACI) 318, ACI 349, American National Standards Institute/American Institute of Steel Construction (ANSI/AISC)N–690, and American Iron

and Steel Institute (AISI), ''Specification for the Design of Cold Formed Steel Structural Members, Part 1 and 2,'' 1996 Edition and 2000 Supplement.

(5) Definition of critical locations and thicknesses.

(6) Seismic qualification methods and standards.

(7) Nuclear design of fuel and reactivity control system, except burn-up limit.

(8) Motor-operated and power-operated valves.

(9) Instrumentation and control system design processes, methods, and standards.

(10) Passive residual heat removal (PRHR) natural circulation test (first plant only).

(11) Automatic depressurization system (ADS) and core make-up tank (CMT) verification tests (first three plants only).

(12) Polar crane parked orientation.

(13) Piping design acceptance criteria.

(14) Containment vessel design parameters, including ASME Code, Section III, Subsection NE.

(15) Human factors engineering.

(16) Steel composite structural module details.

d. Departures from Tier 2* information that are made under paragraph B.6 of this section do not require an exemption from this appendix.

C. Operational requirements.

1. Generic changes to generic TS and other operational requirements that were completely reviewed and approved in the design certification rulemaking and do not require a change to a design feature in the generic DCD are governed by the requirements in 10 CFR 50.109. Generic changes that require a change to a design feature in the generic DCD are governed by the requirements in paragraphs A or B of this section.

2. Generic changes to generic TS and other operational requirements are applicable to all applicants who reference this appendix, except those for which the change has been rendered technically irrelevant by action taken under paragraphs C.3 or C.4 of this section.

3. The Commission may require plant-specific departures on generic TS and other operational requirements that were completely reviewed and approved, provided a change to a design feature in the generic DCD is not required and special circumstances as defined in 10 CFR 2.335 are present. The Commission may modify or supplement generic TS and other operational requirements that were not completely reviewed and approved or require additional TS and other operational requirements on a plant-specific basis, provided a change to a design feature in the generic DCD is not required.

4. An applicant who references this appendix may request an exemption from the generic technical specifications or other operational requirements. The Commission may grant such a request only if it determines that the exemption will comply with the requirements of 10 CFR 52.7. The grant of an exemption must be subject to litigation in the same manner as other issues material to the license hearing.

5. A party to an adjudicatory proceeding for either the issuance, amendment, or renewal of a license, or for operation under 10 CFR 52.103(a), who believes that an operational requirement approved in the DCD or a TS derived from the generic TS must be changed may petition to admit such a contention into the proceeding. The petition must comply with the general requirements of 10 CFR 2.309 and must demonstrate why special circumstances as defined in 10 CFR 2.335 are present, or demonstrate compliance with the Commission's regulations in effect at the time this appendix was approved, as set forth in Section V of this appendix. Any other party may file a response to the petition. If, on the basis of the petition and any response, the presiding officer determines that a sufficient showing has been made, the presiding officer shall certify the matter directly to the Commission for determination of the admissibility of the contention. All other issues with respect to the plant-specific TS or other operational requirements are subject to a hearing as part of the license proceeding.

6. After issuance of a license, the generic TS have no further effect on the plant-specific TS. Changes to the plant-specific TS will be treated as license amendments under 10 CFR 50.90.

IX. Inspections, Tests, Analyses, and Acceptance Criteria (ITAAC)

A.1. An applicant or licensee who references this appendix shall perform and demonstrate conformance with the ITAAC before fuel load. With respect to activities subject to an ITAAC, an applicant for a license may proceed at its own risk with design and procurement activities. A licensee may also proceed at its own risk with design, procurement, construction, and preoperational activities, even though the NRC may not have found that any particular ITAAC has been met.

2. The licensee who references this appendix shall notify the NRC that the required inspections, tests, and analyses in the ITAAC have been successfully completed and that the corresponding acceptance criteria have been met.

3. If an activity is subject to an ITAAC and the applicant or licensee who references this appendix has not demonstrated that the ITAAC has been met, the applicant or licensee may either take corrective actions to successfully complete that ITAAC, request an exemption from the ITAAC under Section VIII of this appendix and 10 CFR 52.97(b), or

petition for rulemaking to amend this appendix by changing the requirements of the ITAAC, under 10 CFR 2.802 and 52.97(b). Such rulemaking changes to the ITAAC must meet the requirements of paragraph VIII.A.1 of this appendix.

B.1. The NRC shall ensure that the required inspections, tests, and analyses in the ITAAC are performed. The NRC shall verify that the inspections, tests, and analyses referenced by the licensee have been successfully completed and, based solely thereon, find that the prescribed acceptance criteria have been met. At appropriate intervals during construction, the NRC shall publish notices of the successful completion of ITAAC in the FEDERAL REGISTER.

2. In accordance with 10 CFR 52.103(g), the Commission shall find that the acceptance criteria in the ITAAC for the license are met before fuel load.

3. After the Commission has made the finding required by 10 CFR 52.103(g), the ITAAC do not, by virtue of their inclusion within the DCD, constitute regulatory requirements either for licensees or for renewal of the license; except for specific ITAAC, which are the subject of a § 52.103(a) hearing, their expiration will occur upon final Commission action in such a proceeding. However, subsequent modifications must comply with the Tier 1 and Tier 2 design descriptions in the plant-specific DCD unless the licensee has complied with the applicable requirements of 10 CFR 52.98 and Section VIII of this appendix.

X. RECORDS AND REPORTING

A. Records

1. The applicant for this appendix shall maintain a copy of the generic DCD that includes all generic changes it makes to Tier 1 and Tier 2, and the generic TS and other operational requirements. The applicant shall maintain sensitive unclassified non-safeguards information (including proprietary information) and safeguards information referenced in the generic DCD for the period that this appendix may be referenced, as specified in Section VII of this appendix.

2. An applicant or licensee who references this appendix shall maintain the plant-specific DCD to accurately reflect both generic changes to the generic DCD and plant-specific departures made under Section VIII of this appendix throughout the period of application and for the term of the license (including any period of renewal).

3. An applicant or licensee who references this appendix shall prepare and maintain written evaluations which provide the bases for the determinations required by Section VIII of this appendix. These evaluations must be retained throughout the period of application and for the term of the license (including any period of renewal).

4.a. The applicant for the AP1000 design shall maintain a copy of the AIA performed to comply with the requirements of 10 CFR 50.150(a) for the term of the certification (including any period of renewal).

b. An applicant or licensee who references this appendix shall maintain a copy of the AIA performed to comply with the requirements of 10 CFR 50.150(a) throughout the pendency of the application and for the term of the license (including any period of renewal).

B. Reporting

1. An applicant or licensee who references this appendix shall submit a report to the NRC containing a brief description of any plant-specific departures from the DCD, including a summary of the evaluation of each. This report must be filed in accordance with the filing requirements applicable to reports in 10 CFR 52.3.

2. An applicant or licensee who references this appendix shall submit updates to its DCD, which reflect the generic changes to and plant-specific departures from the generic DCD made under Section VIII of this appendix. These updates must be filed under the filing requirements applicable to final safety analysis report updates in 10 CFR 52.3 and 50.71(e).

3. The reports and updates required by paragraphs X.B.1 and X.B.2 must be submitted as follows:

a. On the date that an application for a license referencing this appendix is submitted, the application must include the report and any updates to the generic DCD.

b. During the interval from the date of application for a license to the date the Commission makes its findings required by 10 CFR 52.103(g), the report must be submitted semi-annually. Updates to the plant-specific DCD must be submitted annually and may be submitted along with amendments to the application.

c. After the Commission makes the finding required by 10 CFR 52.103(g), the reports and updates to the plant-specific DCD must be submitted, along with updates to the site-specific portion of the final safety analysis report for the facility, at the intervals required by 10 CFR 50.59(d)(2) and 50.71(e)(4), respectively, or at shorter intervals as specified in the license.

[72 FR 49517, Aug. 28, 2007, as amended at 76 FR 82102, Dec. 30, 2011; 84 FR 63568, Nov. 18, 2019; 86 FR 52598, Sept. 22, 2021]

APPENDIX E TO PART 52—DESIGN CERTIFICATION RULE FOR THE ESBWR DESIGN

I. INTRODUCTION

Appendix E constitutes the standard design certification for the Economic Simplified Boiling-Water Reactor (ESBWR) design, in accordance with 10 CFR part 52, subpart B. The applicant for certification of the ESBWR design is GE-Hitachi Nuclear Energy.

II. DEFINITIONS

A. *Generic design control document (generic DCD)* means the document containing the Tier 1 and Tier 2 information and generic technical specifications that is incorporated by reference into this appendix.

B. *Generic technical specifications (generic TS)* means the information required by 10 CFR 50.36 and 50.36a for the portion of the plant that is within the scope of this appendix.

C. *Plant-specific DCD* means that portion of the combined license (COL) final safety analysis report (FSAR) that sets forth both the generic DCD information and any plant-specific changes to generic DCD information.

D. *Tier 1* means the portion of the design-related information contained in the generic DCD that is approved and certified by this appendix (Tier 1 information). The design descriptions, interface requirements, and site parameters are derived from Tier 2 information. Tier 1 information includes:

1. Definitions and general provisions;
2. Design descriptions;
3. Inspections, tests, analyses, and acceptance criteria (ITAACs);
4. Significant site parameters; and
5. Significant interface requirements.

E. *Tier 2* means the portion of the design-related information contained in the generic DCD that is approved but not certified by this appendix (Tier 2 information). Compliance with Tier 2 is required, but generic changes to and plant-specific departures from Tier 2 are governed by Section VIII of this appendix. Compliance with Tier 2 provides a sufficient, but not the only acceptable, method for complying with Tier 1. Compliance methods differing from Tier 2 must satisfy the change process in Section VIII of this appendix. Regardless of these differences, an applicant or licensee must meet the requirement in paragraph III.B of this appendix to reference Tier 2 when referencing Tier 1. Tier 2 information includes:

1. Information required by §§52.47(a) and 52.47(c), with the exception of generic TS and conceptual design information;
2. Supporting information on the inspections, tests, and analyses that will be performed to demonstrate that the acceptance criteria in the ITAACs have been met;
3. COL action items (COL license information), which identify certain matters that must be addressed in the site-specific portion of the FSAR by an applicant who references this appendix. These items constitute information requirements but are not the only acceptable set of information in the FSAR. An applicant may depart from or omit these items, provided that the departure or omission is identified and justified in the FSAR. After issuance of a construction permit or COL, these items are not requirements for the licensee unless such items are restated in the FSAR; and
4. The availability controls in Appendix 19ACM of the DCD.

F. *Tier 2** means the portion of the Tier 2 information, designated as such in the generic DCD, which is subject to the change process in paragraph VIII.B.6 of this appendix. This designation expires for some Tier 2* information under paragraph VIII.B.6 of this appendix.

G. *Departure from a method of evaluation described in the plant-specific DCD used in establishing the design bases or in the safety analyses* means:

1. Changing any of the elements of the method described in the plant-specific DCD unless the results of the analysis are conservative or essentially the same; or
2. Changing from a method described in the plant-specific DCD to another method unless that method has been approved by the NRC for the intended application.

H. All other terms in this appendix have the meaning set out in 10 CFR 50.2, 10 CFR 52.1, or Section 11 of the Atomic Energy Act of 1954, as amended, as applicable.

III. SCOPE AND CONTENTS

A. Incorporation by reference approval. The documents in Table 1 are approved for incorporation by reference by the Director of the Office of the Federal Register under 5 U.S.C. 552(a) and 1 CFR part 51. You may obtain copies of the generic DCD from Jerald G. Head, Senior Vice President, Regulatory Affairs, GE-Hitachi Nuclear Energy, 3901 Castle Hayne Road, MC A–18, Wilmington, NC 28401, telephone: 1–910–819–5692. You can view the generic DCD online in the NRC Library at *http://www.nrc.gov/reading-rm/adams.html*. In ADAMS, search under the ADAMS Accession No. listed in Table 1. If you do not have access to ADAMS or if you have problems accessing documents located in ADAMS, contact the NRC's Public Document Room (PDR) reference staff at 1–800–397–4209, 1–301–415–3747, or by email at *PDR.Resource@nrc.gov*. These documents can also be viewed at the Federal rulemaking Web site, *http://www.regulations.gov*, by searching for documents filed under Docket ID NRC–2010–0135. Copies of these documents are available for examination and copying at the NRC's PDR located at Room O–1F21, One

White Flint North, 11555 Rockville Pike, Rockville, Maryland 20852. Copies are also available for examination at the NRC Library located at Two White Flint North, 11545 Rockville Pike, Rockville, Maryland 20852, telephone: 301–415–5610, email: *Library.Resource@nrc.gov*. All approved material is available for inspection at the National Archives and Records Administration (NARA). For information on the availability of this material at NARA, call 1–202–741–6030 or go to *http://www.archives.gov/federal-register/cfr/ibrlocations.html*.

TABLE 1—DOCUMENTS APPROVED FOR INCORPORATION BY REFERENCE

Document No.	Document title	ADAMS Accession No.
GE Hitachi:		
26A6642AB Rev. 10	ESBWR Design Control Document, Revision 10, Tier 1, dated April 2014.	ML14104A929 (package)
26A6642AB Rev. 10	ESBWR Design Control Document, Revision 10, Tier 2, dated April 2014.	ML14104A929 (package)
Bechtel Power Corporation:		
BC–TOP–3–A	''Tornado and Extreme Wind Design Criteria for Nuclear Power Plants,'' Topical Report, Revision 3, August 1974.	ML14093A218
BC–TOP–9A	''Design of Structures for Missile Impact,'' Topical Report, Revision 2, September 1974.	ML14093A217
General Electric:		
GEZ–4982A	General Electric Large Steam Turbine Generator Quality Control Program, The STG Global Supply Chain Quality Management System (MFGGLO–GEZ–0010) Revision 1.2, February 7, 2006.	ML14093A215
GE Nuclear Energy:		
NEDO–11209–04A	''GE Nuclear Energy Quality Assurance Program Description,'' Class 1, Revision 8, March 31, 1989.	ML14093A209
NEDO–31960–A	''BWR Owners' Group Long-Term Stability Solutions Licensing Methodology,'' Class I, November 1995.	ML14093A212
NEDO–31960–A—Supplement 1.	''BWR Owners' Group Long-Term Stability Solutions Licensing Methodology,'' Class I, November 1995.	ML14093A211
NEDO–32465–A	GE Nuclear Energy and BWR Owners' Group, ''Reactor Stability Detect and Suppress Solutions Licensing Basis Methodology for Reload Applications,'' Class I, August 1996.	ML14093A210
GE-Hitachi Nuclear Energy:		
NEDO–33181	''NP–2010 COL Demonstration Project Quality Assurance Plan,'' Revision 6, August 2009.	ML14248A297
NEDO–33219	''ESBWR Human Factors Engineering Functional Requirements Analysis Implementation Plan,'' Revision 4, Class I, February 2010.	ML100350104
NEDO–33260	''Quality Assurance Requirements for Suppliers of Equipment and Services to the GEH ESBWR Project,'' Revision 5, Class I, April 2008.	ML14248A648
NEDO–33262	''ESBWR Human Factors Engineering Operating Experience Review Implementation Plan,'' Revision 3, Class I, January 2010.	ML100340030
NEDO–33266	''ESBWR Human Factors Engineering Staffing and Qualifications Implementation Plan,'' Revision 3, Class I, January 2010.	ML100350167
NEDO–33267	''ESBWR Human Factors Engineering Human Reliability Analysis Implementation Plan,'' Revision 4, Class I, January 2010.	ML100330609
NEDO–33277	''ESBWR Human Factors Engineering Human Performance Monitoring Implementation Plan,'' Revision 4, Class I, January 2010.	ML100270770
NEDO–33278	''ESBWR Human Factors Engineering Design Implementation Plan,'' Revision 4, Class I, January 2010.	ML100270468
NEDO–33289	''ESBWR Reliability Assurance Program,'' Revision 2, Class II, September 2008.	ML14248A662
NEDO–33337	''ESBWR Initial Core Transient Analyses,'' Revision 1, Class I, April 2009.	ML091130628
NEDO–33338	''ESBWR Feedwater Temperature Operating Domain Transient and Accident Analysis,'' Revision 1, Class I, May 2009.	ML091380173
NEDO–33373–A	''Dynamic, Load-Drop, and Thermal-Hydraulic Analyses for ESBWR Fuel Racks,'' Revision 5, Class I, October 2010.	ML102990226 (part 1) ML102990228 (part 2)
NEDO–33411	''Risk Significance of Structures, Systems and Components for the Design Phase of the ESBWR,'' Revision 2, Class I, February 2010.	ML100610417

B. An applicant or licensee referencing this appendix, in accordance with Section IV of this appendix, shall incorporate by reference and comply with the requirements of this appendix, including Tier 1, Tier 2 (including the availability controls in Appendix 19ACM of the DCD), and the generic TS except as otherwise provided in this appendix. Conceptual design information in the generic DCD and the evaluation of severe accident mitigation design alternatives in NEDO–33306, Revision 4, ''ESBWR Severe Accident Mitigation Design Alternatives,'' are not part of this appendix.

C. If there is a conflict between Tier 1 and Tier 2 of the DCD, then Tier 1 controls.

D. If there is a conflict between the generic DCD and either the application for design certification of the ESBWR design or NUREG–1966, ''Final Safety Evaluation Report Related to Certification of the ESBWR Standard Design,'' (FSER) and Supplement No. 1 to NUREG–1966, then the generic DCD controls.

E. Design activities for structures, systems, and components that are wholly outside the scope of this appendix may be performed using site characteristics, provided the design activities do not affect the DCD or conflict with the interface requirements.

IV. Additional Requirements and Restrictions

A. An applicant for a COL who references this appendix shall, in addition to complying with the requirements of §§ 52.77, 52.79, and 52.80, comply with the following requirements:

1. Incorporate by reference, as part of its application, this appendix.

2. Include, as part of its application:

a. A plant-specific DCD containing the same type of information and using the same organization and numbering as the generic DCD for the ESBWR design, either by including or incorporating by reference the generic DCD information, and as modified and supplemented by the applicant's exemptions and departures;

b. The reports on departures from and updates to the plant-specific DCD required by paragraph X.B of this appendix;

c. Plant-specific TS, consisting of the generic and site-specific TS that are required by 10 CFR 50.36 and 50.36a;

d. Information demonstrating that the site characteristics fall within the site parameters and that the interface requirements have been met;

e. Information that addresses the COL action items;

f. Information required by § 52.47(a) that is not within the scope of this appendix;

g. Information demonstrating that hurricane loads on those structures, systems, and components described in Section 3.3.2 of the generic DCD are either bounded by the total tornado loads analyzed in Section 3.3.2 of the generic DCD or will meet applicable NRC requirements with consideration of hurricane loads in excess of the total tornado loads; and hurricane-generated missile loads on those structures, systems, and components described in Section 3.5.2 of the generic DCD are either bounded by tornado-generated missile loads analyzed in Section 3.5.1.4 of the generic DCD or will meet applicable NRC requirements with consideration of hurricane-generated missile loads in excess of the tornado-generated missile loads; and

h. Information demonstrating that the spent fuel pool level instrumentation is designed to allow the connection of an independent power source, and that the instrumentation will maintain its design accuracy following a power interruption or change in power source without requiring recalibration.

3. Include, in the plant-specific DCD, the sensitive, unclassified, non-safeguards information (including proprietary information and security-related information) and safeguards information referenced in the ESBWR generic DCD.

4. Include, as part of its application, a demonstration that an entity other than GE-Hitachi Nuclear Energy is qualified to supply the ESBWR design unless GE-Hitachi Nuclear Energy supplies the design for the applicant's use.

B. The Commission reserves the right to determine in what manner this appendix may be referenced by an applicant for a construction permit or operating license under 10 CFR part 50.

V. Applicable Regulations

A. Except as indicated in paragraph B of this section, the regulations that apply to the ESBWR design are in 10 CFR parts 20, 50, 73, and 100, codified as of October 6, 2014, that are applicable and technically relevant, as described in the FSER (NUREG–1966) and Supplement No. 1.

B. The ESBWR design is exempt from portions of the following regulations:

1. Paragraph (f)(2)(iv) of 10 CFR 50.34—Separate Plant Safety Parameter Display Console.

VI. Issue Resolution

A. The Commission has determined that the structures, systems, components, and design features of the ESBWR design comply with the provisions of the Atomic Energy Act of 1954, as amended, and the applicable regulations identified in Section V of this appendix; and therefore, provide adequate protection to the health and safety of the public. A conclusion that a matter is resolved includes the finding that additional or alternative structures, systems, components, design features, design criteria, testing,

analyses, acceptance criteria, or justifications are not necessary for the ESBWR design.

B. The Commission considers the following matters resolved within the meaning of §52.63(a)(5) in subsequent proceedings for issuance of a COL, amendment of a COL, or renewal of a COL, proceedings held under §52.103, and enforcement proceedings involving plants referencing this appendix:

1. All nuclear safety issues associated with the information in the FSER and Supplement No. 1; Tier 1, Tier 2 (including referenced information, which the context indicates is intended as requirements, and the availability controls in Appendix 19ACM of the DCD), the 20 documents referenced in Table 1 of paragraph III.A, and the rulemaking record for certification of the ESBWR design, with the exception of: generic TS and other operational requirements such as human factors engineering procedure development and training program development in Sections 18.9 and 18.10 of the generic DCD; hurricane loads on those structures, systems, and components described in Section 3.3.2 of the generic DCD that are not bounded by the total tornado loads analyzed in Section 3.3.2 of the generic DCD; hurricane-generated missile loads on those structures, systems, and components described in Section 3.5.2 of the generic DCD that are not bounded by tornado-generated missile loads analyzed in Section 3.5.1.4 of the generic DCD; and spent fuel pool level instrumentation design in regard to the connection of an independent power source, and how the instrumentation will maintain its design accuracy following a power interruption or change in power source without recalibration;

2. All nuclear safety and safeguards issues associated with the referenced information in the 50 non-public documents in Tables 1.6–1 and 1.6–2 of Tier 2 of the DCD which contain sensitive unclassified non-safeguards information (including proprietary information and security-related information) and safeguards information and which, in context, are intended as requirements in the generic DCD for the ESBWR design, with the exception of human factors engineering procedure development and training program development in Chapters 18.9 and 18.10 of the generic DCD;

3. All generic changes to the DCD under and in compliance with the change processes in paragraphs VIII.A.1 and VIII.B.1 of this appendix;

4. All exemptions from the DCD under and in compliance with the change processes in paragraphs VIII.A.4 and VIII.B.4 of this appendix, but only for that plant;

5. All departures from the DCD that are approved by license amendment, but only for that plant;

6. Except as provided in paragraph VIII.B.5.g of this appendix, all departures from Tier 2 under and in compliance with the change processes in paragraph VIII.B.5 of this appendix that do not require prior NRC approval, but only for that plant;

7. All environmental issues concerning severe accident mitigation design alternatives associated with the information in the NRC's Environmental Assessment for the ESBWR design (ADAMS Accession No. ML111730382) and NEDO–33306, Revision 4, ''ESBWR Severe Accident Mitigation Design Alternatives,'' (ADAMS Accession No. ML102990433) for plants referencing this appendix whose site characteristics fall within those site parameters specified in NEDO–33306.

C. The Commission does not consider operational requirements for an applicant or licensee who references this appendix to be matters resolved within the meaning of §52.63(a)(5). The Commission reserves the right to require operational requirements for an applicant or licensee who references this appendix by rule, regulation, order, or license condition.

D. Except under the change processes in Section VIII of this appendix, the Commission may not require an applicant or licensee who references this appendix to:

1. Modify structures, systems, components, or design features as described in the generic DCD;

2. Provide additional or alternative structures, systems, components, or design features not discussed in the generic DCD; or

3. Provide additional or alternative design criteria, testing, analyses, acceptance criteria, or justification for structures, systems, components, or design features discussed in the generic DCD.

E. The NRC will specify at an appropriate time the procedures to be used by an interested person who seeks to review portions of the design certification or references containing safeguards information or sensitive unclassified non-safeguards information (including proprietary information, such as trade secrets and commercial or financial information obtained from a person that are privileged or confidential (10 CFR 2.390 and 10 CFR part 9), and security-related information), for the purpose of participating in the hearing required by §52.85, the hearing provided under §52.103, or in any other proceeding relating to this appendix in which interested persons have a right to request an adjudicatory hearing.

VII. Duration of This Appendix

This appendix may be referenced for a period of 15 years from November 14, 2014, except as provided for in §§52.55(b) and 52.57(b). This appendix remains valid for an applicant or licensee who references this appendix

until the application is withdrawn or the license expires, including any period of extended operation under a renewed license.

VIII. Processes for Changes and Departures

A. Tier 1 information

1. Generic changes to Tier 1 information are governed by the requirements in §52.63(a)(1).

2. Generic changes to Tier 1 information are applicable to all applicants or licensees who reference this appendix, except those for which the change has been rendered technically irrelevant by action taken under paragraphs A.3 or A.4 of this section.

3. Departures from Tier 1 information that are required by the Commission through plant-specific orders are governed by the requirements in §52.63(a)(4).

4. Exemptions from Tier 1 information are governed by the requirements in §§52.63(b)(1) and 52.98(f). The Commission will deny a request for an exemption from Tier 1, if it finds that the design change will result in a significant decrease in the level of safety otherwise provided by the design.

B. Tier 2 information

1. Generic changes to Tier 2 information are governed by the requirements in 10 CFR 52.63(a)(1).

2. Generic changes to Tier 2 information are applicable to all applicants or licensees who reference this appendix, except those for which the change has been rendered technically irrelevant by action taken under paragraphs B.3, B.4, B.5, or B.6 of this section.

3. The Commission may not require new requirements on Tier 2 information by plant-specific order while this appendix is in effect under 10 CFR 52.55 or 52.61, unless:

a. A modification is necessary to secure compliance with the Commission's regulations applicable and in effect at the time this appendix was approved, as set forth in Section V of this appendix, or to ensure adequate protection of the public health and safety or the common defense and security; and

b. Special circumstances as defined in 10 CFR 50.12(a) are present.

4. An applicant or licensee who references this appendix may request an exemption from Tier 2 information. The Commission may grant such a request only if it determines that the exemption will comply with the requirements of 10 CFR 50.12(a). The Commission will deny a request for an exemption from Tier 2, if it finds that the design change will result in a significant decrease in the level of safety otherwise provided by the design. The grant of an exemption to an applicant must be subject to litigation in the same manner as other issues material to the license hearing. The grant of an exemption to a licensee must be subject to an opportunity for a hearing in the same manner as license amendments.

5.a. An applicant or licensee who references this appendix may depart from Tier 2 information, without prior NRC approval, unless the proposed departure involves a change to or departure from Tier 1 information, Tier 2* information, or the TS, or requires a license amendment under paragraph B.5.b or B.5.c of this section. When evaluating the proposed departure, an applicant or licensee shall consider all matters described in the plant-specific DCD.

b. A proposed departure from Tier 2, other than one affecting resolution of a severe accident issue identified in the plant-specific DCD or one affecting information required by §52.47(a)(28) to address aircraft impacts, requires a license amendment if it would:

(1) Result in more than a minimal increase in the frequency of occurrence of an accident previously evaluated in the plant-specific DCD;

(2) Result in more than a minimal increase in the likelihood of occurrence of a malfunction of a structure, system, or component (SSC) important to safety and previously evaluated in the plant-specific DCD;

(3) Result in more than a minimal increase in the consequences of an accident previously evaluated in the plant-specific DCD;

(4) Result in more than a minimal increase in the consequences of a malfunction of an SSC important to safety previously evaluated in the plant-specific DCD;

(5) Create a possibility for an accident of a different type than any evaluated previously in the plant-specific DCD;

(6) Create a possibility for a malfunction of an SSC important to safety with a different result than any evaluated previously in the plant-specific DCD;

(7) Result in a design-basis limit for a fission product barrier as described in the plant-specific DCD being exceeded or altered; or

(8) Result in a departure from a method of evaluation described in the plant-specific DCD used in establishing the design bases or in the safety analyses.

c. A proposed departure from Tier 2 affecting resolution of an ex-vessel severe accident design feature identified in the plant-specific DCD, requires a license amendment if:

(1) There is a substantial increase in the probability of an ex-vessel severe accident such that a particular ex-vessel severe accident previously reviewed and determined to be not credible could become credible; or

(2) There is a substantial increase in the consequences to the public of a particular ex-vessel severe accident previously reviewed.

d. A proposed departure from Tier 2 information required by §52.47(a)(28) to address aircraft impacts shall consider the effect of

the changed design feature or functional capability on the original aircraft impact assessment required by 10 CFR 50.150(a). The applicant or licensee shall describe in the plant-specific DCD how the modified design features and functional capabilities continue to meet the aircraft impact assessment requirements in 10 CFR 50.150(a)(1).

e. If a departure requires a license amendment under paragraph B.5.b or B.5.c of this section, it is governed by 10 CFR 50.90.

f. A departure from Tier 2 information that is made under paragraph B.5 of this section does not require an exemption from this appendix.

g. A party to an adjudicatory proceeding for either the issuance, amendment, or renewal of a license or for operation under §52.103(a), who believes that an applicant or licensee who references this appendix has not complied with paragraph VIII.B.5 of this appendix when departing from Tier 2 information, may petition to admit into the proceeding such a contention. In addition to compliance with the general requirements of 10 CFR 2.309, the petition must demonstrate that the departure does not comply with paragraph VIII.B.5 of this appendix. Further, the petition must demonstrate that the change bears on an asserted noncompliance with an ITAAC acceptance criterion in the case of a §52.103 preoperational hearing, or that the change bears directly on the amendment request in the case of a hearing on a license amendment. Any other party may file a response. If, on the basis of the petition and any response, the presiding officer determines that a sufficient showing has been made, the presiding officer shall certify the matter directly to the Commission for determination of the admissibility of the contention. The Commission may admit such a contention if it determines the petition raises a genuine issue of material fact regarding compliance with paragraph VIII.B.5 of this appendix.

6.a. An applicant who references this appendix may not depart from Tier 2* information, which is designated with italicized text or brackets and an asterisk in the generic DCD, without NRC approval. The departure will not be considered a resolved issue, within the meaning of Section VI of this appendix and §52.63(a)(5).

b. A licensee who references this appendix may not depart from the following Tier 2* matters without prior NRC approval. A request for a departure will be treated as a request for a license amendment under 10 CFR 50.90.

(1) Fuel mechanical and thermal-mechanical design evaluation reports, including fuel burnup limits.

(2) Control rod mechanical and nuclear design reports.

(3) Fuel nuclear design report.

(4) Critical power correlation.

(5) Fuel licensing acceptance criteria.

(6) Control rod licensing acceptance criteria.

(7) Mechanical and structural design of spent fuel storage racks.

(8) Steam dryer pressure load analysis methodology.

c. A licensee who references this appendix may not, before the plant first achieves full power following the finding required by §52.103(g), depart from the following Tier 2* matters except under paragraph B.6.b of this section. After the plant first achieves full power, the following Tier 2* matters revert to Tier 2 status and are subject to the departure provisions in paragraph B.5 of this section.

(1) ASME Boiler and Pressure Vessel Code, Section III, Subsections NE (Division 1) and CC (Division 2) for containment vessel design.

(2) American Concrete Institute 349 and American National Standards Institute/American Institute of Steel Construction—N690.

(3) Power-operated valves.

(4) Equipment seismic qualification methods.

(5) Piping design acceptance criteria.

(6) Instrument setpoint methodology.

(7) Safety-Related Distribution Control and Information System performance specification and architecture.

(8) Safety System Logic and Control hardware and software.

(9) Human factors engineering design and implementation.

(10) First of a kind testing for reactor stability (first plant only).

(11) Reactor precritical heatup with reactor water cleanup/shutdown cooling (first plant only).

(12) Isolation condenser system heatup and steady state operation (first plant only).

(13) Power maneuvering in the feedwater temperature operating domain (first plant only).

(14) Load maneuvering capability (first plant only).

(15) Defense-in-depth stability solution evaluation test (first plant only).

d. Departures from Tier 2* information that are made under paragraph B.6 of this section do not require an exemption from this appendix.

C. Operational requirements.

1. Generic changes to generic TS and other operational requirements that were completely reviewed and approved in the design certification rulemaking and do not require a change to a design feature in the generic DCD are governed by the requirements in 10 CFR 50.109. Generic changes that require a change to a design feature in the generic DCD are governed by the requirements in paragraphs A or B of this section.

2. Generic changes to generic TS and other operational requirements are applicable to all applicants who reference this appendix, except those for which the change has been rendered technically irrelevant by action taken under paragraphs C.3 or C.4 of this section.

3. The Commission may require plant-specific departures on generic TS and other operational requirements that were completely reviewed and approved, provided a change to a design feature in the generic DCD is not required and special circumstances as defined in 10 CFR 2.335 are present. The Commission may modify or supplement generic TS and other operational requirements that were not completely reviewed and approved or require additional TS and other operational requirements on a plant-specific basis, provided a change to a design feature in the generic DCD is not required.

4. An applicant who references this appendix may request an exemption from the generic TS or other operational requirements. The Commission may grant such a request only if it determines that the exemption will comply with the requirements of § 52.7. The grant of an exemption must be subject to litigation in the same manner as other issues material to the license hearing.

5. A party to an adjudicatory proceeding for the issuance, amendment, or renewal of a license, or for operation under § 52.103(a), who believes that an operational requirement approved in the DCD or a TS derived from the generic TS must be changed may petition to admit such a contention into the proceeding. The petition must comply with the general requirements of 10 CFR 2.309 and must demonstrate why special circumstances as defined in 10 CFR 2.335 are present, or demonstrate compliance with the Commission's regulations in effect at the time this appendix was approved, as set forth in Section V of this appendix. Any other party may file a response to the petition. If, on the basis of the petition and any response, the presiding officer determines that a sufficient showing has been made, the presiding officer shall certify the matter directly to the Commission for determination of the admissibility of the contention. All other issues with respect to the plant-specific TS or other operational requirements are subject to a hearing as part of the license proceeding.

6. After issuance of a license, the generic TS have no further effect on the plant-specific TS. Changes to the plant-specific TS will be treated as license amendments under 10 CFR 50.90.

IX. [Reserved]

X. Records and Reporting

A. Records

1. The applicant for this appendix shall maintain a copy of the generic DCD that includes all generic changes it makes to Tier 1 and Tier 2, and the generic TS and other operational requirements. The applicant shall maintain the sensitive unclassified non-safeguards information (including proprietary information and security-related information) and safeguards information referenced in the generic DCD for the period that this appendix may be referenced, as specified in Section VII of this appendix.

2. An applicant or licensee who references this appendix shall maintain the plant-specific DCD to accurately reflect both generic changes to the generic DCD and plant-specific departures made under Section VIII of this appendix throughout the period of application and for the term of the license (including any period of renewal).

3. An applicant or licensee who references this appendix shall prepare and maintain written evaluations that provide the bases for the determinations required by Section VIII of this appendix. These evaluations must be retained throughout the period of application and for the term of the license (including any period of renewal).

4.a. The applicant for the ESBWR design shall maintain a copy of the aircraft impact assessment performed to comply with the requirements of 10 CFR 50.150(a) for the term of the certification (including any period of renewal).

b. An applicant or licensee who references this appendix shall maintain a copy of the aircraft impact assessment performed to comply with the requirements of 10 CFR 50.150(a) throughout the pendency of the application and for the term of the license (including any period of renewal).

B. Reporting

1. An applicant or licensee who references this appendix shall submit a report to the NRC containing a brief description of any plant-specific departures from the DCD, including a summary of the evaluation of each. This report must be filed in accordance with the filing requirements applicable to reports in § 52.3.

2. An applicant or licensee who references this appendix shall submit updates to its plant-specific DCD that reflect the generic changes to and plant-specific departures from the generic DCD made under Section VIII of this appendix. These updates shall be filed under the filing requirements applicable to final safety analysis report updates in 10 CFR 52.3 and 50.71(e).

3. The reports and updates required by paragraphs X.B.1 and X.B.2 of this appendix must be submitted as follows:

a. On the date that an application for a license referencing this appendix is submitted, the application must include the report and any updates to the generic DCD.

b. During the interval from the date of application for a license to the date the Commission makes its finding required by §52.103(g), the report must be submitted semi-annually. Updates to the plant-specific DCD must be submitted annually and may be submitted along with amendments to the application.

c. After the Commission makes the finding required by §52.103(g), the reports and updates to the plant-specific DCD must be submitted, along with updates to the site-specific portion of the final safety analysis report for the facility, at the intervals required by 10 CFR 50.59(d)(2) and 50.71(e)(4), respectively, or at shorter intervals as specified in the license.

[79 FR 61983, Oct. 15, 2014, as amended at 84 FR 63568, Nov. 18, 2019; 86 FR 43402, Aug. 9, 2021]

APPENDIX F TO PART 52—DESIGN CERTIFICATION RULE FOR THE APR1400 DESIGN

I. INTRODUCTION

Appendix F constitutes the standard design certification for the Advanced Power Reactor 1400 (APR1400) design, in accordance with 10 CFR part 52, subpart B. The applicant for certification of the APR1400 design is Korea Electric Power Corporation and Korea Hydro & Nuclear Power Co., Ltd. (KEPCO/KHNP).

II. DEFINITIONS

A. *Generic design control document (generic DCD)* means the document containing the Tier 1 and Tier 2 information (including the technical and topical reports referenced in Chapter 1) and generic technical specifications that is incorporated by reference into this appendix.

B. *Generic technical specifications (generic TS)* means the information required by 10 CFR 50.36 and 50.36a for the portion of the plant that is within the scope of this appendix.

C. *Plant-specific DCD* means that portion of the combined license (COL) final safety analysis report that sets forth both the generic DCD information and any plant-specific changes to generic DCD information.

D. *Tier 1* means the portion of the design-related information contained in the generic DCD that is approved and certified by this appendix (Tier 1 information). The design descriptions, interface requirements, and site parameters are derived from Tier 2 information. Tier 1 information includes:

1. Definitions and general provisions;

2. Design descriptions;

3. Inspections, tests, analyses, and acceptance criteria (ITAAC);

4. Significant site parameters; and

5. Significant interface requirements.

E. *Tier 2* means the portion of the design-related information contained in the generic DCD that is approved but not certified by this appendix (Tier 2 information). Compliance with Tier 2 is required, but generic changes to and plant-specific departures from Tier 2 are governed by Section VIII of this appendix. Compliance with Tier 2 provides a sufficient, but not the only acceptable, method for complying with Tier 1. Compliance methods differing from Tier 2 must satisfy the change process in Section VIII of this appendix. Regardless of these differences, an applicant or licensee must meet the requirement in paragraph III.B of this appendix to reference Tier 2 when referencing Tier 1. Tier 2 information includes:

1. Information required by §52.47(a) and (c), with the exception of generic TS and conceptual design information;

2. Supporting information on the inspections, tests, and analyses that will be performed to demonstrate that the acceptance criteria in the ITAAC have been met; and

3. COL Items (COL license information), which identify certain matters that must be addressed in the site-specific portion of the final safety analysis report by an applicant who references this appendix. These items constitute information requirements but are not the only acceptable set of information in the final safety analysis report. An applicant may depart from or omit these items, provided that the departure or omission is identified and justified in the final safety analysis report. After issuance of a construction permit or COL, these items are not requirements for the licensee unless such items are restated in the final safety analysis report.

F. *Departure from a method of evaluation described in the plant-specific DCD used in establishing the design bases or in the safety analyses* means:

1. Changing any of the elements of the method described in the plant-specific DCD unless the results of the analysis are conservative or essentially the same; or

2. Changing from a method described in the plant-specific DCD to another method unless that method has been approved by the NRC for the intended application.

G. All other terms in this appendix have the meaning set out in 10 CFR 50.2, 10 CFR 52.1, or Section 11 of the Atomic Energy Act of 1954, as amended, as applicable.

III. SCOPE AND CONTENTS

A. Incorporation by reference approval. The APR1400 material is approved for incorporation by reference by the Director of the Office of the Federal Register under 5 U.S.C. 552(a) and 1 CFR part 51. You may obtain copies of the generic DCD from Yun-Ho Kim, President, KHNP Central Research Institute, 70, 1312-gil, Yuseong-daero, Yuseong-gu, Daejeon, 34101, Korea. You can view the generic DCD online in the NRC Library at *https://www.nrc.gov/reading-rm/adams.html*. In ADAMS, search under ADAMS Accession No. ML18228A667. If you do not have access to ADAMS or if you have problems accessing documents located in ADAMS, contact the NRC's Public Document Room (PDR) reference staff at 1–800–397–4209, at 301–415–3747, or by email at *PDR.Resource@nrc.gov*. Copies of this document are available for examination and copying at the NRC's PDR located at Room O1–F21, One White Flint North, 11555 Rockville Pike, Rockville, Maryland 20852. Copies are also available for examination at the NRC Library located at Two White Flint North, 11545 Rockville Pike, Rockville, Maryland 20852, telephone: 301–415–5610, email: *Library.Resource@nrc.gov*. All approved material is available for inspection at the National Archives and Records Administration (NARA). For information on the availability of this material at NARA, call 202–741–6030 or go to *https://www.archives.gov/federal-register/cfr/ibrlocations.html*.

1. Korea Electric Power Corporation and Korea Hydro & Nuclear Power Co, Ltd

a. APR1400 Design Control Document Tier 1 (APR1400–K–X–IT–14001–NP), Revision 3 (August 2018).

b. APR1400 Design Control Document Tier 2 (APR1400–K–X–FS–14002–NP), Revision 3 (August 2018), including:

i. Chapter 1, Introduction and General Description of the Plant.

ii. Chapter 2, Site Characteristics.

iii. Chapter 3, Design of Structures, Systems, Components, and Equipment.

iv. Chapter 4, Reactor.

v. Chapter 5, Reactor Coolant System and Connecting Systems.

vi. Chapter 6, Engineered Safety Features.

vii. Chapter 7, Instrumentation and Controls.

viii. Chapter 8, Electric Power.

ix. Chapter 9, Auxiliary Systems.

x. Chapter 10, Steam and Power Conversion System.

xi. Chapter 11, Radioactive Waste Management.

xii. Chapter 12, Radiation Protection.

xiii. Chapter 13, Conduct of Operations.

xiv. Chapter 14, Verification Programs.

xv. Chapter 15, Transient and Accident Analyses.

xvi. Chapter 16, Technical Specifications.

xvii. Chapter 17, Quality Assurance and Reliability Assurance.

xviii. Chapter 18, Human Factors Engineering.

xix. Chapter 19, Probabilistic Risk Assessment and Severe Accident Evaluation.

c. APR1400–E–B–NR–16001–NP, Evaluation of Main Steam and Feedwater Piping Applied to the Graded Approach for the APR1400, Rev. 0 (July 2017).

d. APR1400–E–B–NR–16002–NP, Evaluation of Safety Injection and Shutdown Cooling Piping Applied to the Graded Approach for the APR1400, Rev. 1 (May 2018).

e. APR1400–E–I–NR–14001–NP, Human Factors Engineering Program Plan, Rev. 4 (July 2018).

f. APR1400–E–I–NR–14002–NP, Operating Experience Review Implementation Plan, Rev. 2 (January 2018).

g. APR1400–E–I–NR–14003–NP, Functional Requirements Analysis and Function Allocation Implementation Plan, Rev. 2 (January 2018).

h. APR1400–E–I–NR–14004–NP, Task Analysis Implementation Plan, Rev. 3 (May 2018).

i. APR1400–E–I–NR–14006–NP, Treatment of Important Human Actions Implementation Plan, Rev. 3 (May 2018).

j. APR1400–E–I–NR–14007–NP, Human-System Interface Design Implementation Plan, Rev. 3 (May 2018).

k. APR1400–E–I–NR–14008–NP, Human Factors Verification and Validation Implementation Plan, Rev. 3 (May 2018).

l. APR1400–E–I–NR–14010–NP, Human Factors Verification and Validation Scenarios, Rev. 2 (January 2018).

m. APR1400–E–I–NR–14011–NP, Basic Human-System Interface, Rev. 3 (May 2018).

n. APR1400–E–I–NR–14012–NP, Style Guide, Rev. 2 (January 2018).

o. APR1400–E–J–NR–14001–NP, Component Interface Module, Rev. 1 (March 2017).

p. APR1400–E–J–NR–17001–NP, Secure Development and Operational Environment for APR1400 Computer-Based I&C Safety Systems, Rev. 0 (September 2017).

q. APR1400–E–N–NR–14001–NP, Design Features To Address GSI–191, Rev. 3 (February 2018).

r. APR1400–E–P–NR–14005–NP, Evaluations and Design Enhancements To Incorporate Lessons Learned from Fukushima Dai-Ichi Nuclear Accident, Rev. 2 (July 2017).

s. APR1400–E–S–NR–14004–NP, Evaluation of Effects of HRHF Response Spectra on SSCs, Rev. 3 (December 2017).

t. APR1400–E–S–NR–14005–NP, Evaluation of Structure-Soil-Structure Interaction (SSSI) Effects, Rev. 2 (December 2017).

u. APR1400–E–S–NR–14006–NP, Stability Check for NI Common Basemat, Rev. 5 (May 2018).

v. APR1400–E–X–NR–14001–NP, Equipment Qualification Program, Rev. 4 (July 2018).

w. APR1400–F–A–NR–14001–NP, Small Break LOCA Evaluation Model, Rev. 1 (March 2017).

x. APR1400–F–A–NR–14003–NP, Post-LOCA Long Term Cooling Evaluation Model, Rev. 1 (March 2017).

y. APR1400–F–A–TR–12004–NP–A, Realistic Evaluation Methodology for Large-Break LOCA of the APR1400 (August 2018).

z. APR1400–F–C–NR–14001–NP, CPC Setpoint Analysis Methodology for APR1400, Rev. 3 (June 2018).

aa. APR1400–F–C–NR–14002–NP, Functional Design Requirements for a Core Operating Limit Supervisory System for APR1400, Rev. 1 (February 2017).

ab. APR1400–F–C–NR–14003–NP, Functional Design Requirements for a Core Protection Calculator System for APR1400, Rev. 1 (March 2017).

ac. APR1400–F–C–TR–12002–NP–A, KCE–1 Critical Heat Flux Correlation for PLUS7 Thermal Design (April 2017).

ad. APR1400–F–M–TR–13001–NP–A, PLUS7 Fuel Design for the APR1400 (August 2018).

ae. APR1400–H–N–NR–14005–NP, Summary Stress Report for Primary Piping, Rev. 2 (September 2016).

af. APR1400–H–N–NR–14012–NP, Mechanical Analysis for New and Spent Fuel Storage Racks, Rev. 3 (August 2017).

ag. APR1400–K–I–NR–14005–NP, Staffing and Qualifications Implementation Plan, Rev. 1 (February 2017).

ah. APR1400–K–I–NR–14009–NP, Design Implementation Plan, Rev. 1 (February 2017).

ai. APR1400–K–Q–TR–11005–NP–A, KHNP Quality Assurance Program Description (QAPD) for the APR1400 Design Certification, Rev. 2 (October 2016).

aj. APR1400–Z–A–NR–14006–NP, Non-LOCA Safety Analysis Methodology, Rev. 1 (February 2017).

ak. APR1400–Z–A–NR–14007–NP, Mass and Energy Release Methodologies for LOCA and MSLB, Rev. 2 (May 2018).

al. APR1400–Z–A–NR–14011–NP, Criticality Analysis of New and Spent Fuel Storage Racks, Rev. 3 (May 2018).

am. APR1400–Z–A–NR–14019–NP, CCF Coping Analysis, Rev. 3 (July 2018).

an. APR1400–Z–J–NR–14001–NP, Safety I&C System, Rev. 3 (May 2018).

ao. APR1400–Z–J–NR–14002–NP, Diversity and Defense-in-Depth, Rev. 3 (May 2018).

ap. APR1400–Z–J–NR–14003–NP, Software Program Manual, Rev. 3 (May 2018).

aq. APR1400–Z–J–NR–14004–NP, Uncertainty Methodology and Application for Instrumentation, Rev. 2 (January 2018).

ar. APR1400–Z–J–NR–14005–NP, Setpoint Methodology for Safety-Related Instrumentation, Rev. 2 (January 2018).

as. APR1400–Z–J–NR–14012–NP, Control System CCF Analysis, Rev. 3 (May 2018).

at. APR1400–Z–J–NR–14013–NP, Response Time Analysis of Safety I&C System, Rev. 2 (January 2018).

au. APR1400–Z–M–NR–14008–NP, Pressure-Temperature Limits Methodology for RCS Heatup and Cooldown, Rev. 1 (January 2018).

av. APR1400–Z–M–TR–12003–NP–A, Fluidic Device Design for the APR1400 (April 2017).

2. Combustion Engineering, Inc.

a. CEN–310–NP–A, CPC and Methodology Changes for the CPC Improvement Program (April 1986).

b. CEN–312–NP, Overview Description of the Core Operating Limit Supervisory System (COLSS), Rev. 01–NP (November 1986).

3. Westinghouse

a. WCAP–10697–NP–A, Common Qualified Platform Topical Report, Rev. 3 (February 2013).

b. WCAP–17889–NP (APR1400–A–N–NR–17001–NP), Validation of SCALE 6.1.2 with 238-Group ENDF/B–VII.0 Cross Section Library for APR1400 Design Certification, Rev. 0 (June 2014).

B. An applicant or licensee referencing this appendix, in accordance with Section IV of this appendix, shall incorporate by reference and comply with the requirements of this appendix except as otherwise provided in this appendix.

C. If there is a conflict between Tier 1 and Tier 2 of the DCD, then Tier 1 controls.

D. If there is a conflict between the generic DCD and either the application for the design certification of the APR1400 design or ''Final Safety Evaluation Report Related to Certification of the APR1400 Standard Design,'' then the generic DCD controls.

E. Design activities for structures, systems, and components that are entirely outside the scope of this appendix may be performed using site characteristics, provided the design activities do not affect the DCD or conflict with the interface requirements.

IV. Additional Requirements and Restrictions

A. An applicant for a COL that wishes to reference this appendix shall, in addition to complying with the requirements of §§ 52.77, 52.79, and 52.80, comply with the following requirements:

1. Incorporate by reference, as part of its application, this appendix.

2. Include, as part of its application:

a. A plant-specific DCD containing the same type of information and using the same organization and numbering as the generic DCD for the APR1400 design, either by including or incorporating by reference the generic DCD information, and as modified and supplemented by the applicant's exemptions and departures;

b. The reports on departures from and updates to the plant-specific DCD required by paragraph X.B of this appendix;

c. Plant-specific TS, consisting of the generic and site-specific TS that are required by 10 CFR 50.36 and 50.36a;

d. Information demonstrating that the site characteristics fall within the site parameters and that the interface requirements have been met;

e. Information that addresses the COL items; and

f. Information required by §52.47(a) that is not within the scope of this appendix.

3. Include, in the plant-specific DCD, the sensitive, unclassified, non-safeguards information (including proprietary information and security-related information) and safeguards information referenced in the APR1400 generic DCD.

4. Include, as part of its application, a demonstration that an entity other than KEPCO/KHNP is qualified to supply the APR1400 design, unless KEPCO/KHNP supplies the design for the applicant's use.

B. The Commission reserves the right to determine in what manner this appendix may be referenced by an applicant for a construction permit or operating license under 10 CFR part 50.

V. Applicable Regulations

A. The regulations that apply to the APR1400 design are in 10 CFR parts 20, 50, 52, 73, and 100, codified as of September 19, 2019, that are applicable and technically relevant, as described in the final safety evaluation report.

B. [Reserved]

VI. Issue Resolution

A. The Commission has determined that the structures, systems, and components and design features of the APR1400 design comply with the provisions of the Atomic Energy Act of 1954, as amended, and the applicable regulations identified in Section V of this appendix; and therefore, provide adequate protection to the health and safety of the public. A conclusion that a matter is resolved includes the finding that additional or alternative structures, systems, and components, design features, design criteria, testing, analyses, acceptance criteria, or justifications are not necessary for the APR1400 design.

B. The Commission considers the following matters resolved within the meaning of §52.63(a)(5) in subsequent proceedings for issuance of a COL, amendment of a COL, or renewal of a COL, proceedings held under §52.103, and enforcement proceedings involving plants referencing this appendix:

1. All nuclear safety issues associated with the information in the final safety evaluation report, Tier 1, Tier 2, and the rulemaking record for certification of the APR1400 design, with the exception of generic TS and other operational requirements;

2. All nuclear safety and safeguards issues associated with the referenced information in the 53 non-public documents in Tables 1.6–1 and 1.6–2 of Tier 2 of the DCD, which contain sensitive unclassified non-safeguards information (including proprietary information and security-related information) and safeguards information and which, in context, are intended as requirements in the generic DCD for the APR1400 design;

3. All generic changes to the DCD under and in compliance with the change processes in paragraphs VIII.A.1 and VIII.B.1 of this appendix;

4. All exemptions from the DCD under and in compliance with the change processes in paragraphs VIII.A.4 and VIII.B.4 of this appendix, but only for that plant;

5. All departures from the DCD that are approved by license amendment, but only for that plant;

6. Except as provided in paragraph VIII.B.5.f of this appendix, all departures from Tier 2 under and in compliance with the change processes in paragraph VIII.B.5 of this appendix that do not require prior NRC approval, but only for that plant; and

7. All environmental issues concerning severe accident mitigation design alternatives associated with the information in the NRC's environmental assessment for the APR1400 design (ADAMS Accession No. ML18306A607) and APR1400–E–P–NR–14006, Revision 2, ''Severe Accident Mitigation Design Alternatives (SAMDAs) for the APR1400'' (ML18235A158) for plants referencing this appendix whose site characteristics fall within those site parameters specified in APR1400–E–P–NR–14006.

C. The Commission does not consider operational requirements for an applicant or licensee who references this appendix to be matters resolved within the meaning of §52.63(a)(5). The Commission reserves the right to require operational requirements for an applicant or licensee who references this appendix by rule, regulation, order, or license condition.

D. Except under the change processes in Section VIII of this appendix, the Commission may not require an applicant or licensee who references this appendix to:

1. Modify structures, systems, components, or design features as described in the generic DCD;

2. Provide additional or alternative structures, systems, components, or design features not discussed in the generic DCD; or

3. Provide additional or alternative design criteria, testing, analyses, acceptance criteria, or justification for structures, systems, components, or design features discussed in the generic DCD.

E. The NRC will specify, at an appropriate time, the procedures to be used by an interested person who wishes to review portions of the design certification or references containing safeguards information or sensitive unclassified non-safeguards information (including proprietary information, such as trade secrets and commercial or financial information obtained from a person that are privileged or confidential (10 CFR 2.390 and 10 CFR part 9), and security-related information), for the purpose of participating in the hearing required by § 52.85, the hearing provided under § 52.103, or in any other proceeding relating to this appendix, in which interested persons have a right to request an adjudicatory hearing.

VII. Duration of This Appendix

This appendix may be referenced for a period of 15 years from September 19, 2019, except as provided for in §§ 52.55(b) and 52.57(b). This appendix remains valid for an applicant or licensee who references this appendix until the application is withdrawn or the license expires, including any period of extended operation under a renewed license.

VIII. Processes for Changes and Departures

A. Tier 1 Information

1. Generic changes to Tier 1 information are governed by the requirements in § 52.63(a)(1).

2. Generic changes to Tier 1 information are applicable to all applicants or licensees who reference this appendix, except those for which the change has been rendered technically irrelevant by action taken under paragraphs A.3 or A.4 of this section.

3. Departures from Tier 1 information that are required by the Commission through plant-specific orders are governed by the requirements in § 52.63(a)(4).

4. Exemptions from Tier 1 information are governed by the requirements in §§ 52.63(b)(1) and 52.98(f). The Commission will deny a request for an exemption from Tier 1, if it finds that the design change will result in a significant decrease in the level of safety otherwise provided by the design.

B. Tier 2 Information

1. Generic changes to Tier 2 information are governed by the requirements in § 52.63(a)(1).

2. Generic changes to Tier 2 information are applicable to all applicants or licensees who reference this appendix, except those for which the change has been rendered technically irrelevant by action taken under paragraphs B.3, B.4, or B.5, of this section.

3. The Commission may not require new requirements on Tier 2 information by plant-specific order, while this appendix is in effect under § 52.55 or § 52.61, unless:

a. A modification is necessary to secure compliance with the Commission's regulations applicable and in effect at the time this appendix was approved, as set forth in Section V of this appendix, or to ensure adequate protection of the public health and safety or the common defense and security; and

b. Special circumstances as defined in 10 CFR 50.12(a) are present.

4. An applicant or licensee who references this appendix may request an exemption from Tier 2 information. The Commission may grant such a request only if it determines that the exemption will comply with the requirements of 10 CFR 50.12(a). The Commission will deny a request for an exemption from Tier 2, if it finds that the design change will result in a significant decrease in the level of safety otherwise provided by the design. The granting of an exemption to an applicant must be subject to litigation in the same manner as other issues material to the license hearing. The granting of an exemption to a licensee must be subject to an opportunity for a hearing in the same manner as license amendments.

5.a. An applicant or licensee who references this appendix may depart from Tier 2 information, without prior NRC approval, unless the proposed departure involves a change to or departure from Tier 1 information, or the TS, or requires a license amendment under paragraph B.5.b or B.5.c of this section. When evaluating the proposed departure, an applicant or licensee shall consider all matters described in the plant-specific DCD.

b. A proposed departure from Tier 2, other than one affecting resolution of a severe accident issue identified in the plant-specific DCD or one affecting information required by § 52.47(a)(28) to address aircraft impacts, requires a license amendment if it would:

(1) Result in more than a minimal increase in the frequency of occurrence of an accident previously evaluated in the plant-specific DCD;

(2) Result in more than a minimal increase in the likelihood of occurrence of a malfunction of a structure, system, or component important to safety and previously evaluated in the plant-specific DCD;

(3) Result in more than a minimal increase in the consequences of an accident previously evaluated in the plant-specific DCD;

(4) Result in more than a minimal increase in the consequences of a malfunction of a structure, system, or component important to safety previously evaluated in the plant-specific DCD;

(5) Create a possibility for an accident of a different type than any evaluated previously in the plant-specific DCD;

(6) Create a possibility for a malfunction of a structure, system, or component important to safety with a different result than any evaluated previously in the plant-specific DCD;

(7) Result in a design-basis limit for a fission product barrier as described in the plant-specific DCD being exceeded or altered; or

(8) Result in a departure from a method of evaluation described in the plant-specific DCD used in establishing the design bases or in the safety analyses.

c. A proposed departure from Tier 2, affecting resolution of an ex-vessel severe accident design feature identified in the plant-specific DCD, requires a license amendment if:

(1) There is a substantial increase in the probability of an ex-vessel severe accident such that a particular ex-vessel severe accident previously reviewed and determined to be not credible could become credible; or

(2) There is a substantial increase in the consequences to the public of a particular ex-vessel severe accident previously reviewed.

d. A proposed departure from Tier 2 information required by §52.47(a)(28) to address aircraft impacts shall consider the effect of the changed design feature or functional capability on the original aircraft impact assessment required by 10 CFR 50.150(a). The applicant or licensee shall describe, in the plant-specific DCD, how the modified design features and functional capabilities continue to meet the aircraft impact assessment requirements in 10 CFR 50.150(a)(1).

e. If a departure requires a license amendment under paragraph B.5.b or B.5.c of this section, it is governed by 10 CFR 50.90.

f. A departure from Tier 2 information that is made under paragraph B.5 of this section does not require an exemption from this appendix.

g. A party to an adjudicatory proceeding for either the issuance, amendment, or renewal of a license or for operation under §52.103(a), who believes that an applicant or licensee who references this appendix has not complied with paragraph VIII.B.5 of this appendix when departing from Tier 2 information, may petition to admit into the proceeding such a contention. In addition to complying with the general requirements of 10 CFR 2.309, the petition must demonstrate that the departure does not comply with paragraph VIII.B.5 of this appendix. Further, the petition must demonstrate that the change bears on an asserted noncompliance with an ITAAC acceptance criterion in the case of a §52.103 preoperational hearing, or that the change bears directly on the amendment request in the case of a hearing on a license amendment. Any other party may file a response. If, on the basis of the petition and any response, the presiding officer determines that a sufficient showing has been made, the presiding officer shall certify the matter directly to the Commission for determination of the admissibility of the contention. The Commission may admit such a contention if it determines the petition raises a genuine issue of material fact regarding compliance with paragraph VIII.B.5 of this appendix.

C. Operational Requirements

1. Changes to APR1400 DC generic TS and other operational requirements that were completely reviewed and approved in the design certification rulemaking and do not require a change to a design feature in the generic DCD are governed by the requirements in 10 CFR 50.109. Changes that require a change to a design feature in the generic DCD are governed by the requirements in paragraphs A or B of this section.

2. Changes to APR1400 DC generic TS and other operational requirements are applicable to all applicants who reference this appendix, except those for which the change has been rendered technically irrelevant by action taken under paragraphs C.3 or C.4 of this section.

3. The Commission may require plant-specific departures on generic TS and other operational requirements that were completely reviewed and approved, provided a change to a design feature in the generic DCD is not required and special circumstances, as defined in 10 CFR 2.335 are present. The Commission may modify or supplement generic TS and other operational requirements that were not completely reviewed and approved or require additional TS and other operational requirements on a plant-specific basis, provided a change to a design feature in the generic DCD is not required.

4. An applicant who references this appendix may request an exemption from the generic TS or other operational requirements. The Commission may grant such a request only if it determines that the exemption will comply with the requirements of §52.7. The granting of an exemption must be subject to litigation in the same manner as other issues material to the license hearing.

5. A party to an adjudicatory proceeding for the issuance, amendment, or renewal of a license, or for operation under §52.103(a), who believes that an operational requirement approved in the DCD or a TS derived from the generic TS must be changed, may petition to admit such a contention into the proceeding. The petition must comply with the general requirements of 10 CFR 2.309 and must demonstrate why special circumstances as defined in 10 CFR 2.335 are present, or demonstrate compliance with the Commission's regulations in effect at the time this appendix was approved, as set forth in Section V of this appendix. Any other party may file a response to the petition. If, on the basis of the

petition and any response, the presiding officer determines that a sufficient showing has been made, the presiding officer shall certify the matter directly to the Commission for determination of the admissibility of the contention. All other issues with respect to the plant-specific TS or other operational requirements are subject to a hearing as part of the licensing proceeding.

6. After issuance of a license, the generic TS have no further effect on the plant-specific TS. Changes to the plant-specific TS will be treated as license amendments under 10 CFR 50.90.

IX. [RESERVED]

X. RECORDS AND REPORTING

A. Records

1. The applicant for this appendix shall maintain a copy of the generic DCD that includes all generic changes that are made to Tier 1 and Tier 2, and the generic TS and other operational requirements. The applicant shall maintain the sensitive unclassified non-safeguards information (including proprietary information and security-related information) and safeguards information referenced in the generic DCD for the period that this appendix may be referenced, as specified in Section VII of this appendix.

2. An applicant or licensee who references this appendix shall maintain the plant-specific DCD to accurately reflect both generic changes to the generic DCD and plant-specific departures made under Section VIII of this appendix throughout the period of application and for the term of the license (including any periods of renewal).

3. An applicant or licensee who references this appendix shall prepare and maintain written evaluations which provide the bases for the determinations required by Section VIII of this appendix. These evaluations must be retained throughout the period of application and for the term of the license (including any periods of renewal).

4.a. The applicant for the APR1400 design shall maintain a copy of the aircraft impact assessment performed to comply with the requirements of 10 CFR 50.150(a) for the term of the certification (including any period of renewal).

b. An applicant or licensee who references this appendix shall maintain a copy of the aircraft impact assessment performed to comply with the requirements of 10 CFR 50.150(a) throughout the pendency of the application and for the term of the license (including any periods of renewal).

B. Reporting

1. An applicant or licensee who references this appendix shall submit a report to the NRC containing a brief description of any plant-specific departures from the DCD, including a summary of the evaluation of each departure. This report must be filed in accordance with the filing requirements applicable to reports in §52.3.

2. An applicant or licensee who references this appendix shall submit updates to its plant-specific DCD, which reflect the generic changes to and plant-specific departures from the generic DCD made under Section VIII of this appendix. These updates shall be filed under the filing requirements applicable to final safety analysis report updates in 10 CFR 50.71(e) and 52.3.

3. The reports and updates required by paragraphs X.B.1 and X.B.2 of this appendix must be submitted as follows:

a. On the date that an application for a license referencing this appendix is submitted, the application must include the report and any updates to the generic DCD.

b. During the interval from the date of application for a license to the date the Commission makes its finding required by §52.103(g), the report must be submitted semi-annually. Updates to the plant-specific DCD must be submitted annually and may be submitted along with amendments to the application.

c. After the Commission makes the finding required by §52.103(g), the reports and updates to the plant-specific DCD must be submitted, along with updates to the site-specific portion of the final safety analysis report for the facility, at the intervals required by 10 CFR 50.59(d)(2) and 50.71(e)(4), respectively, or at shorter intervals as specified in the license.

[84 FR 23452, May 22, 2019, as amended at 86 FR 43402, Aug. 9, 2021]

APPENDIXES G–M TO PART 52 [RESERVED]

APPENDIX N TO PART 52—STANDARDIZATION OF NUCLEAR POWER PLANT DESIGNS: COMBINED LICENSES TO CONSTRUCT AND OPERATE NUCLEAR POWER REACTORS OF IDENTICAL DESIGN AT MULTIPLE SITES

The Commission's regulations in part 2 of this chapter specifically provide for the holding of hearings on particular issues separately from other issues involved in hearings in licensing proceedings, and for the consolidation of adjudicatory proceedings and of the presentations of parties in adjudicatory proceedings such as licensing proceedings (§§2.316 and 2.317 of this chapter).

This appendix sets out the particular requirements and provisions applicable to situations in which applications for combined licenses under subpart C of this part are filed by one or more applicants for licenses to

construct and operate nuclear power reactors of identical design (''common design'') to be located at multiple sites.[1]

1. Except as otherwise specified in this appendix or as the context otherwise indicates, the provisions of subpart C of this part and subpart D of part 2 of this chapter apply to combined license applications subject to this appendix.

2. Each combined license application submitted pursuant to this appendix must be submitted as specified in § 52.75 and 10 CFR 2.101. Each application must state that the applicant wishes to have the application considered under 10 CFR part 52, appendix N, and must list each of the applications to be treated together under this appendix.

3. Each application must include the information required by §§ 52.77, 52.79, and 52.80(a), *provided however*, that the application must identify the common design, and, if applicable, reference a standard design certification under subpart B of this part, or the use of a reactor manufactured under subpart F of this part. The final safety analysis report for each application must either incorporate by reference or include the final safety analysis of the common design, including, if applicable, the final safety analysis report for the referenced design certification or the manufactured reactor.[2]

4. Each combined license application submitted pursuant to this appendix must contain an environmental report as required by § 52.80(b), and which complies with the applicable provisions of 10 CFR part 51, *provided, however,* that the application may incorporate by reference a single environmental report on the environmental impacts of the common design.

5. Upon a determination that each application is acceptable for docketing under 10 CFR 2.101, each application will be docketed and a notice of docketing for each application will be published in the FEDERAL REGISTER, in accordance with 10 CFR 2.104, *provided, however,* that the notice must state that the application will be processed under the provisions of 10 CFR part 52, appendix N, and subpart D of part 2 of this chapter. As the discretion of the Commission, a single notice of docketing for multiple applications may be published in the FEDERAL REGISTER.

6. The NRC staff shall prepare draft and final environmental impact statements for each of the applications under part 51 of this chapter. Scoping under 10 CFR 51.28 and 51.29 for each of the combined license applications may be conducted simultaneously and joint scoping may be conducted with respect to the environmental issues relevant to the common design.

If the applications reference a standard design certification, then the environmental impact statement for each of the applications must incorporate by reference the design certification environmental assessment. If the applications do not reference a standard design certification, then the NRC staff shall prepare draft and final supplemental environmental impact statements which address severe accident mitigation design alternatives for the common design, which must be incorporated by reference into the environmental impact statement prepared for each application. Scoping under 10 CFR 51.28 and 51.29 for the supplemental environmental impact statement may be conducted simultaneously, and may be part of the scoping for each of the combined license applications.

7. The ACRS shall report on each of the applications as required by § 52.87. Each report must be limited to those safety matters for each application which are not relevant to the common design. In addition, the ACRS shall separately report on the safety of the common design, *provided, however,* that the report need not address the safety of a referenced standard design certification or reactor manufactured under subpart F of this part.

8. The Commission shall designate a presiding officer to conduct the proceeding with respect to the health and safety, common defense and security, and environmental matters relating to the common design. The hearing will be governed by the applicable provisions of subparts A, C, G, L, N, and O of part 2 of this chapter relating to applications for combined licenses. The presiding officer shall issue a partial initial decision on the common design.

[1] If the design for the power reactor(s) proposed in a particular application is not identical to the others, that application may not be processed under this appendix and subpart D of part 2 of this chapter.

[2] As used in this appendix, the design of a nuclear power reactor included in a single referenced safety analysis report means the design of those structures, systems, and components important to radiological health and safety and the common defense and security.

PART 53 [RESERVED]

PART 54—REQUIREMENTS FOR RENEWAL OF OPERATING LICENSES FOR NUCLEAR POWER PLANTS

GENERAL PROVISIONS

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AUTHORITY: Atomic Energy Act of 1954, secs. 102, 103, 104, 161, 181, 182, 183, 186, 189, 223, 234 (42 U.S.C. 2132, 2133, 2134, 2136, 2137, 2201, 2231, 2232, 2233, 2236, 2239, 2273, 2282); Energy Reorganization Act of 1974, secs. 201, 202, 206 (42 U.S.C. 5841, 5842, 5846); 44 U.S.C. 3504 note.

Section 54.17 also issued under E.O. 12829, 58 FR 3479, 3 CFR, 1993 Comp., p. 570; E.O. 13526, 75 FR 707, 3 CFR, 2009 Comp., p. 298; E.O. 12968, 60 FR 40245, 3 CFR, 1995 Comp., p. 391.

SOURCE: 60 FR 22491, May 8, 1995, unless otherwise noted.

GENERAL PROVISIONS

§ 54.1 Purpose.

This part governs the issuance of renewed operating licenses and renewed combined licenses for nuclear power plants licensed pursuant to Sections 103 or 104b of the Atomic Energy Act of 1954, as amended, and Title II of the Energy Reorganization Act of 1974 (88 Stat. 1242).

[72 FR 49560, Aug. 28, 2007]

§ 54.3 Definitions.

(a) As used in this part,

Current licensing basis (CLB) is the set of NRC requirements applicable to a specific plant and a licensee's written commitments for ensuring compliance with and operation within applicable NRC requirements and the plant-specific design basis (including all modifications and additions to such commitments over the life of the license) that are docketed and in effect. The CLB includes the NRC regulations contained in 10 CFR parts 2, 19, 20, 21, 26, 30, 40, 50, 51, 52, 54, 55, 70, 72, 73, 100 and appendices thereto; orders; license conditions; exemptions; and technical specifications. It also includes the plant-specific design-basis information defined in 10 CFR 50.2 as documented in the most recent final safety analysis report (FSAR) as required by 10 CFR 50.71 and the licensee's commitments remaining in effect that were made in docketed licensing correspondence such as licensee responses to NRC bulletins, generic letters, and enforcement actions, as well as licensee commitments documented in NRC safety evaluations or licensee event reports.

Integrated plant assessment (IPA) is a licensee assessment that demonstrates that a nuclear power plant facility's structures and components requiring aging management review in accordance with § 54.21(a) for license renewal have been identified and that the effects of aging on the functionality of such structures and components will be managed to maintain the CLB such that there is an acceptable level of safety during the period of extended operation.

Nuclear power plant means a nuclear power facility of a type described in 10 CFR 50.21(b) or 50.22.

Renewed combined license means a combined license originally issued under part 52 of this chapter for which an application for renewal is filed in accordance with 10 CFR 52.107 and issued under this part.

Time-limited aging analyses, for the purposes of this part, are those licensee calculations and analyses that:

(1) Involve systems, structures, and components within the scope of license renewal, as delineated in § 54.4(a);

(2) Consider the effects of aging;

(3) Involve time-limited assumptions defined by the current operating term, for example, 40 years;

(4) Were determined to be relevant by the licensee in making a safety determination;

(5) Involve conclusions or provide the basis for conclusions related to the capability of the system, structure, and component to perform its intended functions, as delineated in § 54.4(b); and

(6) Are contained or incorporated by reference in the CLB.

(b) All other terms in this part have the same meanings as set out in 10 CFR 50.2 or Section 11 of the Atomic Energy Act, as applicable.

[60 FR 22491, May 8, 1995, as amended at 72 FR 49560, Aug. 28, 2007]

§ 54.4 Scope.

(a) Plant systems, structures, and components within the scope of this part are—

(1) Safety-related systems, structures, and components which are those relied upon to remain functional during and following design-basis events (as defined in 10 CFR 50.49 (b)(1)) to ensure the following functions—

(i) The integrity of the reactor coolant pressure boundary;

(ii) The capability to shut down the reactor and maintain it in a safe shutdown condition; or

(iii) The capability to prevent or mitigate the consequences of accidents which could result in potential offsite exposures comparable to those referred to in § 50.34(a)(1), § 50.67(b)(2), or § 100.11 of this chapter, as applicable.

(2) All nonsafety-related systems, structures, and components whose failure could prevent satisfactory accomplishment of any of the functions identified in paragraphs (a)(1) (i), (ii), or (iii) of this section.

(3) All systems, structures, and components relied on in safety analyses or plant evaluations to perform a function that demonstrates compliance with the Commission's regulations for fire protection (10 CFR 50.48), environmental qualification (10 CFR 50.49), pressurized thermal shock (10 CFR 50.61), anticipated transients without scram (10 CFR 50.62), and station blackout (10 CFR 50.63).

(b) The intended functions that these systems, structures, and components must be shown to fulfill in § 54.21 are those functions that are the bases for including them within the scope of license renewal as specified in paragraphs (a) (1)–(3) of this section.

[60 FR 22491, May 8, 1995, as amended at 61 FR 65175, Dec. 11, 1996; 64 FR 72002, Dec. 23, 1999]

§ 54.5 Interpretations.

Except as specifically authorized by the Commission in writing, no interpretation of the meaning of the regulations in this part by any officer or employee of the Commission other than a written interpretation by the General Counsel will be recognized to be binding upon the Commission.

§ 54.7 Written communications.

All applications, correspondence, reports, and other written communications shall be filed in accordance with applicable portions of 10 CFR 50.4.

§ 54.9 Information collection requirements: OMB approval.

(a) The Nuclear Regulatory Commission has submitted the information collection requirements contained in this part to the Office of Management and Budget (OMB) for approval as required by the Paperwork Reduction Act (44 U.S.C. 3501, *et seq.*). The NRC may not conduct or sponsor, and a person is not required to respond to, a collection of information unless it displays a currently valid OMB control number. OMB has approved the information collection requirements contained in this part under control number 3150–0155.

(b) The approved information requirements contained in this part appear in §§ 54.13, 54.15, 54.17, 54.19, 54.21, 54.22, 54.23, 54.33, and 54.37.

[60 FR 22491, May 8, 1995, as amended at 62 FR 52188, Oct. 6, 1997; 67 FR 67100, Nov. 4, 2002]

§ 54.11 Public inspection of applications.

Applications and documents submitted to the Commission in connection with renewal applications may be made available for public inspection in accordance with the provisions of the regulations contained in 10 CFR part 2.

§ 54.13 Completeness and accuracy of information.

(a) Information provided to the Commission by an applicant for a renewed license or information required by statute or by the Commission's regulations, orders, or license conditions to be maintained by the applicant must be complete and accurate in all material respects.

(b) Each applicant shall notify the Commission of information identified by the applicant as having, for the regulated activity, a significant implication for public health and safety or common defense and security. An applicant violates this paragraph only if the applicant fails to notify the Commission of information that the applicant has identified as having a significant implication for public health and safety or common defense and security. Notification must be provided to the Administrator of the appropriate regional office within 2 working days of identifying the information. This requirement is not applicable to information that is already required to be provided to the Commission by other reporting or updating requirements.

§ 54.15 Specific exemptions.

Exemptions from the requirements of this part may be granted by the Commission in accordance with 10 CFR 50.12.

§ 54.17 Filing of application.

(a) The filing of an application for a renewed license must be in accordance with subpart A of 10 CFR part 2 and 10 CFR 50.4 and 50.30.

(b) Any person who is a citizen, national, or agent of a foreign country, or any corporation, or other entity which the Commission knows or has reason to know is owned, controlled, or dominated by an alien, a foreign corporation, or a foreign government, is ineligible to apply for and obtain a renewed license.

(c) An application for a renewed license may not be submitted to the Commission earlier than 20 years before the expiration of the operating license or combined license currently in effect.

(d) An applicant may combine an application for a renewed license with applications for other kinds of licenses.

(e) An application may incorporate by reference information contained in previous applications for licenses or license amendments, statements, correspondence, or reports filed with the Commission, provided that the references are clear and specific.

(f) If the application contains Restricted Data or other defense information, it must be prepared in such a manner that all Restricted Data and other defense information are separated from unclassified information in accordance with 10 CFR 50.33(j).

(g) As part of its application, and in any event before the receipt of Restricted Data or classified National Security Information or the issuance of a renewed license, the applicant shall agree in writing that it will not permit any individual to have access to or any facility to possess Restricted Data or classified National Security Information until the individual and/or facility has been approved for such access under the provisions of 10 CFR parts 25 and/or 95. The agreement of the applicant in this regard shall be deemed part of the renewed license, whether so stated therein or not.

[60 FR 22491, May 8, 1995, as amended at 62 FR 17690, Apr. 11, 1997; 72 FR 49560, Aug. 28, 2007]

§ 54.19 Contents of application—general information.

(a) Each application must provide the information specified in 10 CFR 50.33 (a) through (e), (h), and (i). Alternatively, the application may incorporate by reference other documents that provide the information required by this section.

(b) Each application must include conforming changes to the standard indemnity agreement, 10 CFR 140.92, Appendix B, to account for the expiration term of the proposed renewed license.

§ 54.21 Contents of application—technical information.

Each application must contain the following information:

(a) *An integrated plant assessment (IPA)*. The IPA must—

(1) For those systems, structures, and components within the scope of this part, as delineated in § 54.4, identify and list those structures and components subject to an aging management review. Structures and components subject to an aging management review shall encompass those structures and components—

(i) That perform an intended function, as described in § 54.4, without moving parts or without a change in configuration or properties. These structures and components include, but are not limited to, the reactor vessel, the reactor coolant system pressure boundary, steam generators, the pressurizer, piping, pump casings, valve bodies, the core shroud, component supports, pressure retaining boundaries, heat exchangers, ventilation ducts, the containment, the containment liner, electrical and mechanical penetrations, equipment hatches, seismic Category I structures, electrical cables and connections, cable trays, and electrical cabinets, excluding, but not limited to, pumps (except casing), valves (except body), motors, diesel generators, air compressors, snubbers, the control rod drive, ventilation dampers, pressure transmitters, pressure indicators, water level indicators, switchgears, cooling fans, transistors, batteries, breakers, relays, switches, power inverters, circuit boards, battery chargers, and power supplies; and

(ii) That are not subject to replacement based on a qualified life or specified time period.

(2) Describe and justify the methods used in paragraph (a)(1) of this section.

(3) For each structure and component identified in paragraph (a)(1) of this section, demonstrate that the effects of aging will be adequately managed so that the intended function(s) will be maintained consistent with the CLB for the period of extended operation.

(b) *CLB changes during NRC review of the application*. Each year following submittal of the license renewal application and at least 3 months before scheduled completion of the NRC review, an amendment to the renewal application must be submitted that identifies any change to the CLB of the facility that materially affects the contents of the license renewal application, including the FSAR supplement.

(c) *An evaluation of time-limited aging analyses*. (1) A list of time-limited aging analyses, as defined in § 54.3, must be provided. The applicant shall demonstrate that—

(i) The analyses remain valid for the period of extended operation;

(ii) The analyses have been projected to the end of the period of extended operation; or

(iii) The effects of aging on the intended function(s) will be adequately managed for the period of extended operation.

(2) A list must be provided of plant-specific exemptions granted pursuant to 10 CFR 50.12 and in effect that are based on time-limited aging analyses as defined in § 54.3. The applicant shall provide an evaluation that justifies the continuation of these exemptions for the period of extended operation.

(d) *An FSAR supplement*. The FSAR supplement for the facility must contain a summary description of the programs and activities for managing the effects of aging and the evaluation of time-limited aging analyses for the period of extended operation determined by paragraphs (a) and (c) of this section, respectively.

§ 54.22 Contents of application—technical specifications.

Each application must include any technical specification changes or additions necessary to manage the effects of aging during the period of extended operation as part of the renewal application. The justification for changes or additions to the technical specifications must be contained in the license renewal application.

§ 54.23 Contents of application—environmental information.

Each application must include a supplement to the environmental report that complies with the requirements of subpart A of 10 CFR part 51.

§ 54.25 Report of the Advisory Committee on Reactor Safeguards.

Each renewal application will be referred to the Advisory Committee on Reactor Safeguards for a review and report. Any report will be made part of

the record of the application and made available to the public, except to the extent that security classification prevents disclosure.

§ 54.27 Hearings.

A notice of an opportunity for a hearing will be published in the FEDERAL REGISTER in accordance with 10 CFR 2.105 and 2.309. In the absence of a request for a hearing filed within 60 days by a person whose interest may be affected, the Commission may issue a renewed operating license or renewed combined license without a hearing upon a 30-day notice and publication in the FEDERAL REGISTER of its intent to do so.

[77 FR 46600, Aug. 3, 2012]

§ 54.29 Standards for issuance of a renewed license.

A renewed license may be issued by the Commission up to the full term authorized by § 54.31 if the Commission finds that:

(a) Actions have been identified and have been or will be taken with respect to the matters identified in paragraphs (a)(1) and (a)(2) of this section, such that there is reasonable assurance that the activities authorized by the renewed license will continue to be conducted in accordance with the CLB, and that any changes made to the plant's CLB in order to comply with this paragraph are in accord with the Act and the Commission's regulations. These matters are:

(1) managing the effects of aging during the period of extended operation on the functionality of structures and components that have been identified to require review under § 54.21(a)(1); and

(2) time-limited aging analyses that have been identified to require review under § 54.21(c).

(b) Any applicable requirements of subpart A of 10 CFR part 51 have been satisfied.

(c) Any matters raised under § 2.335 have been addressed.

[60 FR 22491, May 8, 1995, as amended at 69 FR 2279, Jan. 14, 2004]

§ 54.30 Matters not subject to a renewal review.

(a) If the reviews required by § 54.21 (a) or (c) show that there is not reasonable assurance during the current license term that licensed activities will be conducted in accordance with the CLB, then the licensee shall take measures under its current license, as appropriate, to ensure that the intended function of those systems, structures or components will be maintained in accordance with the CLB throughout the term of its current license.

(b) The licensee's compliance with the obligation under Paragraph (a) of this section to take measures under its current license is not within the scope of the license renewal review.

§ 54.31 Issuance of a renewed license.

(a) A renewed license will be of the class for which the operating license or combined license currently in effect was issued.

(b) A renewed license will be issued for a fixed period of time, which is the sum of the additional amount of time beyond the expiration of the operating license or combined license (not to exceed 20 years) that is requested in a renewal application plus the remaining number of years on the operating license or combined license currently in effect. The term of any renewed license may not exceed 40 years.

(c) A renewed license will become effective immediately upon its issuance, thereby superseding the operating license or combined license previously in effect. If a renewed license is subsequently set aside upon further administrative or judicial appeal, the operating license or combined license previously in effect will be reinstated unless its term has expired and the renewal application was not filed in a timely manner.

(d) A renewed license may be subsequently renewed in accordance with all applicable requirements.

[60 FR 22491, May 8, 1995, as amended at 72 FR 49560, Aug. 28, 2007]

§ 54.33 Continuation of CLB and conditions of renewed license.

(a) Whether stated therein or not, each renewed license will contain and

otherwise be subject to the conditions set forth in 10 CFR 50.54.

(b) Each renewed license will be issued in such form and contain such conditions and limitations, including technical specifications, as the Commission deems appropriate and necessary to help ensure that systems, structures, and components subject to review in accordance with § 54.21 will continue to perform their intended functions for the period of extended operation. In addition, the renewed license will be issued in such form and contain such conditions and limitations as the Commission deems appropriate and necessary to help ensure that systems, structures, and components associated with any time-limited aging analyses will continue to perform their intended functions for the period of extended operation.

(c) Each renewed license will include those conditions to protect the environment that were imposed pursuant to 10 CFR 50.36b and that are part of the CLB for the facility at the time of issuance of the renewed license. These conditions may be supplemented or amended as necessary to protect the environment during the term of the renewed license and will be derived from information contained in the supplement to the environmental report submitted pursuant to 10 CFR part 51, as analyzed and evaluated in the NRC record of decision. The conditions will identify the obligations of the licensee in the environmental area, including, as appropriate, requirements for reporting and recordkeeping of environmental data and any conditions and monitoring requirements for the protection of the nonaquatic environment.

(d) The licensing basis for the renewed license includes the CLB, as defined in § 54.3(a); the inclusion in the licensing basis of matters such as licensee commitments does not change the legal status of those matters unless specifically so ordered pursuant to paragraphs (b) or (c) of this section.

§ 54.35 Requirements during term of renewed license.

During the term of a renewed license, licensees shall be subject to and shall continue to comply with all Commission regulations contained in 10 CFR parts 2, 19, 20, 21, 26, 30, 40, 50, 51, 52, 54, 55, 70, 72, 73, and 100, and the appendices to these parts that are applicable to holders of operating licenses or combined licenses, respectively.

[72 FR 49560, Aug. 28, 2007]

§ 54.37 Additional records and recordkeeping requirements.

(a) The licensee shall retain in an auditable and retrievable form for the term of the renewed operating license or renewed combined license all information and documentation required by, or otherwise necessary to document compliance with, the provisions of this part.

(b) After the renewed license is issued, the FSAR update required by 10 CFR 50.71(e) must include any systems, structures, and components newly identified that would have been subject to an aging management review or evaluation of time-limited aging analyses in accordance with § 54.21. This FSAR update must describe how the effects of aging will be managed such that the intended function(s) in § 54.4(b) will be effectively maintained during the period of extended operation.

[60 FR 22491, May 8, 1995, as amended at 72 FR 49560, Aug. 28, 2007]

§ 54.41 Violations.

(a) The Commission may obtain an injunction or other court order to prevent a violation of the provisions of the following acts—

(1) The Atomic Energy Act of 1954, as amended.

(2) Title II of the Energy Reorganization Act of 1974, as amended or

(3) A regulation or order issued pursuant to those acts.

(b) The Commission may obtain a court order for the payment of a civil penalty imposed under Section 234 of the Atomic Energy Act—

(1) For violations of the following—

(i) Sections 53, 57, 62, 63, 81, 82, 101, 103, 104, 107, or 109 of the Atomic Energy Act of 1954, as amended;

(ii) Section 206 of the Energy Reorganization Act;

(iii) Any rule, regulation, or order issued pursuant to the sections specified in paragraph (b)(1)(i) of this section;

(iv) Any term, condition, or limitation of any license issued under the sections specified in paragraph (b)(1)(i) of this section.

(2) For any violation for which a license may be revoked under Section 186 of the Atomic Energy Act of 1954, as amended.

§ 54.43 Criminal penalties.

(a) Section 223 of the Atomic Energy Act of 1954, as amended, provides for criminal sanctions for willful violations of, attempted violation of, or conspiracy to violate, any regulation issued under sections 161b, 161i, or 161o of the Act. For purposes of section 223, all the regulations in part 54 are issued under one or more of sections 161b, 161i, or 161o, except for the sections listed in paragraph (b) of this section.

(b) The regulations in part 54 that are not issued under Sections 161b, 161i, or 161o for the purposes of Section 223 are as follows: §§ 54.1, 54.3, 54.4, 54.5, 54.7, 54.9, 54.11, 54.15, 54.17, 54.19, 54.21, 54.22, 54.23, 54.25, 54.27, 54.29, 54.31, 54.41, and 54.43.

PART 55—OPERATORS' LICENSES

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AUTHORITY: Atomic Energy Act of 1954, secs. 107, 161, 181, 182, 183, 186, 187, 223, 234 (42 U.S.C. 2137, 2201, 2231, 2232, 2233, 2236, 2237, 2273, 2282); Energy Reorganization Act of 1974, secs. 201, 202 (42 U.S.C. 5841, 5842); Nuclear Waste Policy Act of 1982, sec. 306 (42 U.S.C. 10226); 44 U.S.C. 3504 note.

SOURCE: 52 FR 9460, Mar. 25, 1987, unless otherwise noted.

EDITORIAL NOTE: Nomenclature changes to part 55 appear at 80 FR 74980, Dec. 1, 2015.

Subpart A—General Provisions

§ 55.1 Purpose.

The regulations in this part:

(a) Establish procedures and criteria for the issuance of licenses to operators and senior operators of utilization facilities licensed under the Atomic Energy Act of 1954, as amended, or Section 202 of the Energy Reorganization Act of 1974, as amended, and part 50, part 52, or part 54 of this chapter,

(b) Provide for the terms and conditions upon which the Commission will issue or modify these licenses, and

(c) Provide for the terms and conditions to maintain and renew these licenses.

[52 FR 9460, Mar. 25, 1987, as amended at 72 FR 49560, Aug. 28, 2007]

§ 55.2 Scope.

The regulations in this part apply to—

(a) Any individual who manipulates the controls of any utilization facility licensed under parts 50, 52, or 54 of this chapter,

(b) Any individual designated by a facility licensee to be responsible for directing any licensed activity of a licensed operator.

(c) Any facility license.

[52 FR 9460, Mar. 25, 1987, as amended at 59 FR 5938, Feb. 9, 1994; 72 FR 49560, Aug. 28, 2007]

§ 55.3 License requirements.

A person must be authorized by a license issued by the Commission to perform the function of an operator or a senior operator as defined in this part.

§ 55.4 Definitions.

As used in this part:

Act means the Atomic Energy Act of 1954, including any amendments to the Act.

Actively performing the functions of an operator or senior operator means that an individual has a position on the shift crew that requires the individual to be licensed as defined in the facility's technical specifications, and that the individual carries out and is responsible for the duties covered by that position.

Commission means the Nuclear Regulatory Commission or its duly authorized representatives.

Controls when used with respect to a nuclear reactor means apparatus and mechanisms the manipulation of which directly affects the reactivity or power level of the reactor.

Facility means any utilization facility as defined in part 50 of this chapter. In cases for which a license is issued for operation of two or more facilities, *facility* means all facilities identified in the license.

Facility licensee means an applicant for or holder of a license for a facility.

Licensee means an individual licensed operator or senior operator.

Operator means any individual licensed under this part to manipulate a control of a facility.

Performance testing means testing conducted to verify a simulation facility's performance as compared to actual or predicted reference plant performance.

Physician means an individual licensed by a State or territory of the United States, the District of Columbia or the Commonwealth of Puerto Rico to dispense drugs in the practice of medicine.

Plant-referenced simulator means a simulator modeling the systems of the reference plant with which the operator interfaces in the control room, including operating consoles, and which permits use of the reference plant's procedures.

Reference plant means the specific nuclear power plant from which a simulation facility's control room configuration, system control arrangement, and design data are derived.

Senior operator means any individual licensed under this part to manipulate the controls of a facility and to direct the licensed activities of licensed operators.

Simulation facility means one or more of the following components, alone or in combination: used for either the partial conduct of operating tests for operators, senior operators, and license applicants, or to establish on-the-job training and experience prerequisites for operator license eligibility:

(1) A plant-referenced simulator;

(2) A Commission-approved simulator under § 55.46(b); or

(3) Another simulation device, including part-task and limited scope simulation devices, approved under § 55.46(b).

Systems approach to training means a training program that includes the following five elements:

(1) Systematic analysis of the jobs to be performed.

(2) Learning objectives derived from the analysis which describe desired performance after training.

(3) Training design and implementation based on the learning objectives.

(4) Evaluation of trainee mastery of the objectives during training.

(5) Evaluation and revision of the training based on the performance of trained personnel in the job setting.

United States, when used in a geographical sense, includes Puerto Rico and all territories and possessions of the United States.

[52 FR 9460, Mar. 25, 1987, as amended at 66 FR 52667, Oct. 17, 2001]

§ 55.5 Communications.

(a) Except as provided under a regional licensing program identified in paragraph (b) of this section, an applicant or licensee or facility licensee shall submit any communication or report concerning the regulations in this part and shall submit any application filed under these regulations to the Commission as follows:

(1) By mail addressed to—Director, Office of Nuclear Reactor Regulation, U.S. Nuclear Regulatory Commission, Washington, DC 20555–0001; or

(2) By delivery in person to the NRC's offices at 11555 Rockville Pike, Rockville, Maryland, or

(3) Where practicable, by electronic submission, for example, via Electronic Information Exchange, or CD-ROM. Electronic submissions must be made in a manner that enables the NRC to receive, read, authenticate, distribute, and archive the submission, and process and retrieve it a single page at a time. Detailed guidance on making electronic submissions can be obtained by visiting the NRC's Web site at *http://www.nrc.gov/site-help/e-submittals.html*; by e-mail to *MSHD.Resource@nrc.gov*; or by writing the Office of the Chief Information Officer, U.S. Nuclear Regulatory Commission, Washington, DC 20555–0001. The guidance discusses, among other topics, the formats the NRC can accept, the use of electronic signatures, and the treatment of nonpublic information.

(b)(1) Except for test and research reactor facilities, the Director, Office of Nuclear Reactor Regulation, has delegated to the Regional Administrators of Regions I, II, III, and IV authority and responsibility under the regulations in this part for the issuance and renewal of licenses for operators and senior operators of nuclear power reactors licensed under 10 CFR part 50 or part 52 of this chapter and located in these regions.

(2) Any application for a license or license renewal filed under the regulations in this part involving a nuclear power reactor licensed under 10 CFR part 50 or part 52 of this chapter and any related inquiry, communication, information, or report must be submitted to the Regional Administrator by an appropriate method listed in paragraph (a) of this section. The Regional Administrator or the Administrator's designee will transmit to the Director, Office of Nuclear Reactor Regulation, any matter that is not within the scope of the Regional Administrator's delegated authority.

(i) If the nuclear power reactor is located in Region I, submissions must be made to the Regional Administrator of Region I. Submissions by mail or hand delivery must be addressed to the Administrator at U.S. Nuclear Regulatory Commission, 2100 Renaissance Boulevard, Suite 100, King of Prussia, PA 19406–2713; where email is appropriate it should be addressed to *RidsRgn1MailCenter.Resource@nrc.gov*.

(ii) If the nuclear power reactor is located in Region II, submissions must be made to the Regional Administrator of Region II. Submissions by mail or hand delivery must be addressed to the Regional Administrator at U.S. Nuclear Regulatory Commission, 245 Peachtree Center Avenue, NE., Suite 1200, Atlanta, Georgia 30303–1257. Where e-mail is appropriate, it should be addressed to *RidsRgn2MailCenter@nrc.gov*.

(iii) If the nuclear power reactor is located in Region III, submissions must be made to the Regional Administrator of Region III. Submissions by mail or hand delivery must be addressed to the Administrator at U.S. Nuclear Regulatory Commission, 2443 Warrenville Road, Suite 210, Lisle, IL 60532–4352; where e-mail is appropriate it should be addressed to *RidsRgn3MailCenter@nrc.gov*.

(iv) If the nuclear power reactor is located in Region IV, submissions must be made to the Regional Administrator of Region IV. Submission by mail or hand delivery must be addressed to the Administrator at U.S. Nuclear Regulatory Commission, 1600 E. Lamar

Blvd., Arlington, TX 76011–4511; where email is appropriate, it should be addressed to *RidsRgn4MailCenter@nrc.gov*.

(3) Any application for a license or license renewal filed under the regulations in this part and all other submissions involving a test and research reactor or non-power reactor facility licensed under 10 CFR part 50 and any related inquiry, communication, information, or report must be submitted to the Office of Nuclear Reactor Regulation, Director of the Division of Advanced Reactors and Non-Power Production and Utilization Facilities at the NRC's headquarters, by an appropriate method listed in paragraph (a) of this section.

[52 FR 9460, Mar. 25, 1987]

EDITORIAL NOTE: For FEDERAL REGISTER citations affecting § 55.5, see the List of CFR Sections Affected, which appears in the Finding Aids section of the printed volume and at *www.govinfo.gov*.

§ 55.6 Interpretations.

Except as specifically authorized by the Commission in writing, no interpretation of the meaning of the regulations in this part by any officer or employee of the Commission other than a written interpretation by the General Counsel will be recognized to be binding upon the Commission.

§ 55.7 Additional requirements.

The Commission may, by rule, regulation, or order, impose upon any licensee such requirements, in addition to those established in the regulations in this part, as it deems appropriate or necessary to protect health and to minimize danger to life or property.

§ 55.8 Information collection requirements: OMB approval.

(a) The Nuclear Regulatory Commission has submitted the information collection requirements contained in this part to the Office of Management and Budget (OMB) for approval as required by the Paperwork Reduction Act (44 U.S.C. 3501 *et seq.*). The NRC may not conduct or sponsor, and a person is not required to respond to, a collection of information unless it displays a currently valid OMB control number. OMB has approved the information collection requirements contained in this part under control number 3150–0018.

(b) The approved information collection requirements contained in this part appear in §§ 55.11, 55.25, 55.27, 55.31, 55.35, 55.40, 55.41, 55.43, 55.45, 55.47, 55.53, 55.57, and 55.59.

(c) This part contains information collection requirements in addition to those approved under the control number specified in paragraph (a) of this section. These information collection requirements and the control numbers under which they are approved are as follows:

(1) In §§ 55.23, 55.25, 55.27, 55.31, NRC Form 396 is approved under control number 3150–0024.

(2) In §§ 55.31, 55.35, 55.47, and 55.57, NRC Form 398 is approved under control number 3150–0090.

[62 FR 52188, Oct. 6, 1997, as amended at 64 FR 19878, Apr. 23, 1999; 66 FR 52667, Oct. 17, 2001; 67 FR 67100, Nov. 4, 2002]

§ 55.9 Completeness and accuracy of information.

Information provided to the Commission by an applicant for a license or by a licensee or information required by statute or by the Commission's regulations, orders, or license conditions to be maintained by the applicant or the licensee shall be complete and accurate in all material respects.

[52 FR 49372, Dec. 31, 1987]

Subpart B—Exemptions

§ 55.11 Specific exemptions.

The Commission may, upon application by an interested person, or upon its own initiative, grant such exemptions from the requirements of the regulations in this part as it determines are authorized by law and will not endanger life or property and are otherwise in the public interest.

§ 55.13 General exemptions.

The regulations in this part do not require a license for an individual who—

(a) Under the direction and in the presence of a licensed operator or senior operator, manipulates the controls of—

(1) A research or training reactor as part of the individual's training as a student, or

(2) A facility as a part of the individual's training in a facility licensee's training program as approved by the Commission to qualify for an operator license under this part.

(b) Under the direction and in the presence of a licensed senior operator, manipulates the controls of a facility to load or unload the fuel into, out of, or within the reactor vessel.

Subpart C—Medical Requirements

§ 55.21 Medical examination.

An applicant for a license shall have a medical examination by a physician. A licensee shall have a medical examination by a physician every two years. The physician shall determine that the applicant or licensee meets the requirements of § 55.33(a)(1).

§ 55.23 Certification.

To certify the medical fitness of the applicant, an authorized representative of the facility licensee shall complete and sign NRC Form 396, ''Certification of Medical Examination by Facility Licensee,'' which can be obtained by writing the Office of the Chief Information Officer, U.S. Nuclear Regulatory Commission, Washington, DC 20555–0001, by calling (301) 415–7232, or by visiting the NRC's Web site at *http://www.nrc.gov* and selecting forms from the index found on the home page.

(a) Form NRC–396 must certify that a physician has conducted the medical examination of the applicant as required in § 55.21.

(b) When the certification requests a conditional license based on medical evidence, the medical evidence must be submitted on NRC Form 396 to the Commission and the Commission then makes a determination in accordance with § 55.33.

[52 FR 9460, Mar. 25, 1987, as amended at 53 FR 43421, Oct. 27, 1988; 68 FR 58813, Oct. 10, 2003; 73 FR 30458, May 28, 2008]

§ 55.25 Incapacitation because of disability or illness.

If, during the term of the license, the licensee develops a permanent physical or mental condition that causes the licensee to fail to meet the requirements of § 55.21 of this part, the facility licensee shall notify the Commission, within 30 days of learning of the diagnosis, in accordance with § 50.74(c). For conditions for which a conditional license (as described in § 55.33(b) of this part) is requested, the facility licensee shall provide medical certification on Form NRC 396 to the Commission (as described in § 55.23 of this part).

[60 FR 13617, Mar. 14, 1995]

§ 55.27 Documentation.

The facility licensee shall document and maintain the results of medical qualifications data, test results, and each operator's or senior operator's medical history for the current license period and provide the documentation to the Commission upon request. The facility licensee shall retain this documentation while an individual performs the functions of an operator or senior operator.

Subpart D—Applications

§ 55.31 How to apply.

(a) The applicant shall:

(1) Complete NRC Form 398, ''Personal Qualification Statement—Licensee,'' which can be obtained by writing the Office of the Chief Information Officer, U.S. Nuclear Regulatory Commission, Washington, DC 20555–0001, by calling (301) 415–7232, or by visiting the NRC's Web site at *http://www.nrc.gov* and selecting forms from the index found on the home page;

(2) File an original of NRC Form 398, together with the information required in paragraphs (a)(3), (4), (5) and (6) of this section, with the appropriate Regional Administrator;

(3) Submit a written request from an authorized representative of the facility licensee by which the applicant will be employed that the written examination and operating test be administered to the applicant;

(4) Provide evidence that the applicant has successfully completed the facility licensee's requirements to be licensed as an operator or senior operator and of the facility licensee's need for an operator or a senior operator to perform assigned duties. An authorized

representative of the facility licensee shall certify this evidence on Form NRC–398. This certification must include details of the applicant's qualifications, and details on courses of instruction administered by the facility licensee, and describe the nature of the training received at the facility, and the startup and shutdown experience received. In lieu of these details, the Commission may accept certification that the applicant has successfully completed a Commission-approved training program that is based on a systems approach to training and that uses a simulation facility acceptable to the Commission under § 55.45(b) of this part;

(5) Provide evidence that the applicant, as a trainee, has successfully manipulated the controls of either the facility for which a license is sought or a plant-referenced simulator that meets the requirements of § 55.46(c). At a minimum, five significant control manipulations must be performed that affect reactivity or power level. Control manipulations performed on the plant-referenced simulator may be chosen from a representative sampling of the control manipulations and plant evolutions described in § 55.59(c)(3)(i)(A–F), (R), (T), (W), and (X) of this part, as applicable to the design of the plant for which the license application is submitted. For licensed operators applying for a senior operator license, certification that the operator has successfully operated the controls of the facility as a licensed operator shall be accepted; and

(6) Provide certification by the facility licensee of medical condition and general health on Form NRC–396, to comply with §§ 55.21, 55.23 and 55.33(a)(1).

(b) The Commission may at any time after the application has been filed, and before the license has expired, require further information under oath or affirmation in order to enable it to determine whether to grant or deny the application or whether to revoke, modify, or suspend the license.

(c) An applicant whose application has been denied because of a medical condition or general health may submit a further medical report at any time as a supplement to the application.

(d) Each application and statement must contain complete and accurate disclosure as to all matters required to be disclosed. The applicant shall sign statements required by paragraphs (a)(1) and (2) of this section.

[52 FR 9460, Mar. 25, 1987, as amended at 53 FR 43421, Oct. 27, 1988; 66 FR 52667, Oct. 17, 2001; 68 FR 58813, Oct. 10, 2003; 73 FR 30458, May 28, 2008; 86 FR 43403, Aug. 9, 2021]

§ 55.33 Disposition of an initial application.

(a) *Requirements for the approval of an initial application.* The Commission will approve an initial application for a license pursuant to the regulations in this part, if it finds that—

(1) *Health.* The applicant's medical condition and general health will not adversely affect the performance of assigned operator job duties or cause operational errors endangering public health and safety. The Commission will base its finding upon the certification by the facility licensee as detailed in § 55.23.

(2) *Written examination and operating test.* The applicant has passed the requisite written examination and operating test in accordance with §§ 55.41 and 55.45 or 55.43 and 55.45. These examinations and tests determine whether the applicant for an operator's license has learned to operate a facility competently and safely, and additionally, in the case of a senior operator, whether the applicant has learned to direct the licensed activities of licensed operators competently and safely.

(b) *Conditional license.* If an applicant's general medical condition does not meet the minimum standards under § 55.33(a)(1) of this part, the Commission may approve the application and include conditions in the license to accommodate the medical defect. The Commission will consider the recommendations and supporting evidence of the facility licensee and of the examining physician (provided on Form NRC–396) in arriving at its decision.

[52 FR 9460, Mar. 25, 1987, as amended at 86 FR 67843, Nov. 30, 2021]

§ 55.35 Re-applications.

(a) An applicant whose application for a license has been denied because of failure to pass the written examination or operating test, or both, may file a new application two months after the date of denial. The application must be submitted on Form NRC–398 and include a statement signed by an authorized representative of the facility licensee by whom the applicant will be employed that states in detail the extent of the applicant's additional training since the denial and certifies that the applicant is ready for re-examination. An applicant may file a third application six months after the date of denial of the second application, and may file further successive applications two years after the date of denial of each prior application. The applicant shall submit each successive application on Form NRC–398 and include a statement of additional training.

(b) An applicant who has passed either the written examination or operating test and failed the other may request in a new application on Form NRC–398 to be excused from re-examination on the portions of the examination or test which the applicant has passed. The Commission may in its discretion grant the request, if it determines that sufficient justification is presented.

Subpart E—Written Examinations and Operating Tests

§ 55.40 Implementation.

(a) The Commission shall use the criteria in NUREG–1021, ''Operator Licensing Examination Standards for Power Reactors,''[1] in effect six months before the examination date to prepare the written examinations required by §§ 55.41 and 55.43 and the operating tests required by § 55.45. The Commission shall also use the criteria in NUREG–1021 to evaluate the written examinations and operating tests prepared by power reactor facility licensees pursuant to paragraph (b) of this section.

(b) Power reactor facility licensees may prepare, proctor, and grade the written examinations required by §§ 55.41 and 55.43 and may prepare the operating tests required by § 55.45, subject to the following conditions:

(1) Power reactor facility licensees shall prepare the required examinations and tests in accordance with the criteria in NUREG–1021 as described in paragraph (a) of this section;

(2) Pursuant to § 55.49, power reactor facility licensees shall establish, implement, and maintain procedures to control examination security and integrity;

(3) An authorized representative of the power reactor facility licensee shall approve the required examinations and tests before they are submitted to the Commission for review and approval; and

(4) Power reactor facility licensees must receive Commission approval of their proposed written examinations and operating tests.

(c) In lieu of paragraph (b) of this section and upon written request from a power reactor facility licensee pursuant to § 55.31(a)(3), the Commission shall, for that facility licensee, prepare, proctor, and grade, the written examinations required by §§ 55.41 and 55.43 and the operating tests required by § 55.45. In addition, the Commission may exercise its discretion and reject a power reactor facility licensee's determination to elect paragraph (b) of this section, in which case the Commission shall prepare, proctor, and grade the required written examinations and operating tests for that facility licensee.

(d) The Commission shall use the criteria in NUREG–1478, ''Operator Licensing Examiner Standards for Research and Test Reactors,'' for all test and research reactors to prepare, proctor, and grade the written examinations required by §§ 55.41 and 55.43 and the operating tests required by § 55.45

[1] Copies of NUREGs may be purchased from the Superintendent of Documents, U.S. Government Publishing Office, P.O. Box 38082, Washington, DC 20402–9328. Copies are also available from the National Technical Information Service, 5301 Shawnee Road, Alexandria, VA 22312. A copy is available for inspection and/or copying in the NRC Public Document Room, One White Flint North, 11555 Rockville Pike (O–1 F21), Rockville, MD.

for non-power reactor facility licensees.

[64 FR 19878, Apr. 23, 1999, as amended at 69 FR 76600, Dec. 22, 2004; 79 FR 66604, Nov. 10, 2014; 80 FR 45844, Aug. 3, 2015; 80 FR 74980, Dec. 1, 2015]

§ 55.41 Written examination: Operators.

(a) *Content.* The written examination for an operator will contain a representative selection of questions on the knowledge, skills, and abilities needed to perform licensed operator duties. The knowledge, skills, and abilities will be identified, in part, from learning objectives derived from a systematic analysis of licensed operator duties performed by each facility licensee and contained in its training program and from information in the Final Safety Analysis Report, system description manuals and operating procedures, facility license and license amendments, Licensee Event Reports, and other materials requested from the facility licensee by the Commission.

(b) The written examination for an operator for a facility will include a representative sample from among the following 14 items, to the extent applicable to the facility.

(1) Fundamentals of reactor theory, including fission process, neutron multiplication, source effects, control rod effects, criticality indications, reactivity coefficients, and poison effects.

(2) General design features of the core, including core structure, fuel elements, control rods, core instrumentation, and coolant flow.

(3) Mechanical components and design features of the reactor primary system.

(4) Secondary coolant and auxiliary systems that affect the facility.

(5) Facility operating characteristics during steady state and transient conditions, including coolant chemistry, causes and effects of temperature, pressure and reactivity changes, effects of load changes, and operating limitations and reasons for these operating characteristics.

(6) Design, components, and functions of reactivity control mechanisms and instrumentation.

(7) Design, components, and functions of control and safety systems, including instrumentation, signals, interlocks, failure modes, and automatic and manual features.

(8) Components, capacity, and functions of emergency systems.

(9) Shielding, isolation, and containment design features, including access limitations.

(10) Administrative, normal, abnormal, and emergency operating procedures for the facility.

(11) Purpose and operation of radiation monitoring systems, including alarms and survey equipment.

(12) Radiological safety principles and procedures.

(13) Procedures and equipment available for handling and disposal of radioactive materials and effluents.

(14) Principles of heat transfer thermodynamics and fluid mechanics.

§ 55.43 Written examination: Senior operators.

(a) *Content.* The written examination for a senior operator will contain a representative selection of questions on the knowledge, skills, and abilities needed to perform licensed senior operator duties. The knowledge, skills, and abilities will be identified, in part, from learning objectives derived from a systematic analysis of licensed senior operator duties performed by each facility licensee and contained in its training program and from information in the Final Safety Analysis Report, system description manuals and operating procedures, facility license and license amendments, Licensee Event Reports, and other materials requested from the facility licensee by the Commission.

(b) The written examination for a senior operator for a facility will include a representative sample from among the following seven items and the 14 items specified in § 55.41 of this part, to the extent applicable to the facility:

(1) Conditions and limitations in the facility license.

(2) Facility operating limitations in the technical specifications and their bases.

(3) Facility licensee procedures required to obtain authority for design and operating changes in the facility.

(4) Radiation hazards that may arise during normal and abnormal situations, including maintenance activities and various contamination conditions.

(5) Assessment of facility conditions and selection of appropriate procedures during normal, abnormal, and emergency situations.

(6) Procedures and limitations involved in initial core loading, alterations in core configuration, control rod programming, and determination of various internal and external effects on core reactivity.

(7) Fuel handling facilities and procedures.

§ 55.45 Operating tests.

(a) *Content.* The operating tests administered to applicants for operator and senior operator licenses in accordance with paragraph (b)(1) of this section are generally similar in scope. The content will be identified, in part, from learning objectives derived from a systematic analysis of licensed operator or senior operator duties performed by each facility licensee and contained in its training program and from information in the Final Safety Analysis Report, system description manuals and operating procedures, facility license and license amendments, Licensee Event Reports, and other materials requested from the facility licensee by the Commission. The operating test, to the extent applicable, requires the applicant to demonstrate an understanding of and the ability to perform the actions necessary to accomplish a representative sample from among the following 13 items.

(1) Perform pre-startup procedures for the facility, including operating of those controls associated with plant equipment that could affect reactivity.

(2) Manipulate the console controls as required to operate the facility between shutdown and designated power levels.

(3) Identify annunciators and condition-indicating signals and perform appropriate remedial actions where appropriate.

(4) Identify the instrumentation systems and the significance of facility instrument readings.

(5) Observe and safely control the operating behavior characteristics of the facility.

(6) Perform control manipulations required to obtain desired operating results during normal, abnormal, and emergency situations.

(7) Safely operate the facility's heat removal systems, including primary coolant, emergency coolant, and decay heat removal systems, and identify the relations of the proper operation of these systems to the operation of the facility.

(8) Safely operate the facility's auxiliary and emergency systems, including operation of those controls associated with plant equipment that could affect reactivity or the release of radioactive materials to the environment.

(9) Demonstrate or describe the use and function of the facility's radiation monitoring systems, including fixed radiation monitors and alarms, portable survey instruments, and personnel monitoring equipment.

(10) Demonstrate knowledge of significant radiation hazards, including permissible levels in excess of those authorized, and ability to perform other procedures to reduce excessive levels of radiation and to guard against personnel exposure.

(11) Demonstrate knowledge of the emergency plan for the facility, including, as appropriate, the operator's or senior operator's responsibility to decide whether the plan should be executed and the duties under the plan assigned.

(12) Demonstrate the knowledge and ability as appropriate to the assigned position to assume the responsibilities associated with the safe operation of the facility.

(13) Demonstrate the applicant's ability to function within the control room team as appropriate to the assigned position, in such a way that the facility licensee's procedures are adhered to and that the limitations in its license and amendments are not violated.

(b) *Implementation—Administration.* The operating test will be administered in a plant walkthrough and in either—

(1) A simulation facility that the Commission has approved for use after application has been made by the facility licensee under § 55.46(b);

(2) A plant-referenced simulator (§ 55.46(c)); or

(3) The plant, if approved for use in the administration of the operating test by the Commission under § 55.46(b).

[52 FR 9460, Mar. 25, 1987, as amended at 53 FR 43421, Oct. 27, 1988; 62 FR 59276, Nov. 3, 1997; 66 FR 52667, Oct. 17, 2001]

§ 55.46 Simulation facilities.

(a) *General*. This section addresses the use of a simulation facility for the administration of the operating test and plant-referenced simulators to meet experience requirements for applicants for operator and senior operator licenses.

(b) *Commission-approved simulation facilities and Commission approval of use of the plant in the administration of the operating test*. (1) Facility licensees that propose to use a simulation facility, other than a plant-referenced simulator, or the plant in the administration of the operating test under §§ 55.45(b)(1) or 55.45(b)(3), shall request approval from the Commission. This request must include:

(i) A description of the components of the simulation facility intended to be used, or the way the plant would be used for each part of the operating test, unless previously approved; and

(ii) A description of the performance tests for the simulation facility as part of the request, and the results of these tests; and

(iii) A description of the procedures for maintaining examination and test integrity consistent with the requirements of § 55.49.

(2) The Commission will approve a simulation facility or use of the plant for administration of operating tests if it finds that the simulation facility and its proposed use, or the proposed use of the plant, are suitable for the conduct of operating tests for the facility licensee's reference plant under § 55.45(a).

(c) *Plant-referenced simulators*. (1) A plant-referenced simulator used for the administration of the operating test or to meet experience requirements in § 55.31(a)(5) must demonstrate expected plant response to operator input and to normal, transient, and accident conditions to which the simulator has been designed to respond. The plant-referenced simulator must be designed and implemented so that it:

(i) Is sufficient in scope and fidelity to allow conduct of the evolutions listed in §§ 55.45(a)(1) through (13), and 55.59(c)(3)(i)(A) through (AA), as applicable to the design of the reference plant.

(ii) Allows for the completion of control manipulations for operator license applicants.

(2) Facility licensees that propose to use a plant-referenced simulator to meet the control manipulation requirements in § 55.31(a)(5) must ensure that:

(i) The plant-referenced simulator utilizes models relating to nuclear and thermal-hydraulic characteristics that replicate the most recent core load in the nuclear power reference plant for which a license is being sought; and

(ii) Simulator fidelity has been demonstrated so that significant control manipulations are completed without procedural exceptions, simulator performance exceptions, or deviation from the approved training scenario sequence.

(3) A simulation facility consisting solely of a plant-referenced simulator must meet the requirements of paragraph (c)(1) of this section and the criteria in paragraphs (d)(1) and (4) of this section for the Commission to accept the plant-referenced simulator for conducting operating tests as described in § 55.45(a) of this part, requalification training as described in § 55.59(c)(3) of this part, or for performing control manipulations that affect reactivity to establish eligibility for an operator's license as described in § 55.31(a)(5).

(d) *Continued assurance of simulator fidelity*. Facility licensees that maintain a simulation facility shall:

(1) Conduct performance testing throughout the life of the simulation facility in a manner sufficient to ensure that paragraphs (c)(2)(ii), as applicable, and (d)(3) of this section are met. The results of performance tests must be retained for four years after the completion of each performance test or until superseded by updated test results;

(2) Correct modeling and hardware discrepancies and discrepancies identified from scenario validation and from performance testing;

(3) Make results of any uncorrected performance test failures that may exist at the time of the operating test or requalification program inspection available for NRC review, prior to or concurrent with preparations for each operating test or requalification program inspection; and

(4) Maintain the provisions for license application, examination, and test integrity consistent with § 55.49.

[66 FR 52667, Oct. 17, 2001]

§ 55.47 Waiver of examination and test requirements.

(a) On application, the Commission may waive any or all of the requirements for a written examination and operating test, if it finds that the applicant—

(1) Has had extensive actual operating experience at a comparable facility, as determined by the Commission, within two years before the date of application;

(2) Has discharged his or her responsibilities competently and safely and is capable of continuing to do so; and

(3) Has learned the operating procedures for and is qualified to operate competently and safely the facility designated in the application.

(b) The Commission may accept as proof of the applicant's past performance a certification of an authorized representative of the facility licensee or of a holder of an authorization by which the applicant was previously employed. The certification must contain a description of the applicant's operating experience, including an approximate number of hours the applicant operated the controls of the facility, the duties performed, and the extent of the applicant's responsibility.

(c) The Commission may accept as proof of the applicant's current qualifications a certification of an authorized representative of the facility licensee or of a holder of an authorization where the applicant's services will be utilized.

§ 55.49 Integrity of examinations and tests.

Applicants, licensees, and facility licensees shall not engage in any activity that compromises the integrity of any application, test, or examination required by this part. The integrity of a test or examination is considered compromised if any activity, regardless of intent, affected, or, but for detection, would have affected the equitable and consistent administration of the test or examination. This includes activities related to the preparation and certification of license applications and all activities related to the preparation, administration, and grading of the tests and examinations required by this part.

[64 FR 19878, Apr. 23, 1999]

Subpart F—Licenses

§ 55.51 Issuance of licenses.

Operator and senior operator licenses. If the Commission determines that an applicant for an operator license or a senior operator license meets the requirements of the Act and its regulations, it will issue a license in the form and containing any conditions and limitations it considers appropriate and necessary.

§ 55.53 Conditions of licenses.

Each license contains and is subject to the following conditions whether stated in the license or not:

(a) Neither the license nor any right under the license may be assigned or otherwise transferred.

(b) The license is limited to the facility for which it is issued.

(c) The license is limited to those controls of the facility specified in the license.

(d) The license is subject to, and the licensee shall observe, all applicable rules, regulations, and orders of the Commission.

(e) If a licensee has not been actively performing the functions of an operator or senior operator, the licensee may not resume activities authorized by a license issued under this part except as permitted by paragraph (f) of this section. To maintain active status, the licensee shall actively perform the functions of an operator or senior operator on a minimum of seven 8-hour or five 12-hour shifts per calendar quarter. For test and research reactors, the licensee shall actively perform the functions of an operator or senior operator

for a minimum of four hours per calendar quarter.

(f) If paragraph (e) of this section is not met, before resumption of functions authorized by a license issued under this part, an authorized representative of the facility licensee shall certify the following:

(1) That the qualifications and status of the licensee are current and valid; and

(2) That the licensee has completed a minimum of 40 hours of shift functions under the direction of an operator or senior operator as appropriate and in the position to which the individual will be assigned. The 40 hours must have included a complete tour of the plant and all required shift turnover procedures. For senior operators limited to fuel handling under paragraph (c) of this section, one shift must have been completed. For test and research reactors, a minimum of six hours must have been completed.

(g) The licensee shall notify the Commission within 30 days about a conviction for a felony.

(h) The licensee shall complete a requalification program as described by § 55.59.

(i) The licensee shall have a biennial medical examination.

(j) The licensee shall not consume or ingest alcoholic beverages within the protected area of power reactors, or the controlled access area of non-power reactors. The licensee shall not use, possess, or sell any illegal drugs. The licensee shall not perform activities authorized by a license issued under this part while under the influence of alcohol or any prescription, over-the-counter, or illegal substance that could adversely affect his or her ability to safely and competently perform his or her licensed duties. For the purpose of this paragraph, with respect to alcoholic beverages and drugs, the term ''under the influence'' means the licensee exceeded, as evidenced by a confirmed test result, the lower of the cutoff levels for drugs or alcohol contained in subparts E, F, and G of part 26 of this chapter, or as established by the facility licensee. The term ''under the influence'' also means the licensee could be mentally or physically impaired as a result of substance use including prescription and over-the-counter drugs, as determined under the provisions, policies, and procedures established by the facility licensee for its fitness-for-duty program, in such a manner as to adversely affect his or her ability to safely and competently perform licensed duties.

(k) Each licensee at power reactors shall participate in the drug and alcohol testing programs established pursuant to 10 CFR part 26. Each licensee at non-power reactors shall participate in any drug and alcohol testing program that may be established for that non-power facility.

(l) The licensee shall comply with any other conditions that the Commission may impose to protect health or to minimize danger to life or property.

[52 FR 9460, Mar. 25, 1987, as amended at 56 FR 32070, July 15, 1991; 74 FR 45545, Sept. 3, 2009; 79 FR 66604, Nov. 10, 2014]

§ 55.55 Expiration.

(a) Each operator license and senior operator license expires six years after the date of issuance, upon termination of employment with the facility licensee, or upon determination by the facility licensee that the licensed individual no longer needs to maintain a license.

(b) If a licensee files an application for renewal or an upgrade of an existing license on Form NRC–398 at least 30 days before the expiration of the existing license, it does not expire until disposition of the application for renewal or for an upgraded license has been finally determined by the Commission. Filing by mail will be deemed to be complete at the time the application is deposited in the mail.

[52 FR 9460, Mar. 25, 1987, as amended at 79 FR 66605, Nov. 10, 2014]

§ 55.57 Renewal of licenses.

(a) The applicant for renewal of a license shall—

(1) Complete and sign Form NRC–398 and include the number of the license for which renewal is sought.

(2) File an original of NRC Form 398 with the appropriate Regional Administrator specified in § 55.5(b).

(3) Provide written evidence of the applicant's experience under the existing license and the approximate number of hours that the licensee has operated the facility.

(4) Provide a statement by an authorized representative of the facility licensee that during the effective term of the current license the applicant has satisfactorily completed the requalification program for the facility for which operator or senior operator license renewal is sought.

(5) Provide evidence that the applicant has discharged the license responsibilities competently and safely. The Commission may accept as evidence of the applicant's having met this requirement a certificate of an authorized representative of the facility licensee or holder of an authorization by which the licensee has been employed.

(6) Provide certification by the facility licensee of medical condition and general health on Form NRC–396, to comply with §§ 55.21, 55.23 and 55.27.

(b) The license will be renewed if the Commission finds that—

(1) The medical condition and the general health of the licensee continue to be such as not to cause operational errors that endanger public health and safety. The Commission will base this finding upon the certification by the facility licensee as described in § 55.23.

(2) The licensee—

(i) Is capable of continuing to competently and safely assume licensed duties;

(ii) Has successfully completed a requalification program that has been approved by the Commission as required by § 55.59; and

(iii) Has passed the requalification examinations and annual operating tests as required by § 55.59.

(3) There is a continued need for a licensee to operate or for a senior operator to direct operators at the facility designated in the application.

(4) The past performance of the licensee has been satisfactory to the Commission. In making its finding, the Commission will include in its evaluation information such as notices of violations or letters of reprimand in the licensee's docket.

[52 FR 9460, Mar. 25, 1987, as amended at 59 FR 5938, Feb. 9, 1994; 68 FR 58813, Oct. 10, 2003]

§ 55.59 Requalification.

(a) *Requalification requirements.* Each licensee shall—

(1) Successfully complete a requalification program developed by the facility licensee that has been approved by the Commission. This program shall be conducted for a continuous period not to exceed 24 months in duration.

(2) Pass a comprehensive requalification written examination and an annual operating test.

(i) The written examination will sample the items specified in §§ 55.41 and 55.43 of this part, to the extent applicable to the facility, the licensee, and any limitation of the license under § 55.53(c) of this part.

(ii) The operating test will require the operator or senior operator to demonstrate an understanding of and the ability to perform the actions necessary to accomplish a comprehensive sample of items specified in § 55.45(a) (2) through (13) inclusive to the extent applicable to the facility.

(iii) In lieu of the Commission accepting a certification by the facility licensee that the licensee has passed written examinations and operating tests administered by the facility licensee within its Commission-approved program developed by using a systems approach to training under paragraph (c) of this section, the Commission may administer a comprehensive requalification written examination and an annual operating test.

(b) *Additional training.* If the requirements of paragraphs (a) (1) and (2) of this section are not met, the Commission may require the licensee to complete additional training and to submit evidence to the Commission of successful completion of this training before returning to licensed duties.

(c) *Requalification program requirements.* A facility licensee shall have a requalification program reviewed and approved by the Commission and shall, upon request consistent with the Commission's inspection program needs, submit to the Commission a copy of its

comprehensive requalification written examinations or annual operating tests. The requalification program must meet the requirements of paragraphs (c) (1) through (7) of this section. In lieu of paragraphs (c) (2), (3), and (4) of this section, the Commission may approve a program developed by using a systems approach to training.

(1) *Schedule*. The requalification program must be conducted for a continuous period not to exceed two years, and upon conclusion must be promptly followed, pursuant to a continuous schedule, by successive requalification programs.

(2) *Lectures*. The requalification program must include preplanned lectures on a regular and continuing basis throughout the license period in those areas where operator and senior operator written examinations and facility operating experience indicate that emphasis in scope and depth of coverage is needed in the following subjects:

(i) Theory and principles of operation.

(ii) General and specific plant operating characteristics.

(iii) Plant instrumentation and control systems.

(iv) Plant protection systems.

(v) Engineered safety systems.

(vi) Normal, abnormal, and emergency operating procedures.

(vii) Radiation control and safety.

(viii) Technical specifications.

(ix) Applicable portions of title 10, chapter I, Code of Federal Regulations.

(3) *On-the-job training*. The requalification program must include on-the-job training so that—

(i) Each licensed operator of a utilization facility manipulates the plant controls and each licensed senior operator either manipulates the controls or directs the activities of individuals during plant control manipulations during the term of the licensed operator's or senior operator's license. For reactor operators and senior operators, these manipulations must consist of the following control manipulations and plant evolutions if they are applicable to the plant design. Items described in paragraphs (c)(3)(i) (A) through (L) of this section must be performed annually; all other items must be performed on a two-year cycle. However, the requalification programs must contain a commitment that each individual shall perform or participate in a combination of reactivity control manipulations based on the availability of plant equipment and systems. Those control manipulations which are not performed at the plant may be performed on a simulator. The use of the Technical Specifications should be maximized during the simulator control manipulations. Senior operator licensees are credited with these activities if they direct control manipulations as they are performed.

(A) Plant or reactor startups to include a range that reactivity feedback from nuclear heat addition is noticeable and heatup rate is established.

(B) Plant shutdown.

(C) Manual control of steam generators or feedwater or both during startup and shutdown.

(D) Boration or dilution during power operation.

(E) Significant (≥10 percent) power changes in manual rod control or recirculation flow.

(F) Reactor power change of 10 percent or greater where load change is performed with load limit control or where flux, temperature, or speed control is on manual (for HTGR).

(G) Loss of coolant, including—

(*1*) Significant PWR steam generator leaks

(*2*) Inside and outside primary containment

(*3*) Large and small, including leak-rate determination

(*4*) Saturated reactor coolant response (PWR).

(H) Loss of instrument air (if simulated plant specific).

(I) Loss of electrical power (or degraded power sources).

(J) Loss of core coolant flow/natural circulation.

(K) Loss of feedwater (normal and emergency).

(L) Loss of service water, if required for safety.

(M) Loss of shutdown cooling.

(N) Loss of component cooling system or cooling to an individual component.

(O) Loss of normal feedwater or normal feedwater system failure.

(P) Loss of condenser vacuum.

(Q) Loss of protective system channel.

(R) Mispositioned control rod or rods (or rod drops).

(S) Inability to drive control rods.

(T) Conditions requiring use of emergency boration or standby liquid control system.

(U) Fuel cladding failure or high activity in reactor coolant or offgas.

(V) Turbine or generator trip.

(W) Malfunction of an automatic control system that affects reactivity.

(X) Malfunction of reactor coolant pressure/volume control system.

(Y) Reactor trip.

(Z) Main steam line break (inside or outside containment).

(AA) A nuclear instrumentation failure.

(ii) Each licensed operator and senior operator has demonstrated satisfactory understanding of the operation of the apparatus and mechanisms associated with the control manipulations in paragraph (c)(3)(i) of this section, and knows the operating procedures in each area for which the operator or senior operator is licensed.

(iii) Each licensed operator and senior operator is cognizant of facility design changes, procedure changes, and facility license changes.

(iv) Each licensed operator and senior operator reviews the contents of all abnormal and emergency procedures on a regularly scheduled basis.

(v) A simulator may be used in meeting the requirements of paragraphs (c)(3)(i) and (3)(ii) of this section, if it reproduces the general operating characteristics of the facility involved and the arrangement of the instrumentation and controls of the simulator is similar to that of the facility involved. If the simulator or simulation device is used to administer operating tests for a facility, as provided in § 55.45(b)(1), the device approved to meet the requirements of § 55.45(b)(1) must be used for credit to be given for meeting the requirements of paragraphs (c)(3)(i) (G through AA) of this section.

(4) *Evaluation.* The requalification program must include—

(i) Comprehensive requalification written examinations and annual operating tests which determine areas in which retraining is needed to upgrade licensed operator and senior operator knowledge.

(ii) Written examinations which determine licensed operators' and senior operators' knowledge of subjects covered in the requalification program and provide a basis for evaluating their knowledge of abnormal and emergency procedures.

(iii) Systematic observation and evaluation of the performance and competency of licensed operators and senior operators by supervisors and/or training staff members, including evaluation of actions taken or to be taken during actual or simulated abnormal and emergency procedures.

(iv) Simulation of emergency or abnormal conditions that may be accomplished by using the control panel of the facility involved or by using a simulator. When the control panel of the facility is used for simulation, the actions taken or to be taken for the emergency or abnormal condition shall be discussed; actual manipulation of the plant controls is not required. If a simulator is used in meeting the requirements of paragraph (c)(4)(iii) of this section, it must accurately reproduce the operating characteristics of the facility involved and the arrangement of the instrumentation and controls of the simulator must closely parallel that of the facility involved. After the provisions of § 55.46 have been implemented at a facility, the Commission approved or plant-referenced simulator must be used to comply with this paragraph.

(v) Provisions for each licensed operator and senior operator to participate in an accelerated requalification program where performance evaluations conducted pursuant to paragraphs (c)(4) (i) through (iv) of this section clearly indicated the need.

(5) *Records.* The requalification program documentation must include the following:

(i) The facility licensee shall maintain records documenting the participation of each licensed operator and senior operator in the requalification program. The records must contain copies of written examinations administered, the answers given by the licensee, and the results of evaluations and documentation of operating tests

and of any additional training administered in areas in which an operator or senior operator has exhibited deficiencies. The facility licensee shall retain these records until the operator's or senior operator's license is renewed.

(ii) Each record required by this part must be legible throughout the retention period specified by each Commission regulation. The record may be the original or a reproduced copy or a microform provided that the copy or microform is authenticated by authorized personnel and that the microform is capable of producing a clear copy throughout the required retention period.

(iii) If there is a conflict between the Commission's regulations in this part, and any license condition, or other written Commission approval or authorization pertaining to the retention period for the same type of record, the retention period specified for these records by the regulations in this part apply unless the Commission, pursuant to §55.11, grants a specific exemption from this record retention requirement.

(6) *Alternative training programs.* The requirements of this section may be met by requalification programs conducted by persons other than the facility licensee if the requalification programs are similar to the program described in paragraphs (c) (1) through (5) of this section and the alternative program has been approved by the Commission.

(7) *Applicability to research and test reactor facilities.* To accommodate specialized modes of operation and differences in control, equipment, and operator skills and knowledge, the requalification program for each licensed operator and senior operator of a research reactor or test reactor facility must conform generally but need not be identical to the requalification program outlined in paragraphs (c) (1) through (6) of this section. Significant deviations from the requirements of paragraphs (c) (1) through (6) of this section will be permitted only if supported by written justification and approved by the Commission.

[52 FR 9460, Mar. 25, 1987, as amended at 59 FR 5938, Feb. 9, 1994; 66 FR 52668, Oct. 17, 2001, 81 FR 86909, Dec. 2, 2016]

Subpart G—Modification and Revocation of Licenses

§55.61 Modification and revocation of licenses.

(a) The terms and conditions of all licenses are subject to amendment, revision, or modification by reason of rules, regulations, or orders issued in accordance with the Act or any amendments thereto.

(b) Any license may be revoked, suspended, or modified, in whole or in part:

(1) For any material false statement in the application or in any statement of fact required under section 182 of the Act,

(2) Because of conditions revealed by the application or statement of fact or any report, record, inspection or other means that would warrant the Commission to refuse to grant a license on an original application,

(3) For willful violation of, or failure to observe any of the terms and conditions of the Act, or the license, or of any rule, regulation, or order of the Commission, or

(4) For any conduct determined by the Commission to be a hazard to safe operation of the facility.

(5) For the sale, use or possession of illegal drugs, or refusal to participate in the facility drug and alcohol testing program, or a confirmed positive test for drugs, drug metabolites, or alcohol in violation of the conditions and cutoff levels established by §55.53(j) or the consumption of alcoholic beverages within the protected area of power reactors or the controlled access area of non-power reactors, or a determination of unfitness for scheduled work as a result of the consumption of alcoholic beverages.

[52 FR 9460, Mar. 25, 1987, as amended at 56 FR 32070, July 15, 1991]

Subpart H—Enforcement

§55.71 Violations.

(a) The Commission may obtain an injunction or other court order to prevent a violation of the provisions of—

(1) The Atomic Energy Act of 1954, as amended;

(2) Title II of the Energy Reorganization Act of 1974, as amended; or

(3) A regulation or order issued pursuant to those Acts.

(b) The Commission may obtain a court order for the payment of a civil penalty imposed under section 234 of the Atomic Energy Act:

(1) For violations of—

(i) Sections 53, 57, 62, 63, 81, 82, 101, 103, 104, 107, or 109 of the Atomic Energy Act of 1954, as amended;

(ii) Section 206 of the Energy Reorganization Act;

(iii) Any rule, regulation, or order issued pursuant to the sections specified in paragraph (b)(1)(i) of this section;

(iv) Any term, condition, or limitation of any license issued under the sections specified in paragraph (b)(1)(i) of this section.

(2) For any violation for which a license may be revoked under section 186 of the Atomic Energy Act of 1954, as amended.

[57 FR 55076, Nov. 24, 1992]

§ 55.73 Criminal penalties.

(a) Section 223 of the Atomic Energy Act of 1954, as amended, provides for criminal sanctions for willful violation of, attempted violation of, or conspiracy of violate, any regulation issued under sections 161b, 161i, or 161o of the Act. For purposes of section 223, all the regulations in part 55 are issued under one or more of sections 161b, 161i, or 161o, except for the sections listed in paragraph (b) of this section.

(b) The regulations in part 55 that are not issued under sections 161b, 161i, or 161o for the purposes of section 223 are as follows: §§ 55.1, 55.2, 55.4, 55.5, 55.6, 55.7, 55.8, 55.11. 55.13, 55.31, 55.33, 55.35, 55.41, 55.43, 55.47, 55.51, 55.55, 55.57, 55.61, 55.71, and 55.73.

[57 FR 55076, Nov. 24, 1992]

PART 60—DISPOSAL OF HIGH-LEVEL RADIOACTIVE WASTES IN GEOLOGIC REPOSITORIES

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AUTHORITY: Atomic Energy Act of 1954, secs. 51, 53, 62, 63, 65, 81, 161, 182, 183, 223, 234 (42 U.S.C. 2071, 2073, 2092, 2093, 2095, 2111, 2201, 2232, 2233, 2273, 2282); Energy Reorganization Act of 1974, secs. 201, 202, 206, 211 (42 U.S.C. 5841, 5842, 5846, 5851); 42 U.S.C. 2021a; National Environmental Policy Act of 1969 (42 U.S.C. 4332); Nuclear Waste Policy Act of 1982, secs. 114, 117, 121 (42 U.S.C. 10134, 10137, 10141), 44 U.S.C. 3504 note.

SOURCE: 46 FR 13980, Feb. 25, 1981, unless otherwise noted.

Subpart A—General Provisions

§60.1 Purpose and scope.

This part prescribes rules governing the licensing (including issuance of a construction authorization) of the U.S. Department of Energy to receive and possess source, special nuclear, and byproduct material at a geologic repository operations area sited, constructed, or operated in accordance with the Nuclear Waste Policy Act of 1982, as amended. This part does not apply to any activity licensed under another part of this chapter. This part does not apply to the licensing of the U.S. Department of Energy to receive and possess source, special nuclear, and byproduct material at a geologic repository operations area sited, constructed, or operated at Yucca Mountain, Nevada, in accordance with the Nuclear Waste Policy Act of 1992, as amended, and the Energy Policy Act of 1992, subject to part 63 of this chapter. This part also gives notice to all persons who knowingly provide to any licensee, applicant, contractor, or subcontractor, components, equipment, materials, or other goods or services, that relate to a licensee's or applicant's activities subject to this part, that they

may be individually subject to NRC enforcement action for violation of § 60.11.

[69 FR 2279, Jan. 14, 2004]

§ 60.2 Definitions.

As used in this part:

Accessible environment means:

(1) The atmosphere;

(2) The land surface;

(3) Surface water;

(4) Oceans; and

(5) The portion of the lithosphere that is outside the postclosure controlled area.

Affected Indian Tribe means any Indian Tribe (1) within whose reservation boundaries a repository for high-level radioactive waste or spent fuel is proposed to be located; or (2) whose Federally defined possessory or usage rights to other lands outside of the reservation's boundaries arising out of Congressionally ratified treaties or other Federal law may be substantially and adversely affected by the locating of such a facility; *Provided*, That the Secretary of the Interior finds, upon the petition of the appropriate governmental officials of the Tribe, that such effects are both substantial and adverse to the Tribe.

Anticipated processes and events means those natural processes and events that are reasonably likely to occur during the period the intended performance objective must be achieved. To the extent reasonable in the light of the geologic record, it shall be assumed that those processes operating in the geologic setting during the Quaternary Period continue to operate but with the perturbations caused by the presence of emplaced radioactive waste superimposed thereon.

Barrier means any material or structure that prevents or substantially delays movement of water or radionuclides.

Candidate area means a geologic and hydrologic system within which a geologic repository may be located.

Commencement of construction means clearing of land, surface or subsurface excavation, or other substantial action that would adversely affect the environment of a site, but does not include changes desirable for the temporary use of the land for public recreational uses, site characterization activities, other preconstruction monitoring and investigation necessary to establish background information related to the suitability of a site or to the protection of environmental values, or procurement or manufacture of components of the geologic repository operations area.

Commission means the Nuclear Regulatory Commission or its duly authorized representatives.

Containment means the confinement of radioactive waste within a designated boundary.

Controlled area means a surface location, to be marked by suitable monuments, extending horizontally no more than 10 kilometers in any direction from the outer boundary of the underground facility, and the underlying subsurface, which area has been committed to use as a geologic repository and from which incompatible activities would be restricted following permanent closure.

Design bases means that information that identifies the specific functions to be performed by a structure, system, or component of a facility and the specific values or ranges of values chosen for controlling parameters as reference bounds for design. These values may be restraints derived from generally accepted ''state-of-the-art'' practices for achieving functional goals or requirements derived from analysis (based on calculation or experiments) of the effects of a postulated event under which a structure, system, or component must meet its functional goals. The values for controlling parameters for external events include:

(1) Estimates of severe natural events to be used for deriving design bases that will be based on consideration of historical data on the associated parameters, physical data, or analysis of upper limits of the physical processes involved; and

(2) Estimates of severe external man-induced events, to be used for deriving design bases, that will be based on analysis of human activity in the region, taking into account the site characteristics and the risks associated with the event.

Design basis events means:

(1)(i) Those natural and human-induced events that are reasonably likely

to occur regularly, moderately frequently, or one or more times before permanent closure of the geologic repository operations area; and

(ii) Other natural and man-induced events that are considered unlikely, but sufficiently credible to warrant consideration, taking into account the potential for significant radiological impacts on public health and safety.

(2) The events described in paragraph (1)(i) of this definition are referred to as ''Category 1'' design basis events. The events described in paragraph (1)(ii) of this definition are referred to as ''Category 2'' design basis events.

Director means the Director of the Nuclear Regulatory Commission's Office of Nuclear Material Safety and Safeguards.

Disposal means the isolation of radioactive wastes from the accessible environment.

Disturbed zone means that portion of the postclosure controlled area, the physical or chemical properties of which have changed as a result of underground facility construction or as a result of heat generated by the emplaced radioactive wastes, such that the resultant change of properties may have a significant effect on the performance of the geologic repository.

DOE means the U.S. Department of Energy or its duly authorized representatives.

Engineered barrier system means the waste packages and the underground facility.

Geologic repository means a system which is intended to be used for, or may be used for, the disposal of radioactive wastes in excavated geologic media. A geologic repository includes: (1) The geologic repository operations area, and (2) the portion of the geologic setting that provides isolation of the radioactive waste.

Geologic repository operations area means a high-level radioactive waste facility that is part of a geologic repository, including both surface and subsurface areas, where waste handling activities are conducted.

Geologic setting means the geologic, hydrologic, and geochemical systems of the region in which a geologic repository operations area is or may be located.

Groundwater means all water which occurs below the land surface.

High-level radioactive waste or *HLW* means: (1) Irradiated reactor fuel, (2) liquid wastes resulting from the operation of the first cycle solvent extraction system, or equivalent, and the concentrated wastes from subsequent extraction cycles, or equivalent, in a facility for reprocessing irradiated reactor fuel, and (3) solids into which such liquid wastes have been converted.

HLW facility means a facility subject to the licensing and related regulatory authority of the Commission pursuant to Sections 202(3) and 202(4) of the Energy Reorganization Act of 1974 (88 Stat. 1244).[1]

Host rock means the geologic medium in which the waste is emplaced.

Important to safety, with reference to structures, systems, and components, means those engineered features of the repository whose function is:

(1) To provide reasonable assurance that high-level waste can be received, handled, packaged, stored, emplaced, and retrieved without exceeding the requirements of § 60.111(a) for Category 1 design basis events; or

(2) To prevent or mitigate Category 2 design basis events that could result in doses equal to or greater than the values specified in § 60.136 to any individual located on or beyond any point on the boundary of the preclosure controlled area.

Isolation means inhibiting the transport of radioactive material so that amounts and concentrations of this material entering the accessible environment will be kept within prescribed limits.

NRC Public Document Room means the facility at One White Flint North, 11555 Rockville Pike, Room 0–1F23, Rockville, Maryland 20852, where certain

[1] These are DOE ''facilities used primarily for the receipt and storage of high-level radioactive wastes resulting from activities licensed under such Act [the Atomic Energy Act]'' and ''Retrievable Surface Storage Facilities and other facilities authorized for the express purpose of subsequent long-term storage of high-level radioactive wastes generated by [DOE], which are not used for, or are part of, research and development activities.''

public records of the NRC that were made available for public inspection in paper or microfiche prior to the implementation of the NRC Agency wide Documents Access and Management System, commonly referred to as ADAMS, will remain available for public inspection. It is also the place where computer terminals are available to access the NRC Library components of ADAMS on the NRC Website, *http://www.nrc.gov*, where copies can be made or ordered as set forth in § 9.35 of this chapter. The facility is staffed with reference librarians to assist the public in identifying and locating documents and in using the NRC Web site and ADAMS. The NRC Public Document Room is open from 7:30 am to 4:15 pm, Monday through Friday, except on Federal holidays, Reference service and access to documents may also be requested by telephone (1–800–397–4209) between 8:30 am and 4:15 pm, or by e-mail (*PDR.Resource@nrc.gov*), fax (301–415–3548), or letter (NRC Public Document Room, One White Flint North, 11555 Rockville Pike, Room 0–1F23, Rockville, Maryland 20852).

NRC Web site, *http://www.nrc.gov* is the Internet uniform resource locator name for the Internet address of the Web site where NRC will ordinarily make available its public records for inspection.

Permanent closure means final backfilling of the underground facility and the sealing of shafts and boreholes.

Performance confirmation means the program of tests, experiments, and analyses which is conducted to evaluate the accuracy and adequacy of the information used to determine with reasonable assurance that the performance objectives for the period after permanent closure will be met.

Postclosure controlled area means a surface location, to be marked by suitable monuments, extending horizontally no more than 10 kilometers in any direction from the outer boundary of the underground facility, and the underlying subsurface, which area has been committed to use as a geologic repository and from which incompatible activities would be restricted following permanent closure.

Preclosure controlled area means that surface area surrounding the geologic repository operations area for which the licensee exercises authority over its use, in accordance with the provisions of this part, until permanent closure has been completed.

Radioactive waste or *waste* means HLW and other radioactive materials other than HLW that are received for emplacement in a geologic repository.

Restricted area means an area, access to which is limited by the licensee for the purpose of protecting individuals against undue risks from exposure to radiation and radioactive materials. Restricted area does not include areas used as residential quarters, but separate rooms in a residential building may be set aside as a restricted area.

Retrieval means the act of intentionally removing radioactive waste from the underground location at which the waste had been previously emplaced for disposal.

Saturated zone means that part of the earth's crust beneath the regional water table in which all voids, large and small, are ideally filled with water under pressure greater than atmospheric.

Site means the location of the preclosure controlled area, or of the postclosure controlled area, or both.

Site characterization means the program of exploration and research, both in the laboratory and in the field, undertaken to establish the geologic conditions and the ranges of those parameters of a particular site relevant to the procedures under this part. Site characterization includes borings, surface excavations, excavation of exploratory shafts, limited subsurface lateral excavations and borings, and in situ testing at depth needed to determine the suitability of the site for a geologic repository, but does not include preliminary borings and geophysical testing needed to decide whether site characterization should be undertaken.

Unanticipated processes and events means those processes and events affecting the geologic setting that are judged not to be reasonably likely to occur during the period the intended performance objective must be achieved, but which are nevertheless sufficiently credible to warrant consideration. Unanticipated processes and events may be either natural processes

or events or processes and events initiated by human activities other than those activities licensed under this part. Processes and events initiated by human activities may only be found to be sufficiently credible to warrant consideration if it is assumed that: (1) The monuments provided for by this part are sufficiently permanent to serve their intended purpose; (2) the value to future generations of potential resources within the site can be assessed adequately under the applicable provisions of this part; (3) an understanding of the nature of radioactivity, and an appreciation of its hazards, have been retained in some functioning institutions; (4) institutions are able to assess risk and to take remedial action at a level of social organization and technological competence equivalent to, or superior to, that which was applied in initiating the processes or events concerned; and (5) relevant records are preserved, and remain accessible, for several hundred years after permanent closure.

Underground facility means the underground structure, including openings and backfill materials, but excluding shafts, boreholes, and their seals.

Unrestricted area means an area, access to which is neither limited nor controlled by the licensee.

Unsaturated zone means the zone between the land surface and the regional water table. Generally, fluid pressure in this zone is less than atmospheric pressure, and some of the voids may contain air or other gases at atmospheric pressure. Beneath flooded areas or in perched water bodies the fluid pressure locally may be greater than atmospheric.

Waste form means the radioactive waste materials and any encapsulating or stabilizing matrix.

Waste package means the waste form and any containers, shielding, packing and other absorbent materials immediately surrounding an individual waste container.

Water table means that surface in a groundwater body at which the water pressure is atmospheric.

[48 FR 28217, June 21, 1983, as amended at 50 FR 29647, July 22, 1985; 51 FR 27162, July 30, 1986; 53 FR 43421, Oct. 27, 1988; 61 FR 64267, Dec. 4, 1996; 64 FR 48953, Sept. 9, 1999; 69 FR 76601, Dec. 22, 2004; 76 FR 72086, Nov. 22, 2011]

§ 60.3 License required.

(a) DOE shall not receive or possess source, special nuclear, or byproduct material at a geologic repository operations area except as authorized by a license issued by the Commission pursuant to this part.

(b) DOE shall not commence construction of a geologic repository operations area unless it has filed an application with the Commission and has obtained construction authorization as provided in this part. Failure to comply with this requirement shall be grounds for denial of a license.

§ 60.4 Communications and records.

(a) Except where otherwise specified, all communications and reports concerning the regulations in this part and applications filed under them should be sent by mail addressed: ATTN: Document Control Desk: Director, Office of Nuclear Material Safety and Safeguards, U.S. Nuclear Regulatory Commission, Washington, DC 20555–0001; by hand delivery to the NRC's offices at 11555 Rockville Pike, Rockville, Maryland; or, where practicable, by electronic submission, for example, via Electronic Information Exchange, or CD-ROM. Electronic submissions must be made in a manner that enables the NRC to receive, read, authenticate, distribute, and archive the submission, and process and retrieve it a single page at a time. Detailed guidance on making electronic submissions can be obtained by visiting the NRC's Web site at *http://www.nrc.gov/site-help/e-submittals.html*; by e-mail to *MSHD.Resource@nrc.gov*; or by writing the Office of the Chief Information Officer, U.S. Nuclear Regulatory Commission, Washington, DC 20555–0001. The guidance discusses, among other topics, the formats the NRC can accept, the use of electronic signatures, and the treatment of nonpublic information.

(b) Each record required by this part must be legible throughout the retention period specified by each Commission regulation. The record may be the original or a reproduced copy or a microform provided that the copy or microform is authenticated by authorized personnel and that the microform is capable of producing a clear copy throughout the required retention period. The record may also be stored in electronic media with the capability for producing legible, accurate, and complete records during the required retention period. Records such as letters, drawings, specifications, must include all pertinent information such as stamps, initials, and signatures. The licensee shall maintain adequate safeguards against tampering with and loss of records.

[53 FR 19251, May 27, 1988, as amended at 53 FR 43421, Oct. 27, 1988; 68 FR 58813, Oct. 10, 2003; 74 FR 62682, Dec. 1, 2009; 80 FR 74980, Dec. 1, 2015]

§ 60.5 Interpretations.

Except as specifically authorized by the Commission, in writing, no interpretation of the meaning of the regulations in this part by any officer or employee of the Commission other than a written interpretation by the General Counsel will be considered binding upon the Commission.

§ 60.6 Exemptions.

The Commission may, upon application by DOE, any interested person, or upon its own initiative, grant such exemptions from the requirements of the regulations in this part as it determines are authorized by law, will not endanger life or property or the common defense and security, and are otherwise in the public interest.

§ 60.7 License not required for certain preliminary activities.

The requirement for a license set forth in § 60.3(a) of this part is not applicable to the extent that DOE receives and possesses source, special nuclear, and byproduct material at a geologic repository:

(a) For purposes of site characterization; or

(b) For use, during site characterization or construction, as components of radiographic, radiation monitoring, or similar equipment or instrumentation.

§ 60.8 Information collection requirements: Approval.

(a) The Nuclear Regulatory Commission has submitted the information collection requirements contained in this part to the Office of Management and Budget (OMB) for approval as required by the Paperwork reduction Act (44 U.S.C. 3501 *et seq.*). The NRC may not conduct or sponsor, and a person is not required to respond to, a collection of information unless it displays a currently valid OMB control number. OMB has approved the information collection requirements contained in this part under control number 3150–0127.

(b) The approved information collection requirements contained in this part appear in §§ 60.47, 60.62, 60.63, 60.65.

(c) In § 60.47, IAEA Design Information Questionnaire forms are approved under control number 3150–0056, and DOC/NRC Forms AP–1, AP–A, and associated forms are approved under control number 0694–0135.

[61 FR 64268, Dec. 4, 1996, as amended at 62 FR 52188, Oct. 6, 1997; 73 FR 78605, Dec. 23, 2008; 85 FR 65663, Oct. 16, 2020]

§ 60.9 Employee protection.

(a) Discrimination by a Commission licensee, an applicant for a Commission license, or a contractor or subcontractor of a Commission licensee or applicant against an employee for engaging in certain protected activities is prohibited. Discrimination includes discharge and other actions that relate to compensation, terms, conditions, or privileges of employment. The protected activities are established in section 211 of the Energy Reorganization Act of 1974, as amended, and in general are related to the administration or enforcement of a requirement imposed under the Atomic Energy Act or the Energy Reorganization Act.

(1) The protected activities include but are not limited to:

(i) Providing the Commission or his or her employer information about alleged violations of either of the statutes named in paragraph (a) introductory text of this section or possible violations of requirements imposed under either of those statutes;

(ii) Refusing to engage in any practice made unlawful under either of the statutes named in paragraph (a) introductory text or under these requirements if the employee has identified the alleged illegality to the employer;

(iii) Requesting the Commission to institute action against his or her employer for the administration or enforcement of these requirements;

(iv) Testifying in any Commission proceeding, or before Congress, or at any Federal or State proceeding regarding any provision (or proposed provision) of either of the statutes named in paragraph (a) introductory text.

(v) Assisting or participating in, or is about to assist or participate in, these activities.

(2) These activities are protected even if no formal proceeding is actually initiated as a result of the employee assistance or participation.

(3) This section has no application to any employee alleging discrimination prohibited by this section who, acting without direction from his or her employer (or the employer's agent), deliberately causes a violation of any requirement of the Energy Reorganization Act of 1974, as amended, or the Atomic Energy Act of 1954, as amended.

(b) Any employee who believes that he or she has been discharged or otherwise discriminated against by any person for engaging in protected activities specified in paragraph (a)(1) of this section may seek a remedy for the discharge or discrimination through an administrative proceeding in the Department of Labor. The administrative proceeding must be initiated within 180 days after an alleged violation occurs. The employee may do this by filing a complaint alleging the violation with the Department of Labor, Employment Standards Administration, Wage and Hour Division. The Department of Labor may order reinstatement, back pay, and compensatory damages.

(c) A violation of paragraph (a), (e), or (f) of this section by a Commission licensee, an applicant for a Commission license, or a contractor or subcontractor of a Commission licensee or applicant may be grounds for—

(1) Denial, revocation, or suspension of the license.

(2) Imposition of a civil penalty on the licensee, applicant, or a contractor or subcontractor of the licensee or applicant.

(3) Other enforcement action.

(d) Actions taken by an employer, or others, which adversely affect an employee may be predicated upon nondiscriminatory grounds. The prohibition applies when the adverse action occurs because the employee has engaged in protected activities. An employee's engagement in protected activities does not automatically render him or her immune from discharge or discipline for legitimate reasons or from adverse action dictated by nonprohibited considerations.

(e)(1) Each licensee and each applicant for a license shall prominently post the revision of NRC Form 3, ''Notice to Employees,'' referenced in 10 CFR 19.11(c). This form must be posted at locations sufficient to permit employees protected by this section to observe a copy on the way to or from their place of work. Premises must be posted not later than 30 days after an application is docketed and remain posted while the application is pending before the Commission, during the term of the license, and for 30 days following license termination.

(2) Copies of NRC Form 3 may be obtained by writing to the Regional Administrator of the appropriate U.S. Nuclear Regulatory Commission Regional Office listed in appendix D to part 20 of this chapter, via email to *Forms.Resource@nrc.gov*, or by visiting the NRC's online library at *http://www.nrc.gov/reading-rm/doc-collections/forms/*.

(f) No agreement affecting the compensation, terms, conditions, or privileges of employment, including an agreement to settle a complaint filed by an employee with the Department of Labor pursuant to section 211 of the Energy Reorganization Act of 1974, as amended, may contain any provision which would prohibit, restrict, or otherwise discourage an employee from participating in protected activity as defined in paragraph (a)(1) of this section including, but not limited to, providing information to the NRC or to

his or her employer on potential violations or other matters within NRC's regulatory responsibilities.

[58 FR 52411, Oct. 8, 1993, as amended at 60 FR 24552, May 9, 1995; 61 FR 6765, Feb. 22, 1996; 68 FR 58813, Oct. 10, 2003; 72 FR 63974, Nov. 14, 2007; 73 FR 30459, May 28, 2008; 79 FR 66605, Nov. 10, 2014]

§ 60.10 Completeness and accuracy of information.

(a) Information provided to the Commission by an applicant for a license or by a licensee or information required by statute or by the Commission's regulations, orders, or license conditions to be maintained by the applicant or the licensee shall be complete and accurate in all material respects.

(b) Each applicant or licensee shall notify the Commission of information identified by the applicant or licensee as having for the regulated activity a significant implication for public health and safety or common defense and security. An applicant or licensee violates this paragraph only if the applicant or licensee fails to notify the Commission of information that the applicant or licensee has identified as having a significant implication for public health and safety or common defense and security. Notification shall be provided to the Administrator of the appropriate Regional Office within two working days of identifying the information. This requirement is not applicable to information which is already required to be provided to the Commission by other reporting or updating requirements.

[52 FR 49372, Dec. 31, 1987]

§ 60.11 Deliberate misconduct.

(a) Any licensee, applicant for a license, employee of a licensee or applicant; or any contractor (including a supplier or consultant), subcontractor, employee of a contractor or subcontractor of any licensee or applicant for a license who knowingly provides to any licensee, applicant, contractor, or subcontractor, any components, equipment, materials, or other goods or services that relate to a licensee's or applicant's activities in this part, may not:

(1) Engage in deliberate misconduct that causes or would have caused, if not detected, a licensee or applicant to be in violation of any rule, regulation, or order; or any term, condition, or limitation of any license issued by the Commission; or

(2) Deliberately submit to the NRC, a licensee, an applicant, or a licensee's or applicant's contractor or subcontractor, information that the person submitting the information knows to be incomplete or inaccurate in some respect material to the NRC.

(b) A person who violates paragraph (a)(1) or (a)(2) of this section may be subject to enforcement action in accordance with the procedures in 10 CFR part 2, subpart B.

(c) For the purposes of paragraph (a)(1) of this section, deliberate misconduct by a person means an intentional act or omission that the person knows:

(1) Would cause a licensee or applicant to be in violation of any rule, regulation, or order; or any term, condition, or limitation, of any license issued by the Commission; or

(2) Constitutes a violation of a requirement, procedure, instruction, contract, purchase order, or policy of a licensee, applicant, contractor, or subcontractor.

[63 FR 1898, Jan. 13, 1998]

Subpart B—Licenses

PREAPPLICATION REVIEW

§ 60.15 Site characterization.

(a) Prior to submittal of an application for a license to be issued under this part DOE shall conduct a program of site characterization with respect to the site to be described in such application.

(b) Unless the Commission determines with respect to the site described in the application that it is not necessary, site characterization shall include a program of in situ exploration and testing at the depths that wastes would be emplaced.

(c) The program of site characterization shall be conducted in accordance with the following:

(1) Investigations to obtain the required information shall be conducted in such a manner as to limit adverse effects on the long-term performance of

the geologic repository to the extent practical.

(2) The number of exploratory boreholes and shafts shall be limited to the extent practical consistent with obtaining the information needed for site characterization.

(3) To the extent practical, exploratory boreholes and shafts in the geologic repository operations area shall be located where shafts are planned for underground facility construction and operation or where large unexcavated pillars are planned.

(4) Subsurface exploratory drilling, excavation, and in situ testing before and during construction shall be planned and coordinated with geologic repository operations area design and construction.

[46 FR 13980, Feb. 25, 1981, as amended at 48 FR 28219, June 21, 1983. Redesignated and amended at 51 FR 27162, July 30, 1986; 54 FR 27871, July 3, 1989]

§ 60.16 Site characterization plan required.

Before proceeding to sink shafts at any area which has been approved by the President for site characterization, DOE shall submit to the Director, for review and comment, a site characterization plan for such area. DOE shall defer the sinking of such shafts until such time as there has been an opportunity for Commission comments thereon to have been solicited and considered by DOE.

[51 FR 27162, July 30, 1986]

§ 60.17 Contents of site characterization plan.

The site characterization plan shall contain—

(a) A general plan for site characterization activities to be conducted at the area to be characterized, which general plan shall include:

(1) A description of such area, including information on quality assurance programs that have been applied to the collection, recording, and retention of information used in preparing such description.

(2) A description of such site characterization activities, including the following—

(i) The extent of planned excavations;

(ii) Plans for any onsite testing with radioactive material, including radioactive tracers, or nonradioactive material;

(iii) Plans for any investigation activities that may affect the capability of such area to isolate high-level radioactive waste;

(iv) Plans to control any adverse impacts from such site characterization activities that are important to safety or that are important to waste isolation; and

(v) Plans to apply quality assurance to data collection, recording, and retention.

(3) Plans for the decontamination and decommissioning of such area, and for the mitigation of any significant adverse environmental impacts caused by site characterization activities, if such area is determined unsuitable for application for a construction authorization for a geologic repository operations area;

(4) Criteria, developed pursuant to section 112(a) of the Nuclear Waste Policy Act of 1982, to be used to determine the suitability of such area for the location of a geologic repository; and

(5) Any other information which the Commission, by rule or order, requires.

(b) A description of the possible waste form or waste package for the high-level radioactive waste to be emplaced in such geologic repository, a description (to the extent practicable) of the relationship between such waste form or waste package and the host rock at such area, and a description of the activities being conducted by DOE with respect to such possible waste form or waste package or their relationship; and

(c) A conceptual design for the geologic repository operations area that takes into account likely site-specific requirements.

[51 FR 27163, July 30, 1986]

§ 60.18 Review of site characterization activities.[2]

(a) The Director shall cause to be published in the FEDERAL REGISTER a

[2] In addition to the review of site characterization activities specified in this section,

Continued

notice that a site characterization plan has been received from DOE and that a staff review of such plan has begun. The notice shall identify the area to be characterized and the NRC staff members to be consulted for further information.

(b) The Director shall make a copy of the site characterization plan available at the Public Document Room. The Director shall also transmit copies of the published notice of receipt to the Governor and legislature of the State in which the area to be characterized is located and to the governing body of any affected Indian Tribe. The Director shall provide an opportunity, with respect to any area to be characterized, for the State in which such area is located and for affected Indian Tribes to present their views on the site characterization plan and their suggestions with respect to comments thereon which may be made by NRC. In addition, the Director shall make NRC staff available to consult with States and affected Indian Tribes as provided in Subpart C of this part.

(c) The Director shall review the site characterization plan and prepare a site characterization analysis with respect to such plan. In the preparation of such site characterization analysis, the Director may invite and consider the views of interested persons on DOE's site characterization plan and may review and consider comments made in connection with public hearings held by DOE.

(d) The Director shall provide to DOE the site characterization analysis together with such additional comments as may be warranted. These comments shall include either a statement that the Director has no objection to the DOE's site characterization program, if such a statement is appropriate, or specific objections with respect to DOE's program for characterization of the area concerned. In addition, the Director may make specific recommendations pertinent to DOE's site characterization program.

(e) If DOE's planned site characterization activities include onsite testing with radioactive material, including radioactive tracers, the Director's comments shall include a determination regarding whether or not the Commission concurs that the proposed use of such radioactive material is necessary to provide data for the preparation of the environmental reports required by law and for an application to be submitted under § 60.22 of this part.

(f) The Director shall publish in the FEDERAL REGISTER a notice of availability of the site characterization analysis and a request for public comment within a reasonable period, as specified (not less than 90 days). The notice along with copies of the site characterization analysis shall be available at the NRC Web site, *http://www.nrc.gov*, and copies of any comments received will also be made available there.

(g) During the conduct of site characterization activities, DOE shall report not less than once every six months to the Commission on the nature and extent of such activities and the information that has been developed, and on the progress of waste form and waste package research and development. The semiannual reports shall include the results of site characterization studies, the identification of new issues, plans for additional studies to resolve new issues, elimination of planned studies no longer necessary, identification of decision points reached and modifications to schedules where appropriate. DOE shall also report its progress in developing the design of a geologic repository operations area appropriate for the area being characterized, noting when key design parameters or features which depend upon the results of site characterization will be established. Other topics related to site characterization shall also be covered if requested by the Director.

(h) During the conduct of site characterization activities, NRC staff shall be

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the Commission contemplates an ongoing review of other information on site investigation and site characterization, in order to allow early identification of potential licensing issues for timely resolution. This activity will include, for example, a review of the environmental assessments prepared by DOE at the time of site nomination, and review of issues related to long lead time exploratory shaft planning and procurement actions by DOE prior to issuance of site characterization plans.

permitted to visit and inspect the locations at which such activities are carried out and to observe excavations, borings, and in situ tests as they are done.

(i) The Director may comment at any time in writing to DOE, expressing current views on any aspect of site characterization. In particular, such comments shall be made whenever the Director, upon review of comments invited on the site characterization analysis or upon review of DOE's semiannual reports, determines that there are substantial new grounds for making recommendations or stating objections to DOE's site characterization program. The Director shall invite public comment on any comments which the Director makes to DOE upon review of the DOE semiannual reports or on any other comments which the Director makes to DOE on site characterization.

(j) The Director shall transmit copies of the site characterization analysis and all comments to DOE made by the Director under this section to the Governor and legislature of the State in which the area to be characterized is located and to the governing body of any affected Indian Tribe. When transmitting the site characterization analysis under this paragraph, the Director shall invite the addressees to review and comment thereon.

(k) All correspondence between DOE and the NRC under this section, including the reports described in paragraph (g), shall be placed in the Public Document Room.

(l) The activities described in paragraphs (a) through (k) of this section constitute informal conference between a prospective applicant and the staff, as described in § 2.101(a)(1) of this chapter, and are not part of a proceeding under the Atomic Energy Act of 1954, as amended. Accordingly, neither the issuance of a site characterization analysis nor any other comments of the Director made under this section constitutes a commitment to issue any authorization or license or in any way affect the authority of the Commission, the Atomic Safety and Licensing Appeal Board, Atomic Safety and Licensing Boards, other presiding officers, or the Director, in any such proceeding.

[51 FR 27163, July 30, 1986, as amended at 64 FR 48954, Sept. 9, 1999]

LICENSE APPLICATIONS

§ 60.21 Content of application.

(a) An application shall consist of general information and a Safety Analysis Report. An environmental impact statement shall be prepared in accordance with the Nuclear Waste Policy Act of 1982, as amended, and shall accompany the application. Any Restricted Data or National Security Information shall be separated from unclassified information.

(b) The general information shall include:

(1) A general description of the proposed geologic repository identifying the location of the geologic repository operations area, the general character of the proposed activities, and the basis for the exercise of licensing authority by the Commission.

(2) Proposed schedules for construction, receipt of waste, and emplacement of wastes at the proposed geologic repository operations area.

(3) A detailed plan to provide physical protection of high-level radioactive waste in accordance with § 73.51 of this chapter. This plan must include the design for physical protection, the licensee's safeguards contingency plan, and security organization personnel training and qualification plan. The plan must list tests, inspections, audits, and other means to be used to demonstrate compliance with such requirements.

(4) A description of the program to meet the requirements of § 60.78.

(5) A description of site characterization work actually conducted by DOE at all sites considered in the application and, as appropriate, explanations of why such work differed from the description of the site characterization program described in the Site Characterization Report for each site.

(c) The Safety Analysis Report shall include:

(1) A description and assessment of the site at which the proposed geologic repository operations area is to be located with appropriate attention to

those features of the site that might affect geologic repository operations area design and performance. The description of the site shall identify the location of the geologic repository operations area with respect to the boundary of the accessible environment.

(i) The description of the site shall also include the following information regarding subsurface conditions. This description shall, in all cases, include this information with respect to the postclosure controlled area. In addition, where subsurface conditions outside the postclosure controlled area may affect isolation within the postclosure controlled area, the description shall include information with respect to subsurface conditions outside the postclosure controlled area to the extent the information is relevant and material. The detailed information referred to in this paragraph shall include:

(A) The orientation, distribution, aperture in-filling and origin of fractures, discontinuities, and heterogeneities;

(B) The presence and characteristics of other potential pathways such as solution features, breccia pipes, or other potentially permeable features;

(C) The geomechanical properties and conditions, including pore pressure and ambient stress conditions;

(D) The hydrogeologic properties and conditions;

(E) The geochemical properties; and

(F) The anticipated response of the geomechanical, hydrogeologic, and geochemical systems to the maximum design thermal loading, given the pattern of fractures and other discontinuities and the heat transfer properties of the rock mass and groundwater.

(ii) The assessment shall contain:

(A) An analysis of the geology, geophysics, hydrogeology, geochemistry, climatology, and meteorology of the site,

(B) Analyses to determine the degree to which each of the favorable and potentially adverse conditions, if present, has been characterized, and the extent to which it contributes to or detracts from isolation. For the purpose of determining the presence of the potentially adverse conditions, investigations shall extend from the surface to a depth sufficient to determine critical pathways for radionuclide migration from the underground facility to the accessible environment. Potentially adverse conditions shall be investigated outside of the postclosure controlled area if they affect isolation within the postclosure controlled area.

(C) An evaluation of the performance of the proposed geologic repository for the period after permanent closure, assuming anticipated processes and events, giving the rates and quantities of releases of radionuclides to the accessible environment as a function of time; and a similar evaluation which assumes the occurrence of unanticipated processes and events.

(D) The effectiveness of engineered and natural barriers, including barriers that may not be themselves a part of the geologic repository operations area, against the release of radioactive material to the environment. The analysis shall also include a comparative evaluation of alternatives to the major design features that are important to waste isolation, with particular attention to the alternatives that would provide longer radionuclide containment and isolation.

(E) An analysis of the performance of the major design structures, systems, and components, both surface and subsurface, to identify those that are important to safety. For the purposes of this analysis, it shall be assumed that operations at the geologic repository operations area will be carried out at the maximum capacity and rate of receipt of radioactive waste stated in the application.

(F) An explanation of measures used to support the models used to perform the assessments required in paragraphs (A) through (D). Analyses and models that will be used to predict future conditions and changes in the geologic setting shall be supported by using an appropriate combination of such methods as field tests, in situ tests, laboratory tests which are representative of field conditions, monitoring data, and natural analog studies.

(2) A description and discussion of the design, both surface and subsurface, of the geologic repository operations area including:

(i) The principal design criteria and their relationship to any general performance objectives promulgated by the Commission,

(ii) The design bases and the relation of the design bases to the principal design criteria,

(iii) Information relative to materials of construction (including geologic media, general arrangement, and approximate dimensions), and

(iv) Codes and standards that DOE proposes to apply to the design and construction of the geologic repository operations area.

(3) A description and analysis of the design and performance requirements for structures, systems, and components of the geologic repository that are important to safety. The analysis must include a demonstration that—

(i) The requirements of § 60.111(a) will be met, assuming occurrence of Category 1 design basis events; and

(ii) The requirements of § 60.136 will be met, assuming occurrence of Category 2 design basis events.

(4) A description of the quality assurance program to be applied to the structures, systems, and components important to safety and to the engineered and natural barriers important to waste isolation.

(5) A description of the kind, amount, and specifications of the radioactive material proposed to be received and possessed at the geologic repository operations area.

(6) An identification and justification for the selection of those variables, conditions, or other items which are determined to be probable subjects of license specifications. Special attention shall be given to those items that may significantly influence the final design.

(7) A description of the program for control and monitoring of radioactive effluents and occupational radiation exposures to maintain such effluents and exposures in accordance with the requirements of part 20 of this chapter.

(8) A description of the controls that the applicant will apply to restrict access and to regulate land use at the site and adjacent areas, including a conceptual design of monuments which would be used to identify the postclosure controlled area after permanent closure.

(9) Plans for coping with radiological emergencies at any time prior to permanent closure and decontamination or dismantlement of surface facilities.

(10) A description of the program to be used to maintain the records described in §§ 60.71 and 60.72.

(11) A description of design considerations that are intended to facilitate permanent closure and decontamination or dismantlement of surface facilities.

(12) A description of plans for retrieval and alternate storage of the radioactive wastes should the geologic repository prove to be unsuitable for disposal of radioactive wastes.

(13) An identification and evaluation of the natural resources of the geologic setting, including estimates as to undiscovered deposits, the exploitation of which could affect the ability of the geologic repository to isolate radioactive wastes. Undiscovered deposits of resources characteristic of the area shall be estimated by reasonable inference based on geological and geophysical evidence. This evaluation of resources, including undiscoverd deposits, shall be conducted for the site and for areas of similar size that are representative of and are within the geologic setting. For natural resources with current markets the resources shall be assessed, with estimates provided of both gross and net value. The estimate of net value shall take into account current development, extraction and marketing costs. For natural resources without current markets, but which would be marketable given credible projected changes in economic or technological factors, the resources shall be described by physical factors such as tonnage or other amount, grade, and quality.

(14) An identification of those structures, systems, and components of the geologic repository, both surface and subsurface, which require research and development to confirm the adequacy of design. For structures, systems, and components important to safety and for the engineered and natural barriers important to waste isolation, DOE shall provide a detailed description of the programs designed to resolve safety

questions, including a schedule indicating when these questions would be resolved.

(15) The following information concerning activities at the geologic repository operations area:

(i) The organizational structure of DOE as it pertains to construction and operation of the geologic repository operations area including a description of any delegations of authority and assignments of responsibilities, whether in the form of regulations, administrative directives, contract provisions, or otherwise.

(ii) Identification of key positions which are assigned responsibility for safety at and operation of the geologic repository operations area.

(iii) Personnel qualifications and training requirements.

(iv) Plans for startup activities and startup testing.

(v) Plans for conduct of normal activities, including maintenance, surveillance, and periodic testing of structures, systems, and components of the geologic repository operation area.

(vi) Plans for permanent closure and plans for the decontamination or dismantlement of surface facilities.

(vii) Plans for any uses of the geologic repository operations area for purposes other than disposal of radioactive wastes, with an analysis of the effects, if any, that such uses may have upon the operation of the structures, systems, and components important to safety and the engineered and natural barriers important to waste isolation.

(d) The applicant for a license to receive and possess source, special nuclear, and byproduct material at a geologic repository operations area sited, constructed, or operated in accordance with the Nuclear Waste Policy Act of 1982 shall protect Safeguards Information in accordance with the requirements in § 73.21 and the requirements in § 73.22 or § 73.23 of this chapter, as applicable, and shall protect classified information in accordance with the requirements of parts 25 and 95 of this chapter, as applicable.

[46 FR 13980, Feb. 25, 1981, as amended at 48 FR 28219, June 21, 1983; 54 FR 27871, July 3, 1989; 61 FR 64268, Dec. 4, 1996; 63 FR 26961, May 15, 1998; 73 FR 63571, Oct. 24, 2008]

§ 60.22 Filing and distribution of application.

(a) An application for a construction authorization for a high-level radioactive waste repository at a geologic repository operations area, and an application for a license to receive and possess source, special nuclear, or byproduct material at a geologic repository operations area at a site which has been characterized, and any amendments thereto, and an accompanying environmental impact statement and any supplements, shall be signed by the Secretary of Energy or the Secretary's authorized representative and must be filed with the Director.

(b) DOE shall maintain the capability to generate additional copies for distribution in accordance with written instructions from the Director or the Director's designee.

(c) DOE shall, upon notification of the appointment of an Atomic Safety and Licensing Board, update the application, eliminating all superseded information, and supplement the environmental impact statement if necessary, and serve the updated application and environmental impact statement (as it may have been supplemented) as directed by the Board. At that time DOE shall also serve one such copy of the application and environmental impact statement on the Atomic Safety and Licensing Appeal Panel. Any subsequent amendments to the application or supplements to the environmental impact statement shall be served in the same manner.

(d) At the time of filing of an application and any amendments thereto, one copy shall be made available in an appropriate location near the proposed geologic repository operations area (which shall be a public document room, if one has been established) for inspection by the public and updated as amendments to the application are made. The environmental impact statement and any supplements thereto shall be made available in the same manner. An updated copy of the application, and the environmental impact statement and supplements, shall be produced at any public hearing held by the Commission on the application, for use by any party to the proceeding.

(e) The DOE shall certify that the updated copies of the application, and the environmental impact statement as it may have been supplemented, as referred to in paragraphs (c) and (d) of this section, contain the current contents of such documents submitted in accordance with the requirements of this part.

[54 FR 27871, July 3, 1989, as amended at 68 FR 58814, Oct. 10, 2003; 69 FR 2279, Jan. 14, 2004]

§ 60.23 Elimination of repetition.

In its application, environmental report, or Site Characterization Report, the DOE may incorporate by reference information contained in previous applications, statements, or reports filed with the Commission: *Provided,* That such references are clear and specific and that copies of the information so incorporated are available in the public document room located near the site of the proposed geologic repository.

§ 60.24 Updating of application and environmental impact statement.

(a) The application shall be as complete as possible in the light of information that is reasonably available at the time of docketing.

(b) The DOE shall update its application in a timely manner so as to permit the Commission to review, prior to issuance of a license:

(1) Additional geologic, geophysical, geochemical, hydrologic, meteorologic and other data obtained during construction.

(2) Conformance of construction of structures, systems, and components with the design.

(3) Results of research programs carried out to confirm the adequacy of designs.

(4) Other information bearing on the Commission's issuance of a license that was not available at the time a construction authorization was issued.

(c) The DOE shall supplement its environmental impact statement in a timely manner so as to take into account the environmental impacts of any substantial changes in its proposed actions or any significant new circumstances or information relevant to environmental concerns and bearing on the proposed action or its impacts.

[46 FR 13980, Feb. 25, 1981, as amended at 54 FR 27872, July 3, 1989]

CONSTRUCTION AUTHORIZATION

§ 60.31 Construction authorization.

Upon review and consideration of an application and environmental impact statement submitted under this part, the Commission may authorize construction if it determines:

(a) *Safety*. That there is reasonable assurance that the types and amounts of radioactive materials described in the application can be received, possessed, and disposed of in a geologic repository operations area of the design proposed without unreasonable risk to the health and safety of the public. In arriving at this determination, the Commission shall consider whether:

(1) DOE has described the proposed geologic repository including but not limited to: (i) The geologic, geophysical, geochemical and hydrologic characteristics of the site; (ii) the kinds and quantities of radioactive waste to be received, possessed, stored, and disposed of in the geologic repository operations area; (iii) the principal architectural and engineering criteria for the design of the geologic repository operations area; (iv) construction procedures which may affect the capability of the geologic repository to serve its intended function; and (v) features or components incorporated in the design for the protection of the health and safety of the public.

(2) The site and design comply with the performance objectives and criteria contained in Subpart E of this part.

(3) The DOE's quality assurance program complies with the requirements of Subpart G of this part.

(4) The DOE's personnel training program complies with the criteria contained in Subpart H of this part.

(5) The DOE's emergency plan complies with the criteria contained in Subpart I of this part.

(6) The DOE's proposed operating procedures to protect health and to minimize danger to life or property are adequate.

(b) *Common defense and security*. That there is reasonable assurance that the

activities proposed in the application will not be inimical to the common defense and security.

(c) *Environmental.* That, after weighing the environmental, economic, technical and other benefits against environmental costs and considering available alternatives, the action called for is issuance of the construction authorization, with any appropriate conditions to protect environmental values.

[46 FR 13980, Feb. 25, 1981, as amended at 48 FR 28220, June 21, 1983; 54 FR 27872, July 3, 1989; 63 FR 26961, May 15, 1998]

§ 60.32 Conditions of construction authorization.

(a) A construction authorization shall include such conditions as the Commission finds to be necessary to protect the health and safety of the public, the common defense and security, or environmental values.

(b) The Commission will incorporate in the construction authorization provisions requiring DOE to furnish periodic or special reports regarding: (1) Progress of construction, (2) any data about the site obtained during construction which are not within the predicted limits upon which the facility design was based, (3) any deficiencies in design and construction which, if uncorrected, could adversely affect safety at any future time, and (4) results of research and development programs being conducted to resolve safety questions.

(c) The construction authorization will include restrictions on subsequent changes to the features of the geologic repository and the procedures authorized. The restrictions that may be imposed under this paragraph can include measures to prevent adverse effects on the geologic setting as well as measures related to the design and construction of the geologic repository operations area. These restrictions will fall into three categories of descending importance to public health and safety as follows: (1) Those features and procedures which may not be changed without: (i) 60 days prior notice to the Commission (ii) 30 days notice of opportunity for a prior hearing, and (iii) prior Commission approval; (2) those features and procedures which may not be changed without (i) 60 days prior notice to the Commission, and (ii) prior Commission approval; and (3) those features and procedures which may not be changed without 60 days notice to the Commission. Features and procedures falling in paragraph (c)(3) of this section may not be changed without prior Commission approval if the Commission, after having received the required notice, so orders.

(d) A construction authorization shall be subject to the limitation that a license to receive and possess source, special nuclear, or byproduct material at the geologic repository operations area shall not be issued by the Commission until (1) the DOE has updated its application as specified in § 60.24, and (2) the Commission has made the findings stated in § 60.41.

[46 FR 13980, Feb. 25, 1981, as amended at 48 FR 28221, June 21, 1983]

§ 60.33 Amendment of construction authorization.

(a) An application for amendment of a construction authorization shall be filed with the Commission fully describing any changes desired and following as far as applicable the format prescribed in § 60.21.

(b) In determining whether an amendment of a construction authorization will be approved, the Commission will be guided by the considerations which govern the issuance of the initial construction authorization, to the extent applicable.

LICENSE ISSUANCE AND AMENDMENT

§ 60.41 Standards for issuance of a license.

A license to receive and possess source, special nuclear, or byproduct material at a geologic repository operations area may be issued by the Commission upon finding that:

(a) Construction of the geologic repository operations area has been substantially completed in conformity with the application as amended, the provisions of the Atomic Energy Act, and the rules and regulations of the Commission. Construction may be deemed to be substantially complete for the purposes of this paragraph if the construction of (1) surface and interconnecting structures, systems,

and components, and (2) any underground storage space required for initial operation are substantially complete.

(b) The activities to be conducted at the geologic repository operations area will be in conformity with the application as amended, the provisions of the Atomic Energy Act and the Energy Reorganization Act, and the rules and regulations of the Commission.

(c) The issuance of the license will not be inimical to the common defense and security and will not constitute an unreasonable risk to the health and safety of the public.

(d) All applicable requirements of part 51 have been satisfied.

[46 FR 13980, Feb. 25, 1981, as amended at 63 FR 26961, May 15, 1998]

§ 60.42 Conditions of license.

(a) A license issued pursuant to this part shall include such conditions, including license specifications, as the Commission finds to be necessary to protect the health and safety of the public, the common defense and security, and environmental values.

(b) Whether stated therein or not, the following shall be deemed conditions in every license issued:

(1) The license shall be subject to revocation, suspension, modification, or amendment for cause as provided by the Atomic Energy Act and the Commission's regulations.

(2) The DOE shall at any time while the license is in effect, upon written request of the Commission, submit written statements to enable the Commission to determine whether or not the license should be modified, suspended or revoked.

(3) The license shall be subject to the provisions of the Atomic Energy Act now or hereafter in effect and to all rules, regulations, and orders of the Commission. The terms and conditions of the license shall be subject to amendment, revision, or modification, by reason of amendments to or by reason of rules, regulations, and orders issued in accordance with the terms of the Atomic Energy Act.

(c) Each license shall be deemed to contain the provisions set forth in Section 183 b-d, inclusive, of the Atomic Energy Act, whether or not these provisions are expressly set forth in the license.

(d) The licensee (Department of Energy) shall ensure that Safeguards Information is protected against unauthorized disclosure in accordance with the requirements in § 73.21 and the requirements in § 73.22 or § 73.23 of this chapter, as applicable. The licensee (Department of Energy) shall ensure that classified information is protected in accordance with the requirements of parts 25 and 95 of this chapter, as applicable.

[46 FR 13980, Feb. 25, 1981, as amended at 73 FR 63571, Oct. 24, 2008]

§ 60.43 License specification.

(a) A license issued under this part shall include license conditions derived from the analyses and evaluations included in the application, including amendments made before a license is issued, together with such additional conditions as the Commission finds appropriate.

(b) License conditions shall include items in the following categories:

(1) Restrictions as to the physical and chemical form and radioisotopic content of radioactive waste.

(2) Restrictions as to size, shape, and materials and methods of construction of radioactive waste packaging.

(3) Restrictions as to the amount of waste permitted per unit volume of storage space considering the physical characteristics of both the waste and the host rock.

(4) Requirements relating to test, calibration, or inspection to assure that the foregoing restrictions are observed.

(5) Controls to be applied to restricted access and to avoid disturbance to the postclosure controlled area and to areas outside the controlled area where conditions may affect isolation within the controlled area.

(6) Administrative controls, which are the provisions relating to organization and management, procedures, recordkeeping, review and audit, and reporting necessary to assure that activities at the facility are conducted in a

safe manner and in conformity with the other license specifications.

[46 FR 13980, Feb. 25, 1981, as amended at 48 FR 28221, June 21, 1983; 61 FR 64268, Dec. 4, 1996]

§ 60.44 Changes, tests, and experiments.

(a)(1) Following authorization to receive and possess source, special nuclear, or byproduct material at a geologic repository operations area, the DOE may (i) make changes in the geologic repository operations area as described in the application, (ii) make changes in the procedures as described in the application, and (iii) conduct tests or experiments not described in the application, without prior Commission approval, provided the change, test, or experiment involves neither a change in the license conditions incorporated in the license nor an unreviewed safety question.

(2) A proposed change, test, or experiment shall be deemed to involve an unreviewed safety question if (i) the likelihood of occurrence or the consequences of an accident or malfunction of equipment important to safety previously evaluated in the application is increased, (ii) the possibility of an accident or malfunction of a different type than any previously evaluated in the application is created, or (iii) the margin of safety as defined in the basis for any license condition is reduced.

(b) The DOE shall maintain records of changes in the geologic repository operations area and of changes in procedures made pursuant to this section, to the extent that such changes constitute changes in the geologic repository operations area or procedures as described in the application. Records of tests and experiments carried out pursuant to paragraph (a) of this section shall also be maintained. These records shall include a written safety evaluation which provides the basis for the determination that the change, test, or experiment does not involve an unreviewed safety question. The DOE shall prepare annually, or at such shorter intervals as may be specified in the license, a report containing a brief description of such changes, tests, and experiments, including a summary of the safety evaluation of each. The DOE shall furnish the report to the appropriate NRC Regional Office shown in appendix D to part 20 of this chapter, by an appropriate method listed in § 60.4(a), with a copy to the Director of the NRC's Office of Nuclear Material Safety and Safeguards. Any report submitted pursuant to this paragraph shall be made a part of the public record of the licensing proceedings.

[46 FR 13980, Feb. 25, 1981, as amended at 52 FR 31612, Aug. 21, 1987; 68 FR 58814, Oct. 10, 2003]

§ 60.45 Amendment of license.

(a) An application for amendment of a license may be filed with the Commission fully describing the changes desired and following as far as applicable the format prescribed for license applications.

(b) In determining whether an amendment of a license will be approved, the Commission will be guided by the considerations that govern the issuance of the initial license, to the extent applicable.

§ 60.46 Particular activities requiring license amendment.

(a) Unless expressly authorized in the license, an amendment of the license shall be required with respect to any of the following activities:

(1) Any action which would make emplaced high-level radioactive waste irretrievable or which would substantially increase the difficulty of retrieving such emplaced waste.

(2) Dismantling of structures.

(3) Removal or reduction of controls applied to restrict access to or avoid disturbance of the controlled area and to areas outside the postclosure controlled area where conditions may affect isolation within the controlled area.

(4) Destruction or disposal of records required to be maintained under the provisions of this part.

(5) Any substantial change to the design or operating procedures from that specified in the license.

(6) Permanent closure.

(7) Any other activity involving an unreviewed safety question.

(b) An application for such an amendment shall be filed, and shall be reviewed, in accordance with the provisions of § 60.45.

[46 FR 13980, Feb. 25, 1981, as amended at 48 FR 28221, June 21, 1983; 61 FR 64268, Dec. 4, 1996]

US/IAEA SAFEGUARDS AGREEMENT

§ 60.47 Facility information and verification.

(a) In response to a written request by the Commission, each applicant for a construction authorization or license and each recipient of a construction authorization or a license shall submit facility information, as described in § 75.10 of this chapter, on IAEA Design Information Questionnaire forms, and site information on DOC/NRC Form AP–A and associated forms;

(b) As required by the Additional Protocol, applicants and licensees specified in paragraph (a) of this section shall submit location information described in § 75.11 of this chapter on DOC/NRC Form AP–1 and associated forms;

(c) Shall permit verification thereof by the International Atomic Energy Agency (IAEA) and take other action as necessary to implement the US/IAEA Safeguards Agreement, as described in part 75 of this chapter.

[73 FR 78605, Dec. 23, 2008, as amended at 85 FR 65663, Oct. 16, 2020]

PERMANENT CLOSURE

§ 60.51 License amendment for permanent closure.

(a) DOE shall submit an application to amend the license prior to permanent closure. The submission shall consist of an update of the license application submitted under §§ 60.21 and 60.22, including:

(1) A description of the program for post-permanent closure monitoring of the geologic repository.

(2) A detailed description of the measures to be employed—such as land use controls, construction of monuments, and preservation of records—to regulate or prevent activities that could impair the long-term isolation of emplaced waste within the geologic repository and to assure that relevant information will be preserved for the use of future generations. As a minimum, such measures shall include:

(i) Identification of the postclosure controlled area and geologic repository operations area by monuments that have been designed, fabricated, and emplaced to be as permanent as is practicable; and

(ii) Placement of records in the archives and land record systems of local State, and Federal government agencies, and archives elsewhere in the world, that would be likely to be consulted by potential human intruders—such records to identify the location of the geologic repository operations area, including the underground facility, boreholes and shafts, and the boundaries of the postclosure controlled area, and the nature and hazard of the waste.

(3) Geologic, geophysical, geochemical, hydrologic, and other site data that are obtained during the operational period pertinent to the long-term isolation of emplaced radioactive wastes.

(4) The results of tests, experiments, and any other analyses relating to backfill of excavated areas, shaft sealing, waste interaction with the host rock, and any other tests, experiments, or analyses pertinent to the long-term isolation of emplaced wastes within the geologic repository.

(5) Any substantial revision of plans for permanent closure.

(6) Other information bearing upon permanent closure that was not available at the time a license was issued.

(b) If necessary, so as to take into account the environmental impact of any substantial changes in the permanent closure activities proposed to be carried out or any significant new information regarding the environmental impacts of such closure, DOE shall also supplement its environmental impact statement and submit such statement, as supplemented, with the application for license amendment.

[46 FR 13980, Feb. 25, 1981, as amended at 48 FR 28221, June 21, 1983; 54 FR 27872, July 3, 1989; 61 FR 64268, Dec. 4, 1996]

§ 60.52 Termination of license.

(a) Following permanent closure and the decontamination or dismantlement

of surface facilities, DOE may apply for an amendment to terminate the license.

(b) Such application shall be filed, and will be reviewed, in accordance with the provisions of § 60.45 and this section.

(c) A license shall be terminated only when the Commission finds with respect to the geologic repository:

(1) That the final disposition of radioactive wastes has been made in conformance with the DOE's plan, as amended and approved as part of the license.

(2) That the final state of the geologic repository operations area conforms to DOE's plans for permanent closure and DOE's plans for the decontamination or dismantlement of surface facilities, as amended and approved as part of the license.

(3) That the termination of the license is authorized by law, including sections 57, 62, and 81 of the Atomic Energy Act, as amended.

[46 FR 13980, Feb. 25, 1981, as amended at 48 FR 28222, June 21, 1983]

Subpart C—Participation by State Governments and Affected Indian Tribes

SOURCE: 51 FR 27164, July 30, 1986, unless otherwise noted.

§ 60.61 Provision of information.

(a) The Director shall provide to the Governor and legislature of any State in which a geologic repository operations area is or may be located, and to the governing body of any affected Indian Tribe, timely and complete information regarding determinations or plans made by the Commission with respect to the site characterization, siting, development, design, licensing, construction, operation, regulation, permanent closure, or decontamination and dismantlement of surface facilities, of such geologic repository operations area.

(b) For purposes of this section, a geologic repository operations area shall be considered to be one which ''may be located'' in a State if the location thereof in such State has been described in a site characterization plan submitted to the Commission under this part.

(c) Notwithstanding paragraph (a) of this section, the Director is not required to distribute any document to any entity if, with respect to such document, that entity or its counsel is included on a service list prepared pursuant to part 2 of this chapter.

(d) Copies of all communications by the Director under this section are available at the NRC Web site, *http://www.nrc.gov*, and/or at the NRC Public Document Room, and copies are furnished to DOE.

[51 FR 27164, July 30, 1986, as amended at 64 FR 48954, Sept. 9, 1999]

§ 60.62 Site review.

(a) Whenever an area has been approved by the President for site characterization, and upon request of a State or an affected Indian Tribe, the Director shall make NRC staff available to consult with representatives of such States and Tribes.

(b) Requests for consultation shall be made in writing to the Director.

(c) Consultation under this section may include:

(1) Keeping the parties informed of the Director's views on the progress of site characterization.

(2) Review of applicable NRC regulations, licensing procedures, schedules, and opportunities for State and Tribe participation in the Commission's regulatory activities.

(3) Cooperation in development of proposals for State and Tribe participation in license reviews.

§ 60.63 Participation in license reviews.

(a) State, local governmental bodies, and affected, Federally-recognized Indian Tribes may participate in license reviews as provided in subpart J of part 2 of this chapter. A State in which a repository for high-level radioactive waste is proposed to be located and any affected, Federally-recognized Indian Tribe shall have an unquestionable legal right to participate as a party in such proceedings.

(b) In addition, whenever an area has been approved by the President for site characterization, a State or an affected

Indian Tribe may submit to the Director a proposal to facilitate its participation in the review of a site characterization plan and/or license application. The proposal may be submitted at any time and must contain a description and schedule of how the State or affected Indian Tribe wishes to participate in the review, or what services or activities the State or affected Indian Tribe wishes NRC to carry out, and how the services or activities proposed to be carried out by NRC would contribute to such participation. The proposal may include educational or information services (seminars, public meetings) or other actions on the part of NRC, such as employment or exchange of State personnel under the Intergovernmental Personnel Act.

(c) The Director shall arrange for a meeting between the representatives of the State or affected Indian Tribe and the NRC staff to discuss any proposal submitted under paragraph (b) of this section, with a view to identifying any modifications that may contribute to the effective participation by such State or Tribe.

(d) Subject to the availability of funds, the Director shall approve all or any part of a proposal, as it may be modified through the meeting described above, if it is determined that:

(1) The proposed activities are suitable in light of the type and magnitude of impacts which the State or affected Indian Tribe may bear;

(2) The proposed activities:

(i) Will enhance communications between NRC and the State or affected Indian Tribe;

(ii) Will make a productive and timely contribution to the review; and

(iii) Are authorized by law.

(e) The Director will advise the State or affected Indian Tribe whether its proposal has been accepted or denied, and if all or any part of proposal is denied, the Director shall state the reason for the denial.

(f) Proposals submitted under this section, and responses thereto, shall be made available at the NRC Web site, *http://www.nrc.gov*, and/or at the NRC Public Document Room.

[51 FR 27164, July 30, 1986, as amended at 64 FR 48954, Sept. 9, 1999; 69 FR 2279, Jan. 14, 2004]

§ 60.64 Notice to States.

If the Governor and legislature of a State have jointly designated on their behalf a single person or entity to receive notice and information from the Commission under this part, the Commission will provide such notice and information to the jointly designated person or entity instead of the Governor and legislature separately.

§ 60.65 Representation.

Any person who acts under this subpart as a representative for a State (or for the Governor or legislature thereof) or for an affected Indian Tribe shall include in the request or other submission, or at the request of the Commission, a statement of the basis of his or her authority to act in such representative capacity.

Subpart D—Records, Reports, Tests, and Inspections

§ 60.71 Records and reports.

(a) DOE shall maintain such records and make such reports in connection with the licensed activity as may be required by the conditions of the license or by rules, regulations, and orders of the Commission as authorized by the Atomic Energy Act and the Energy Reorganization Act.

(b) Records of the receipt, handling, and disposition of radioactive waste at a geologic repository operations area shall contain sufficient information to provide a complete history of the movement of the waste from the shipper through all phases of storage and disposal. DOE shall retain these records in a manner that ensures their useability for future generations in accordance with § 60.51(a)(2).

[48 FR 28222, June 21, 1983, as amended at 53 FR 19251, May 27, 1988]

§ 60.72 Construction records.

(a) DOE shall maintain records of construction of the geologic repository operations area in a manner that ensures their useability for future generations in accordance with § 60.51(a)(2).

(b) The records required under paragraph (a) shall include at least the following:

(1) Surveys of the underground facility excavations, shafts, and boreholes referenced to readily identifiable surface features or monuments;

(2) A description of the materials encountered;

(3) Geologic maps and geologic cross sections;

(4) Locations and amount of seepage;

(5) Details of equipment, methods, progress, and sequence of work;

(6) Construction problems;

(7) Anomalous conditions encountered;

(8) Instrument locations, readings, and analysis;

(9) Location and description of structural support systems;

(10) Location and description of dewatering systems; and

(11) Details, methods of emplacement, and location of seals used.

[48 FR 28222, June 21, 1983, as amended at 53 FR 19251, May 27, 1988]

§ 60.73 Reports of deficiencies.

DOE shall promptly notify the Commission of each deficiency found in the characteristics of the site, and design and construction of the geologic repository operations area which, were it to remain uncorrected, could: (a) Be a substantial safety hazard, (b) represent a significant deviation from the design criteria and design bases stated in the application, or (c) represent a deviation from the conditions stated in the terms of a construction authorization or the license, including license specifications. The notification shall be in the form of a written report, copies of which shall be sent to the Director and to the appropriate Nuclear Regulatory Commission Regional Office listed in appendix D of part 20 of this chapter.

[48 FR 28222, June 21, 1983]

§ 60.74 Tests.

(a) DOE shall perform, or permit the Commission to perform, such tests as the Commission deems appropriate or necessary for the administration of the regulations in this part. These may include tests of:

(1) Radioactive waste,

(2) The geologic repository including its structures, systems, and components,

(3) Radiation detection and monitoring instruments, and

(4) Other equipment and devices used in connection with the receipt, handling, or storage of radioactive waste.

(b) The tests required under this section shall include a performance confirmation program carried out in accordance with subpart F of this part.

[48 FR 28222, June 21, 1983]

§ 60.75 Inspections.

(a) DOE shall allow the Commission to inspect the premises of the geologic repository operations area and adjacent areas to which DOE has rights of access.

(b) DOE shall make available to the Commission for inspection, upon reasonable notice, records kept by DOE pertaining to activities under this part.

(c)(1) DOE shall upon requests by the Director, Office of Nuclear Material Safety and Safeguards, provide rent-free office space for the exclusive use of the Commission inspection personnel. Heat, air-conditioning, light, electrical outlets and janitorial services shall be furnished by DOE. The office shall be convenient to and have full access to the facility and shall provide the inspector both visual and acoustic privacy.

(2) The space provided shall be adequate to accommodate a full-time inspector, a part-time secretary and transient NRC personnel and will be generally commensurate with other office facilities at the geologic repository operations area. A space of 250 square feet either within the geologic repository operations area's office complex or in an office trailer or other onsite space at the geologic repository operations area is suggested as a guide. For locations at which activities are carried out under licenses issued under other parts of this chapter, additional space may be requested to accommodate additional full-time inspectors. The Office space that is provided shall be subject to the approval of the Director, Office of Nuclear Material Safety and Safeguards. All furniture, supplies and communication equipment will be furnished by the Commission.

(3) DOE shall afford any NRC resident inspector assigned to that location, or other NRC inspectors identified by the Regional Administrator as likely to inspect the facility, immediate unfettered access, equivalent to access provided regular employees, following proper identification and compliance with applicable access control measures for security, radiological protection and personal safety.

[48 FR 28222, June 21, 1983, as amended at 52 FR 31612, Aug. 21, 1987; 76 FR 72086, Nov. 22, 2011]

§ 60.78 Material control and accounting records and reports.

DOE shall implement a program of material control and accounting (and accidental criticality reporting) that is the same as that specified in §§ 72.72, 72.74, 72.76, and 72.78 of this chapter.

[63 FR 26961, May 15, 1998]

Subpart E—Technical Criteria

SOURCE: 48 FR 28222, June 21, 1983, unless otherwise noted.

§ 60.101 Purpose and nature of findings.

(a)(1) Subpart B of this part prescribes the standards for issuance of a license to receive and possess source, special nuclear, or byproduct material at a geologic repository operations area. In particular, § 60.41(c) requires a finding that the issuance of a license will not constitute an unreasonable risk to the health and safety of the public. The purpose of this subpart is to set out performance objectives and site and design criteria which, if satisfied, will support such a finding of no unreasonable risk.

(2) While these performance objectives and criteria are generally stated in unqualified terms, it is not expected that complete assurance that they will be met can be presented. A reasonable assurance, on the basis of the record before the Commission, that the objectives and criteria will be met is the general standard that is required. For § 60.112, and other portions of this subpart that impose objectives and criteria for repository performance over long times into the future, there will inevitably be greater uncertainties. Proof of the future performance of engineered barrier systems and the geologic setting over time periods of many hundreds or many thousands of years is not to be had in the ordinary sense of the word. For such long-term objectives and criteria, what is required is reasonable assurance, making allowance for the time period, hazards, and uncertainties involved, that the outcome will be in conformance with those objectives and criteria. Demonstration of compliance with such objectives and criteria will involve the use of data from accelerated tests and predictive models that are supported by such measures as field and laboratory tests, monitoring data and natural analog studies.

(b) Subpart B of this part also lists findings that must be made in support of an authorization to construct a geologic repository operations area. In particular, § 60.31(a) requires a finding that there is reasonable assurance that the types and amounts of radioactive materials described in the application can be received, possessed, and disposed of in a geologic repository operations area of the design proposed without unreasonable risk to the health and safety of the public. As stated in that paragraph, in arriving at this determination, the Commission will consider whether the site and design comply with the criteria contained in this subpart. Once again, while the criteria may be written in unqualified terms, the demonstration of compliance may take uncertainties and gaps in knowledge into account, provided that the Commission can make the specified finding of reasonable assurance as specified in paragraph (a) of this section.

§ 60.102 Concepts.

This section provides a functional overview of subpart E. In the event of any inconsistency with definitions found in § 60.2, those definitions shall prevail.

(a) *The HLW facility*. NRC exercises licensing and related regulatory authority over those facilities described in section 202 (3) and (4) of the Energy Reorganization Act of 1974. Any of these facilities is designated a *HLW facility*.

(b) *The geologic repository operations area.* (1) This part deals with the exercise of authority with respect to a particular class of HLW facility—namely a *geologic repository operations area.*

(2) *A geologic repository operations area* consists of those surface and subsurface areas that are part of a geologic repository where radioactive waste handling activities are conducted. The underground structure, including openings and backfill materials, but excluding shafts, boreholes, and their seals, is designated the *underground facility.*

(3) The exercise of Commission authority requires that the geologic repository operations area be used for *storage* (which includes *disposal*) of *high-level radioactive wastes (HLW).*

(4) HLW includes irradiated reactor fuel as well as reprocessing wastes. However, if DOE proposes to use the geologic repository operations area for storage of *radioactive waste* other than HLW, the storage of this radioactive waste is subject to the requirements of this part.

(c) *Areas related to isolation.* Although the activities subject to regulation under this part are those to be carried out at the geologic repository operations area, the licensing process also considers characteristics of adjacent areas that are defined in other ways. There is to be an area surrounding the underground facility referred to above, which is designated the *postclosure controlled area,* within which DOE is to exercise specified controls to prevent adverse human actions following permanent closure. The location of the controlled area is the *site.* The *accessible environment* is the atmosphere, land surface, surface water, oceans, and the portion of the lithosphere that is outside the controlled area. There is an area, designated the *geologic setting,* which includes the geologic, hydrologic, and geochemical systems of the region in which a geologic repository operations area is or may be located. The geologic repository operations area plus the portion of the geologic setting that provides isolation of the radioactive waste make up the *geologic repository.*

(d) *Stages in the licensing process.* There are several stages in the licensing process. The *site characterization* stage, though begun before submission of a license application, may result in consequences requiring evaluation in the license review. The *construction stage* would follow, after issuance of a construction authorization. A *period of operations* follows the issuance of a license by the Commission. The period of operations includes the time during which *emplacement* of wastes occurs; any subsequent period before permanent closure during which the emplaced wastes are *retrievable;* and *permanent closure,* which includes sealing of shafts. Permanent closure represents the end of active human intervention with respect to the engineered barrier system.

(e) *Isolation of waste.* (1) During the first several hundred years following permanent closure of a geologic repository, when radiation and thermal levels are high and the uncertainties in assessing repository performance are large, special emphasis is placed upon the ability to contain the wastes by waste packages within an *engineered barrier system.* This is known as the *containment period.* The *engineered barrier system* includes the waste packages and the underground facility. A *waste package* is composed of the waste form and any containers, shielding, packing, and absorbent materials immediately surrounding an individual waste container. The *underground facility* means the underground structure, including openings and backfill materials, but excluding, shafts, boreholes, and their seals.

(2) Following the containment period special emphasis is placed upon the ability to achieve isolation of the wastes by virtue of the characteristics of the geologic repository. The engineered barrier system works to control the release of radioactive material to the geologic setting and the geologic setting works to control the release of radioactive material to the accessible environment. *Isolation* means inhibiting the transport of radioactive material so that amounts and concentrations of the materials entering the accessible environment will be kept within prescribed limits.

[48 FR 28222, June 21, 1983, as amended at 61 FR 64268, Dec. 4, 1996]

PERFORMANCE OBJECTIVES

§ 60.111 Performance of the geologic repository operations area through permanent closure.

(a) *Protection against radiation exposures and releases of radioactive material.* The geologic repository operations area shall be designed so that until permanent closure has been completed, radiation exposures and radiation levels, and releases of radioactive materials to unrestricted areas, will be maintained within the limits specified in part 20 of this chapter and such generally applicable environmental standards for radioactivity as may have been established by the Environmental Protection Agency.

(b) *Retrievability of waste.* (1) The geologic repository operations area shall be designed to preserve the option of waste retrieval throughout the period during which wastes are being emplaced and, thereafter, until the completion of a preformance confirmation program and Commission review of the information obtained from such a program. To satisfy this objective, the geologic repository operations area shall be designed so that any or all of the emplaced waste could be retrieved on a reasonable schedule starting at any time up to 50 years after waste emplacement operations are initiated, unless a different time period is approved or specified by the Commission. This different time period may be established on a case-by-case basis consistent with the emplacement schedule and the planned performance confirmation program.

(2) This requirement shall not preclude decisions by the Commission to allow backfilling part or all of, or permanent closure of, the geologic repository operations area prior to the end of the period of design for retrievability.

(3) For purposes of this paragraph, a reasonable schedule for retrieval is one that would permit retrieval in about the same time as that devoted to construction of the geologic repository operations area and the emplacement of wastes.

[48 FR 28222, June 21, 1983, as amended at 61 FR 64268, Dec. 4, 1996; 62 FR 59276, Nov. 3, 1997]

§ 60.112 Overall system performance objective for the geologic repository after permanent closure.

The geologic setting shall be selected and the engineered barrier system and the shafts, boreholes and their seals shall be designed to assure that releases of radioactive materials to the accessible environment following permanent closure conform to such generally applicable environmental standards for radioactivity as may have been established by the Environmental Protection Agency with respect to both anticipated processes and events and unanticipated processes and events.

§ 60.113 Performance of particular barriers after permanent closure.

(a) *General provisions*—(1) *Engineered barrier system.* (i) The engineered barrier system shall be designed so that assuming anticipated processes and events: (A) Containment of HLW will be substantially complete during the period when radiation and thermal conditions in the engineered barrier system are dominated by fission product decay; and (B) any release of radionuclides from the engineered barrier system shall be a gradual process which results in small fractional releases to the geologic setting over long times. For disposal in the saturated zone, both the partial and complete filling with groundwater of available void spaces in the underground facility shall be appropriately considered and analysed among the anticipated processes and events in designing the engineered barrier system.

(ii) In satisfying the preceding requirement, the engineered barrier system shall be designed, assuming anticipated processes and events, so that:

(A) Containment of HLW within the waste packages will be substantially complete for a period to be determined by the Commission taking into account the factors specified in § 60.113(b) provided, that such period shall be not less than 300 years nor more than 1,000 years after permanent closure of the geologic repository; and

(B) The release rate of any radionuclide from the engineered barrier system following the containment period shall not exceed one part in 100,000

per year of the inventory of that radionuclide calculated to be present at 1,000 years following permanent closure, or such other fraction of the inventory as may be approved or specified by the Commission; provided, that this requirement does not apply to any radionuclide which is released at a rate less than 0.1% of the calculated total release rate limit. The calculated total release rate limit shall be taken to be one part in 100,000 per year of the inventory of radioactive waste, originally emplaced in the underground facility, that remains after 1,000 years of radioactive decay.

(2) *Geologic setting.* The geologic repository shall be located so that prewaste-emplacement groundwater travel time along the fastest path of likely radionuclide travel from the disturbed zone to the accessible environment shall be at least 1,000 years or such other travel time as may be approved or specified by the Commission.

(b) On a case-by-case basis, the Commission may approve or specify some other radionuclide release rate, designed containment period or prewaste-emplacement groundwater travel time, provided that the overall system performance objective, as it relates to anticipated processes and events, is satisfied. Among the factors that the Commission may take into account are:

(1) Any generally applicable environmental standard for radioactivity established by the Environmental Protection Agency;

(2) The age and nature of the waste, and the design of the underground facility, particularly as these factors bear upon the time during which the thermal pulse is dominated by the decay heat from the fission products;

(3) The geochemical characteristics of the host rock, surrounding strata and groundwater; and

(4) Particular sources of uncertainty in predicting the performance of the geologic repository.

(c) Additional requirements may be found to be necessary to satisfy the overall system performance objective as it relates to unanticipated processes and events.

LAND OWNERSHIP AND CONTROL

§ 60.121 Requirements for ownership and control of interests in land.

(a) *Ownership of land.* (1) Both the geologic repository operations area and the postclosure controlled area shall be located in and on lands that are either acquired lands under the jurisdiction and control of DOE, or lands permanently withdrawn and reserved for its use.

(2) These lands shall be held free and clear of all encumbrances, if significant, such as: (i) Rights arising under the general mining laws; (ii) easements for right-of-way; and (iii) all other rights arising under lease, rights of entry, deed, patent, mortgage, appropriation, prescription, or otherwise.

(b) *Additional controls.* Appropriate controls shall be established outside of the postclosure controlled area. DOE shall exercise any jurisdiction and control over surface and subsurface estates necessary to prevent adverse human actions that could significantly reduce the geologic repository's ability to achieve isolation. The rights of DOE may take the form of appropriate possessory interests, servitudes, or withdrawals from location or patent under the general mining laws.

(c) *Water rights.* (1) DOE shall also have obtained such water rights as may be needed to accomplish the purpose of the geologic repository operations area.

(2) Water rights are included in the additional controls to be established under paragraph (b) of this section.

[48 FR 28222, June 21, 1983, as amended at 61 FR 64268, Dec. 4, 1996]

SITING CRITERIA

§ 60.122 Siting criteria.

(a)(1) A geologic setting shall exhibit an appropriate combination of the conditions specified in paragraph (b) of this section so that, together with the engineered barriers system, the favorable conditions present are sufficient to provide reasonable assurance that the performance objectives relating to isolation of the waste will be met.

(2) If any of the potentially adverse conditions specified in paragraph (c) of

this section is present, it may compromise the ability of the geologic repository to meet the performance objectives relating to isolation of the waste. In order to show that a potentially adverse condition does not so compromise the performance of the geologic repository the following must be demonstrated:

(i) The potentially adverse human activity or natural condition has been adequately investigated, including the extent to which the condition may be present and still be undetected taking into account the degree of resolution achieved by the investigations; and

(ii) The effect of the potentially adverse human activity or natural condition on the site has been adequately evaluated using analyses which are sensitive to the potentially adverse human activity or natural condition and assumptions which are not likely to underestimate its effect; and

(iii)(A) The potentially adverse human activity or natural condition is shown by analysis pursuant to paragraph (a)(2)(ii) of this section not to affect significantly the ability of the geologic repository to meet the performance objectives relating to isolation of the waste, or

(B) The effect of the potentially adverse human activity or natural condition is compensated by the presence of a combination of the favorable characteristics so that the performance objectives relating to isolation of the waste are met, or

(C) The potentially adverse human activity or natural condition can be remedied.

(b) *Favorable conditions.* (1) The nature and rates of tectonic, hydrogeologic, geochemical, and geomorphic processes (or any of such processes) operating within the geologic setting during the Quaternary Period, when projected, would not affect or would favorably affect the ability of the geologic repository to isolate the waste.

(2) For disposal in the saturated zone, hydrogeologic conditions that provide:

(i) A host rock with low horizontal and vertical permeability;

(ii) Downward or dominantly horizontal hydraulic gradient in the host rock and immediately surrounding hydrogeologic units; and

(iii) Low vertical permeability and low hydraulic gradient between the host rock and the surrounding hydrogeologic units.

(3) Geochemical conditions that:

(i) Promote precipitation or sorption of radionuclides;

(ii) Inhibit the formation of particulates, colloids, and inorganic and organic complexes that increase the mobility of radionuclides; or

(iii) Inhibit the transport of radionuclides by particulates, colloids, and complexes.

(4) Mineral assemblages that, when subjected to anticipated thermal loading, will remain unaltered or alter to mineral assemblages having equal or increased capacity to inhibit radionuclide migration.

(5) Conditions that permit the emplacement of waste at a minimum depth of 300 meters from the ground surface. (The ground surface shall be deemed to be the elevation of the lowest point on the surface above the disturbed zone.)

(6) A low population density within the geologic setting and a postclosure controlled area that is remote from population centers.

(7) Pre-waste-emplacement groundwater travel time along the fastest path of likely radionuclide travel from the disturbed zone to the accessible environment that substantially exceeds 1,000 years.

(8) For disposal in the unsaturated zone, hydrogeologic conditions that provide—

(i) Low moisture flux in the host rock and in the overlying and underlying hydrogeologic units;

(ii) A water table sufficiently below the underground facility such that fully saturated voids contiguous with the water table do not encounter the underground facility;

(iii) A laterally extensive low-permeability hydrogeologic unit above the host rock that would inhibit the downward movement of water or divert downward moving water to a location beyond the limits of the underground facility;

(iv) A host rock that provides for free drainage; or

(v) A climatic regime in which the average annual historic precipitation is a small percentage of the average annual potential evapotranspiration.

(c) *Potentially adverse conditions.* The following conditions are potentially adverse conditions if they are characteristic of the postclosure controlled area or may affect isolation within the controlled area.

(1) Potential for flooding of the underground facility, whether resulting from the occupancy and modification of floodplains or from the failure of existing or planned man-made surface water impoundments.

(2) Potential for foreseeable human activity to adversely affect the groundwater flow system, such as groundwater withdrawal, extensive irrigation, subsurface injection of fluids, underground pumped storage, military activity or construction of large scale surface water impoundments.

(3) Potential for natural phenomena such as landslides, subsidence, or volcanic activity of such a magnitude that large-scale surface water impoundments could be created that could change the regional groundwater flow system and thereby adversely affect the performance of the geologic repository.

(4) Structural deformation, such as uplift, subsidence, folding, or faulting that may adversely affect the regional groundwater flow system.

(5) Potential for changes in hydrologic conditions that would affect the migration of radionuclides to the accessible environment, such as changes in hydraulic gradient, average interstitial velocity, storage coefficient, hydraulic conductivity, natural recharge, potentiometric levels, and discharge points.

(6) Potential for changes in hydrologic conditions resulting from reasonably foreseeable climatic changes.

(7) Groundwater conditions in the host rock, including chemical composition, high ionic strength or ranges of Eh-pH, that could increase the solubility or chemical reactivity of the engineered barrier system.

(8) Geochemical processes that would reduce sorption of radionuclides, result in degradation of the rock strength, or adversely affect the performance of the engineered barrier system.

(9) Groundwater conditions in the host rock that are not reducing.

(10) Evidence of dissolutioning such as breccia pipes, dissolution cavities, or brine pockets.

(11) Structural deformation such as uplift, subsidence, folding, and faulting during the Quaternary Period.

(12) Earthquakes which have occurred historically that if they were to be repeated could affect the site significantly.

(13) Indications, based on correlations of earthquakes with tectonic processes and features, that either the frequency of occurrence or magnitude of earthquakes may increase.

(14) More frequent occurrence of earthquakes or earthquakes of higher magnitude than is typical of the area in which the geologic setting is located.

(15) Evidence of igneous activity since the start of the Quaternary Period.

(16) Evidence of extreme erosion during the Quaternary Period.

(17) The presence of naturally occurring materials, whether identified or undiscovered, within the site, in such form that:

(i) Economic extraction is currently feasible or potentially feasible during the foreseeable future; or

(ii) Such materials have greater gross value or net value than the average for other areas of similar size that are representative of and located within the geologic setting.

(18) Evidence of subsurface mining for resources within the site.

(19) Evidence of drilling for any purpose within the site.

(20) Rock or groundwater conditions that would require complex engineering measures in the design and construction of the underground facility or in the sealing of boreholes and shafts.

(21) Geomechanical properties that do not permit design of underground opening that will remain stable through permanent closure.

(22) Potential for the water table to rise sufficiently so as to cause saturation of an underground facility located in the unsaturated zone.

(23) Potential for existing or future perched water bodies that may saturate portions of the underground facility or provide a faster flow path from an underground facility located in the unsaturated zone to the accessible environment.

(24) Potential for the movement of radionuclides in a gaseous state through air-filled pore spaces of an unsaturated geologic medium to the accessible environment.

[48 FR 28222, June 21, 1983, as amended at 50 FR 29647, July 22, 1985; 61 FR 64269, Dec. 4, 1996]

DESIGN CRITERIA FOR THE GEOLOGIC REPOSITORY OPERATIONS AREA

§ 60.130 General considerations.

(a) Pursuant to the provisions of § 60.21(c)(2)(i), an application for construction authorization for a high-level radioactive waste repository at a geologic repository operations area, and an application for a license to receive, possess, store, and dispose of high-level radioactive waste in the geologic repository operations area, must include the principal design criteria for a proposed facility. The principal design criteria establish the necessary design, fabrication, construction, testing, maintenance, and performance requirements for structures, systems, and components important to safety and/or important to waste isolation. Sections 60.131 through 60.134 specify minimum requirements for the principal design criteria for the geologic repository operations area.

(b) These design criteria are not intended to be exhaustive. However, omissions in §§ 60.131 through 60.134 do not relieve DOE from any obligation to provide such features in a specific facility needed to achieve the performance objectives.

[69 FR 2280, Jan. 14, 2004]

§ 60.131 General design criteria for the geologic repository operations area.

(a) *Radiological protection*. The geologic repository operations area shall be designed to maintain radiation doses, levels, and concentrations of radioactive material in air in restricted areas within the limits specified in part 20 of this chapter. Design shall include:

(1) Means to limit concentrations of radioactive material in air;

(2) Means to limit the time required to perform work in the vicinity of radioactive materials, including, as appropriate, designing equipment for ease of repair and replacement and providing adequate space for ease of operation;

(3) Suitable shielding;

(4) Means to monitor and control the dispersal of radioactive contamination;

(5) Means to control access to high radiation areas or airborne radioactivity areas; and

(6) A radiation alarm system to warn of significant increases in radiation levels, concentrations of radioactive material in air, and of increased radioactivity released in effluents. The alarm system shall be designed with provisions for calibration and for testing its operability.

(b) *Protection against design basis events*. The structures, systems, and components important to safety shall be designed so that they will perform their necessary safety functions, assuming occurrence of design basis events.

(c) *Protection against dynamic effects of equipment failure and similar events*. The structures, systems, and components important to safety shall be designed to withstand dynamic effects such as missile impacts, that could result from equipment failure, and similar events and conditions that could lead to loss of their safety functions.

(d) *Protection against fires and explosions*. (1) The structures, systems, and components important to safety shall be designed to perform their safety functions during and after credible fires or explosions in the geologic repository operations area.

(2) To the extent practicable, the geologic repository operations area shall be designed to incorporate the use of noncombustible and heat resistant materials.

(3) The geologic repository operations area shall be designed to include explosion and fire detection alarm systems and appropriate suppression systems with sufficient capacity and capability to reduce the adverse effects of

fires and explosions on structures, systems, and components important to safety.

(4) The geologic repository operations area shall be designed to include means to protect systems, structures, and components important to safety against the adverse effects of either the operation or failure of the fire suppression systems.

(e) *Emergency capability.* (1) The structures, systems, and components important to safety shall be designed to maintain control of radioactive waste and radioactive effluents, and permit prompt termination of operations and evacuation of personnel during an emergency.

(2) The geologic repository operations area shall be designed to include onsite facilities and services that ensure a safe and timely response to emergency conditions and that facilitate the use of available offsite services (such as fire, police, medical, and ambulance service) that may aid in recovery from emergencies.

(f) *Utility services.* (1) Each utility service system that is important to safety shall be designed so that essential safety functions can be performed, assuming occurrence of the design basis events.

(2) The utility services important to safety shall include redundant systems to the extent necessary to maintain, with adequate capacity, the ability to perform their safety functions.

(3) Provisions shall be made so that, if there is a loss of the primary electric power source or circuit, reliable and timely emergency power can be provided to instruments, utility service systems, and operating systems, including alarm systems, important to safety.

(g) *Inspection, testing, and maintenance.* The structures, systems, and components important to safety shall be designed to permit periodic inspection, testing, and maintenance, as necessary, to ensure their continued functioning and readiness.

(h) *Criticality control.* All systems for processing, transporting, handling, storage, retrieval, emplacement, and isolation of radioactive waste shall be designed to ensure that nuclear criticality is not possible unless at least two unlikely, independent, and concurrent or sequential changes have occurred in the conditions essential to nuclear criticality safety. Each system must be designed for criticality safety assuming occurrence of design basis events. The calculated effective multiplication factor (k_{eff}) must be sufficiently below unity to show at least a 5 percent margin, after allowance for the bias in the method of calculation and the uncertainty in the experiments used to validate the method of calculation.

(i) *Instrumentation and control systems.* The design shall include provisions for instrumentation and control systems to monitor and control the behavior of systems important to safety, assuming occurrence of design basis events.

(j) *Compliance with mining regulations.* To the extent that DOE is not subject to the Federal Mine Safety and Health Act of 1977, as to the construction and operation of the geologic repository operations area, the design of the geologic repository operations area shall nevertheless include provisions for worker protection necessary to provide reasonable assurance that all structures, systems, and components important to safety can perform their intended functions. Any deviation from relevant design requirements in 30 CFR, chapter I, subchapters D, E, and N will give rise to a rebuttable presumption that this requirement has not been met.

(k) *Shaft conveyances used in radioactive waste handling.* (1) Hoists important to safety shall be designed to preclude cage free fall.

(2) Hoists important to safety shall be designed with a reliable cage location system.

(3) Loading and unloading systems for hoists important to safety shall be designed with a reliable system of interlocks that will fail safely upon malfunction.

(4) Hoists important to safety shall be designed to include two independent indicators to indicate when waste packages are in place and ready for transfer.

[48 FR 28222, June 21, 1983, as amended at 61 FR 64269, Dec. 4, 1996]

§ 60.132 Additional design criteria for surface facilities in the geologic repository operations area.

(a) *Facilities for receipt and retrieval of waste.* Surface facilities in the geologic repository operations area shall be designed to allow safe handling and storage of wastes at the geologic repository operations area, whether these wastes are on the surface before emplacement or as a result of retrieval from the underground facility.

(b) *Surface facility ventilation.* Surface facility ventilation systems supporting waste transfer, inspection, decontamination, processing, or packaging shall be designed to provide protection against radiation exposures and offsite releases as provided in § 60.111(a).

(c) *Radiation control and monitoring*—(1) *Effluent control.* The surface facilities shall be designed to control the release of radioactive materials in effluents during Category 1 design basis events so as to meet the performance objectives of § 60.111(a).

(2) *Effluent monitoring.* The effluent monitoring systems shall be designed to measure the amount and concentration of radionuclides in any effluent with sufficient precision to determine whether releases conform to the design requirement for effluent control. The monitoring systems shall be designed to include alarms that can be periodically tested.

(d) *Waste treatment.* Radioactive waste treatment facilities shall be designed to process any radioactive wastes generated at the geologic repository operations area into a form suitable to permit safe disposal at the geologic repository operations area or to permit safe transportation and conversion to a form suitable for disposal at an alternative site in accordance with any regulations that are applicable.

(e) *Consideration of decommissioning.* The surface facility shall be designed to facilitate decontamination or dismantlement to the same extent as would be required, under other parts of this chapter, with respect to equivalent activities licensed thereunder.

[48 FR 28222, June 21, 1983, as amended at 61 FR 64270, Dec. 4, 1996]

§ 60.133 Additional design criteria for the underground facility.

(a) *General criteria for the underground facility.* (1) The orientation, geometry, layout, and depth of the underground facility, and the design of any engineered barriers that are part of the underground facility shall contribute to the containment and isolation of radionuclides.

(2) The underground facility shall be designed so that the effects of credible disruptive events during the period of operations, such as flooding, fires and explosions, will not spread through the facility.

(b) *Flexibility of design.* The underground facility shall be designed with sufficient flexibility to allow adjustments where necessary to accommodate specific site conditions identified through in situ monitoring, testing, or excavation.

(c) *Retrieval of waste.* The underground facility shall be designed to permit retrieval of waste in accordance with the performance objectives of § 60.111.

(d) *Control of water and gas.* The design of the underground facility shall provide for control of water or gas intrusion.

(e) *Underground openings.* (1) Openings in the underground facility shall be designed so that operations can be carried out safely and the retrievability option maintained.

(2) Openings in the underground facility shall be designed to reduce the potential for deleterious rock movement or fracturing of overlying or surrounding rock.

(f) *Rock excavation.* The design of the underground facility shall incorporate excavation methods that will limit the potential for creating a preferential pathway for groundwater to contact the waste packages or radionuclide migration to the accessible environment.

(g) *Underground facility ventilation.* The ventilation system shall be designed to:

(1) Control the transport of radioactive particulates and gases within and releases from the underground facility in accordance with the performance objectives of § 60.111(a),

(2) Assure the ability to perform essential safety functions assuming occurrence of design basis events.

(3) Separate the ventilation of excavation and waste emplacement areas.

(h) *Engineered barriers.* Engineered barriers shall be designed to assist the geologic setting in meeting the performance objectives for the period following permanent closure.

(i) *Thermal loads.* The underground facility shall be designed so that the performance objectives will be met taking into account the predicted thermal and thermomechanical response of the host rock, and surrounding strata, groundwater system.

[48 FR 28222, June 21, 1983, as amended at 50 FR 29648, July 22, 1985; 61 FR 64270, Dec. 4, 1996]

§ 60.134 Design of seals for shafts and boreholes.

(a) *General design criterion.* Seals for shafts and boreholes shall be designed so that following permanent closure they do not become pathways that compromise the geologic repository's ability to meet the performance objectives or the period following permanent closure.

(b) *Selection of materials and placement methods.* Materials and placement methods for seals shall be selected to reduce, to the extent practicable:

(1) The potential for creating a preferential pathway for groundwater to contact the waste packages or

(2) For radionuclide migration through existing pathways.

[48 FR 28222, June 21, 1983, as amended at 50 FR 29648, July 22, 1985]

DESIGN CRITERIA FOR THE WASTE PACKAGE

§ 60.135 Criteria for the waste package and its components.

(a) *High-level-waste package design in general.* (1) Packages for HLW shall be designed so that the in situ chemical, physical, and nuclear properties of the waste package and its interactions with the emplacement environment do not compromise the function of the waste packages or the performance of the underground facility or the geologic setting.

(2) The design shall include but not be limited to consideration of the following factors: solubility, oxidation/reduction reactions, corrosion, hydriding, gas generation, thermal effects, mechanical strength, mechanical stress, radiolysis, radiation damage, radionuclide retardation, leaching, fire and explosion hazards, thermal loads, and synergistic interactions.

(b) *Specific criteria for HLW package design*—(1) *Explosive, pyrophoric, and chemically reactive materials.* The waste package shall not contain explosive or pyrophoric materials or chemically reactive materials in an amount that could compromise the ability of the underground facility to contribute to waste isolation or the ability of the geologic repository to satisfy the performance objectives.

(2) *Free liquids.* The waste package shall not contain free liquids in an amount that could compromise the ability of the waste packages to achieve the performance objectives relating to containment of HLW (because of chemical interactions or formation of pressurized vapor) or result in spillage and spread of contamination in the event of waste package perforation during the period through permanent closure.

(3) *Handling.* Waste packages shall be designed to maintain waste containment during transportation, emplacement, and retrieval.

(4) *Unique identification.* A label or other means of identification shall be provided for each waste package. The identification shall not impair the integrity of the waste package and shall be applied in such a way that the information shall be legible at least to the end of the period of retrievability. Each waste package identification shall be consistent with the waste package's permanent written records.

(c) Waste form criteria for HLW. High-level radioactive waste that is emplaced in the underground facility shall be designed to meet the following criteria:

(1) *Solidification.* All such radioactive wastes shall be in solid form and placed in sealed containers.

(2) *Consolidation.* Particulate waste forms shall be consolidated (for example, by incorporation into an encapsulating matrix) to limit the availability and generation of particulates.

(3) *Combustibles.* All combustible radioactive wastes shall be reduced to a noncombustible form unless it can be demonstrated that a fire involving the waste packages containing combustibles will not compromise the integrity of other waste packages, adversely affect any structures, systems, or components important to safety, or compromise the ability of the underground facility to contribute to waste isolation.

(d) *Design criteria for other radioactive wastes.* Design criteria for waste types other than HLW will be addressed on an individual basis if and when they are proposed for disposal in a geologic repository.

PRECLOSURE CONTROLLED AREA

§ 60.136 Preclosure controlled area.

(a) A preclosure controlled area must be established for the geologic repository operations area.

(b) The geologic repository operations area shall be designed so that, for Category 2 design basis events, no individual located on or beyond any point on the boundary of the preclosure controlled area will receive the more limiting of a total effective dose equivalent of 0.05 Sv (5 rem), or the sum of the deep-dose equivalent and the committed dose equivalent to any individual organ or tissue (other than the lens of the eye) of 0.5 Sv (50 rem). The eye dose equivalent shall not exceed 0.15 Sv (15 rem), and the shallow dose equivalent to skin shall not exceed 0.5 Sv (50 rem). The minimum distance from the surface facilities in the geologic repository operations area to the boundary of the preclosure controlled area must be at least 100 meters.

(c) The preclosure controlled area may be traversed by a highway, railroad, or waterway, so long as appropriate and effective arrangements are made to control traffic and to protect public health and safety.

[61 FR 64270, Dec. 4, 1996]

PERFORMANCE CONFIRMATION REQUIREMENTS

§ 60.137 General requirements for performance confirmation.

The geologic repository operations area shall be designed so as to permit implementation of a performance confirmation program that meets the requirements of subpart F of this part.

Subpart F—Performance Confirmation Program

SOURCE: 48 FR 28228, June 21, 1983, unless otherwise noted.

§ 60.140 General requirements.

(a) The performance confirmation program shall provide data which indicates, where practicable, whether:

(1) Actual subsurface conditions encountered and changes in those conditions during construction and waste emplacement operations are within the limits assumed in the licensing review; and

(2) Natural and engineered systems and components required for repository operation, or which are designed or assumed to operate as barriers after permanent closure, are functioning as intended and anticipated.

(b) The program shall have been started during site characterization and it will continue until permanent closure.

(c) The program shall include in situ monitoring, laboratory and field testing, and in situ experiments, as may be appropriate to accomplish the objective as stated above.

(d) The program shall be implemented so that:

(1) It does not adversely affect the ability of the natural and engineered elements of the geologic repository to meet the performance objectives.

(2) It provides baseline information and analysis of that information on those parameters and natural processes pertaining to the geologic setting that may be changed by site characterization, construction, and operational activities.

(3) It monitors and analyzes changes from the baseline condition of parameters that could affect the performance of a geologic repository.

(4) It provides an established plan for feedback and analysis of data, and implementation of appropriate action.

§ 60.141 Confirmation of geotechnical and design parameters.

(a) During repository construction and operation, a continuing program of surveillance, measurement, testing, and geologic mapping shall be conducted to ensure that geotechnical and design parameters are confirmed and to ensure that appropriate action is taken to inform the Commission of changes needed in design to accommodate actual field conditions encountered.

(b) Subsurface conditions shall be monitored and evaluated against design assumptions.

(c) As a minimum, measurements shall be made of rock deformations and displacement, changes in rock stress and strain, rate and location of water inflow into subsurface areas, changes in groundwater conditions, rock pore water pressures including those along fractures and joints, and the thermal and thermomechanical response of the rock mass as a result of development and operations of the geologic repository.

(d) These measurements and observations shall be compared with the original design bases and assumptions. If significant differences exist between the measurements and observations and the original design bases and assumptions, the need for modifications to the design or in construction methods shall be determined and these differences and the recommended changes reported to the Commission.

(e) In situ monitoring of the thermomechanical response of the underground facility shall be conducted until permanent closure to ensure that the performance of the natural and engineering features are within design limits.

§ 60.142 Design testing.

(a) During the early or developmental stages of construction, a program for in situ testing of such features as borehole and shaft seals, backfill, and the thermal interaction effects of the waste packages, backfill, rock, and groundwater shall be conducted.

(b) The testing shall be initiated as early as is practicable.

(c) A backfill test section shall be constructed to test the effectiveness of backfill placement and compaction procedures against design requirements before permanent backfill placement is begun.

(d) Test sections shall be established to test the effectiveness of borehole and shaft seals before full-scale operation proceeds to seal boreholes and shafts.

§ 60.143 Monitoring and testing waste packages.

(a) A program shall be established at the geologic repository operations area for monitoring the condition of the waste packages. Waste packages chosen for the program shall be representative of those to be emplaced in the underground facility.

(b) Consistent with safe operation at the geologic repository operations area, the environment of the waste packages selected for the waste package monitoring program shall be representative of the environment in which the wastes are to be emplaced.

(c) The waste package monitoring program shall include laboratory experiments which focus on the internal condition of the waste packages. To the extent practical, the environment experienced by the emplaced waste packages within the underground facility during the waste package monitoring program shall be duplicated in the laboratory experiments.

(d) The waste package monitoring program shall continue as long as practical up to the time of permanent closure.

Subpart G—Quality Assurance

SOURCE: 48 FR 28228, June 21, 1983, unless otherwise noted.

§ 60.150 Scope.

As used in this part, *quality assurance* comprises all those planned and systematic actions necessary to provide adequate confidence that the geologic repository and its subsystems or components will perform satisfactorily in service. Quality assurance includes quality control, which comprises those

quality assurance actions related to the physical characteristics of a material, structure, component, or system which provide a means to control the quality of the material, structure, component, or system to predetermined requirements.

§ 60.151 Applicability.

The quality assurance program applies to all systems, structures and components important to safety, to design and characterization of barriers important to waste isolation and to activities related thereto. These activities include: site characterization, facility and equipment construction, facility operation, performance confirmation, permanent closure, and decontamination and dismantling of surface facilities.

§ 60.152 Implementation.

DOE shall implement a quality assurance program based on the criteria of appendix B of 10 CFR part 50 as applicable, and appropriately supplemented by additional criteria as required by § 60.151.

Subpart H—Training and Certification of Personnel

SOURCE: 48 FR 28229, June 21, 1983, unless otherwise noted.

§ 60.160 General requirements.

Operations of systems and components that have been identified as important to safety in the Safety Analysis Report and in the license shall be performed only by trained and certified personnel or by personnel under the direct visual supervision of an individual with training and certification in such operation. Supervisory personnel who direct operations that are important to safety must also be certified in such operations.

§ 60.161 Training and certification program.

DOE shall establish a program for training, proficiency testing, certification and requalification of operating and supervisory personnel.

§ 60.162 Physical requirements.

The physical condition and the general health of personnel certified for operations that are important to safety shall not be such as might cause operational errors that could endanger the public health and safety. Any condition which might cause impaired judgment or motor coordination must be considered in the selection of personnel for activities that are important to safety. These conditions need not categorically disqualify a person, so long as appropriate provisions are made to accommodate such conditions.

Subpart I—Emergency Planning Criteria [Reserved]

Subpart J—Violations

§ 60.181 Violations.

(a) The Commission may obtain an injunction or other court order to prevent a violation of the provisions of—

(1) The Atomic Energy Act of 1954, as amended;

(2) Title II of the Energy Reorganization Act of 1974, as amended; or

(3) A regulation or order issued pursuant to those Acts.

(b) The Commission may obtain a court order for the payment of a civil penalty imposed under section 234 of the Atomic Energy Act:

(1) For violations of—

(i) Sections 53, 57, 62, 63, 81, 82, 101, 103, 104, 107, or 109 of the Atomic Energy Act of 1954, as amended;

(ii) Section 206 of the Energy Reorganization Act;

(iii) Any rule, regulation, or order issued pursuant to the sections specified in paragraph (b)(1)(i) of this section;

(iv) Any term, condition, or limitation of any license issued under the sections specified in paragraph (b)(1)(i) of this section.

(2) For any violation for which a license may be revoked under section 186 of the Atomic Energy Act of 1954, as amended.

[57 FR 55076, Nov. 24, 1992]

§ 60.183 Criminal penalties.

(a) Section 223 of the Atomic Energy Act of 1954, as amended, provides for

criminal sanctions for willful violation of, attempted violation of, or conspiracy to violate, any regulation issued under sections 161b, 161i, or 161o of the Act. For purposes of section 223, all the regulations in part 60 are issued under one or more of sections 161b, 161i, or 161o, except for the sections listed in paragraph (b) of this section.

(b) The regulations in part 60 that are not issued under sections 161b, 161i, or 161o for the purposes of section 223 are as follows: §§60.1, 60.2, 60.3, 60.5, 60.6, 60.7, 60.8, 60.15, 60.16, 60.17, 60.18, 60.21, 60.22, 60.23, 60.24, 60.31, 60.32, 60.33, 60.41, 60.42, 60.43, 60.44, 60.45, 60.46, 60.51, 60.52, 60.61, 60.62, 60.63, 60.64, 60.65, 60.101, 60.102, 60.111, 60.112, 60.113, 60.121, 60.122, 60.130, 60.131, 60.132, 60.133, 60.134, 60.135, 60.137, 60.140, 60.141, 60.142, 60.143, 60.150, 60.151, 60.152, 60.162, 60.181, and 60.183.

[57 FR 55076, Nov. 24, 1992]

PART 61—LICENSING REQUIREMENTS FOR LAND DISPOSAL OF RADIOACTIVE WASTE

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AUTHORITY: Atomic Energy Act of 1954, secs. 53, 57, 62, 63, 65, 81, 161, 181, 182, 183, 223, 234 (42 U.S.C. 2073, 2077, 2092, 2093, 2095, 2111, 2201, 2231, 2232, 2233, 2273, 2282); Energy Reorganization Act of 1974, secs. 201, 206, 211 (42 U.S.C. 5841, 5846, 5851); Low-Level Radioactive Waste Policy Amendments Act of 1985, sec. 2 (42 U.S.C. 2021b); 44 U.S.C. 3504 note.

SOURCE: 47 FR 57463, Dec. 27, 1982, unless otherwise noted.

EDITORIAL NOTE: Nomenclature changes to part 61 appear at 80 FR 74980, Dec. 1, 2015, and at 81 FR 86909, Dec. 2, 2016.

Subpart A—General Provisions

§61.1 Purpose and scope.

(a) The regulations in this part establish, for land disposal of radioactive waste, the procedures, criteria, and terms and conditions upon which the Commission issues licenses for the disposal of radioactive wastes containing byproduct, source and special nuclear material received from other persons. Disposal of waste by an individual licensee is set forth in part 20 of this chapter. Applicability of the requirements in this part to Commission licenses for waste disposal facilities in effect on the effective date of this rule will be determined on a case-by-case basis and implemented through terms and conditions of the license or by orders issued by the Commission.

(b) Except as provided in part 150 of this chapter, which addresses assumption of certain regulatory authority by Agreement States, and §61.6 ''Exemptions,'' the regulations in this part apply to all persons in the United States. The regulations in this part do not apply to—

(1) Disposal of high-level waste as provided for in part 60 or 63 of this chapter;

(2) Disposal of uranium or thorium tailings or wastes (byproduct material as defined in §40.4 (a-1) as provided for in part 40 of this chapter in quantities greater than 10,000 kilograms and containing more than 5 millicuries of radium-226; or

(3) Disposal of licensed material as provided for in part 20 of this chapter.

(c) This part also gives notice to all persons who knowingly provide to any licensee, applicant, contractor, or subcontractor, components, equipment, materials, or other goods or services, that relate to a licensee's or applicant's activities subject to this part, that they may be individually subject to NRC enforcement action for violation of §61.9b.

[47 FR 57463, Dec. 27, 1982, as amended at 56 FR 40690, Aug. 15, 1991; 63 FR 1898, Jan. 13, 1998; 66 FR 55791, Nov. 2, 2001]

§61.2 Definitions.

As used in this part:

Active maintenance means any significant remedial activity needed during the period of institutional control to maintain a reasonable assurance that the performance objectives in §§61.41 and 61.42 are met. Such active maintenance includes ongoing activities such as the pumping and treatment of water from a disposal unit or one-time measures such as replacement of a disposal unit cover. Active maintenance does not include custodial activities such as repair of fencing, repair or replacement of monitoring equipment, revegetation, minor additions to soil cover, minor repair of disposal unit covers, and general disposal site upkeep such as mowing grass.

Buffer zone is a portion of the disposal site that is controlled by the licensee and that lies under the disposal units and between the disposal units and the boundary of the site.

Chelating agent means amine polycarboxylic acids (e.g., EDTA, DTPA), hydroxy-carboxylic acids, and polycarboxylic acids (e.g., citric acid, carbolic acid, and glucinic acid).

Commencement of construction means any clearing of land, excavation, or other substantial action that would adversely affect the environment of a land disposal facility. The term does not mean disposal site exploration, necessary roads for disposal site exploration, borings to determine foundation conditions, or other preconstruction monitoring or testing to establish background information related to the suitability of the disposal site or the protection of environmental values.

Commission means the Nuclear Regulatory Commission or its duly authorized representatives.

Custodial Agency means an agency of the government designated to act on

behalf of the government owner of the disposal site.

Director means the Director, Office of Nuclear Material Safety and Safeguards, U.S. Nuclear Regulatory Commission.

Disposal means the isolation of radioactive wastes from the biosphere inhabited by man and containing his food chains by emplacement in a land disposal facility.

Disposal site means that portion of a land disposal facility which is used for disposal of waste. It consists of disposal units and a buffer zone.

Disposal unit means a discrete portion of the disposal site into which waste is placed for disposal. For near-surface disposal the unit is usually a trench.

Engineered barrier means a man-made structure or device that is intended to improve the land disposal facility's ability to meet the performance objectives in subpart C.

Explosive material means any chemical compound, mixture, or device, which produces a substantial instantaneous release of gas and heat spontaneously or by contact with sparks or flame.

Government agency means any executive department, commission, independent establishment, or corporation, wholly or partly owned by the United States of America which is an instrumentality of the United States; or any board, bureau, division, service, office, officer, authority, administration, or other establishment in the executive branch of the government.

Hazardous waste means those wastes designated as hazardous by Environmental Protection Agency regulations in 40 CFR part 261.

Hydrogeologic unit means any soil or rock unit or zone which by virtue of its porosity or permeability, or lack thereof, has a distinct influence on the storage or movement of groundwater.

Inadvertent intruder means a person who might occupy the disposal site after closure and engage in normal activities, such as agriculture, dwelling construction, or other pursuits in which the person might be unknowingly exposed to radiation from the waste.

Indian Tribe means an Indian Tribe as defined in the Indian Self-Determination and Education Assistance Act (25 U.S.C. 5301).

Intruder barrier means a sufficient depth of cover over the waste that inhibits contact with waste and helps to ensure that radiation exposures to an inadvertent intruder will meet the performance objectives set forth in this part, or engineered structures that provide equivalent protection to the inadvertent intruder.

Land disposal facility means the land, building, and structures, and equipment which are intended to be used for the disposal of radioactive wastes. For purposes of this chapter, a ''geologic repository'' as defined in part 60 or 63 is not considered a land disposal facility.

License means a license issued under the regulations in part 61 of this chapter. *Licensee* means the holder of such a license.

Monitoring means observing and making measurements to provide data to evaluate the performance and characteristics of the disposal site.

Near-surface disposal facility means a land disposal facility in which radioactive waste is disposed of in or within the upper 30 meters of the earth's surface.

Person means (1) any individual, corporation, partnership, firm, association, trust, estate, public or private institution, group, government agency other than the Commission or the Department of Energy (except that the Department of Energy is considered a person within the meaning of the regulations in this part to the extent that its facilities and activities are subject to the licensing and related regulatory authority of the Commission pursuant to law), any State or any political subdivision of or any political entity within a State, any foreign government or nation or any political subdivision of any such government or nation, or other entity; and (2) any legal successor, representative, agent, or agency of the foregoing.

Pyrophoric liquid means any liquid that ignites spontaneously in dry or moist air at or below 130 °F (54.5 °C). A pyrophoric solid is any solid material, other than one classed as an explosive, which under normal conditions is liable

to cause fires through friction, retained heat from manufacturing or processing, or which can be ignited readily and when ignited burns so vigorously and persistently as to create a serious transportation, handling, or disposal hazard. Included are spontaneously combustible and water-reactive materials.

Site closure and stablization means those actions that are taken upon completion of operations that prepare the disposal site for custodial care and that assure that the disposal site will remain stable and will not need ongoing active maintenance.

State means any State, Territory, or possession of the United States, Puerto Rico, and the District of Columbia.

Stability means structural stabillity.

Surveillance means observation of the disposal site for purposes of visual detection of need for maintenance, custodial care, evidence of intrusion, and compliance with other license and regulatory requirements.

Tribal Governing Body means a Tribal organization as defined in the Indian Self-Determination and Education Assistance Act (25 U.S.C. 5301).

Waste means those low-level radioactive wastes containing source, special nuclear, or byproduct material that are acceptable for disposal in a land disposal facility. For the purposes of this definition, low-level radioactive waste means radioactive waste not classified as high-level radioactive waste, transuranic waste, spent nuclear fuel, or byproduct material as defined in paragraphs (2), (3), and (4) of the definition of *Byproduct material* set forth in §20.1003 of this chapter.

[47 FR 57463, Dec. 27, 1982, as amended at 54 FR 22583, May 25, 1989; 58 FR 33891, June 22, 1993; 66 FR 55792, Nov. 2, 2001; 72 FR 55933, Oct. 1, 2007; 73 FR 5725, Jan. 31, 2008; 79 FR 75740, Dec. 19, 2014; 82 FR 52825, Nov. 15, 2017]

§61.3 License required.

(a) No person may receive, possess, and dispose of radioactive waste containing source, special nuclear, or byproduct material at a land disposal facility unless authorized by a license issued by the Commission pursuant to this part, or unless exemption has been granted by the Commission under §61.6 of this part.

(b) Each person shall file an application with the Commission and obtain a license as provided in this part before commencing construction of a land disposal facility. Failure to comply with this requirement may be grounds for denial of a license.

§61.4 Communications.

Except where otherwise specified, all communications and reports concerning the regulations in this part and applications filed under them should be sent by mail addressed: ATTN: Document Control Desk; Director, Office of Nuclear Material Safety and Safeguards, U.S. Nuclear Regulatory Commission, Washington, DC 20555–0001; by hand delivery to the NRC's Offices at 11555 Rockville Pike, Rockville, Maryland; or, where practicable, by electronic submission, for example, via Electronic Information Exchange, or CD–ROM. Electronic submissions must be made in a manner that enables the NRC to receive, read, authenticate, distribute, and archive the submission, and process and retrieve it a single page at a time. Detailed guidance on making electronic submissions can be obtained by visiting the NRC's Web site at *http://www.nrc.gov/site-help/e-submittals.html*; by e-mail to *MSHD.Resource@nrc.gov*; or by writing the Office of the Chief Information Officer, U.S. Nuclear Regulatory Commission, Washington, DC 20555–0001. The guidance discusses, among other topics, the formats the NRC can accept, the use of electronic signatures, and the treatment of nonpublic information.

[73 FR 5725, Jan. 31, 2008, as amended at 74 FR 62683, Dec. 1, 2009; 79 FR 75740, Dec. 19, 2014; 80 FR 74980, Dec. 1, 2015]

§61.5 Interpretations.

Except as specifically authorized by the Commission in writing, no interpretation of the meaning of the regulations in this part by any officer or employee of the Commission other than a written interpretation by the General Counsel will be considered binding upon the Commission.

§61.6 Exemptions.

The Commission may, upon application by any interested person, or upon

its own initiative, grant any exemption from the requirements of the regulations in this part as it determines is authorized by law, will not endanger life or property or the common defense and security, and is otherwise in the public interest.

§ 61.7 Concepts.

(a) *The disposal facility.* (1) Part 61 is intended to apply to land disposal of radioactive waste and not to other methods such as sea or extraterrestrial disposal. Part 61 contains procedural requirements and performance objectives applicable to any method of land disposal. It contains specific technical requirements for near-surface disposal of radioactive waste, a subset of land disposal, which involves disposal in the uppermost portion of the earth, approximately 30 meters. Near-surface disposal includes disposal in engineered facilities which may be built totally or partially above-grade provided that such facilities have protective earthen covers. Near-surface disposal does not include disposal facilities which are partially or fully above-grade with no protective earthen cover, which are referred to as ''above-ground disposal.'' Burial deeper than 30 meters may also be satisfactory. Technical requirements for alternative methods may be added in the future.

(2) Near-surface disposal of radioactive waste takes place at a near-surface disposal facility, which includes all of the land and buildings necessary to carry out the disposal. The disposal site is that portion of the facility which is used for disposal of waste and consists of disposal units and a buffer zone. A disposal unit is a discrete portion of the disposal site into which waste is placed for disposal. For near-surface disposal, the disposal unit is usually a trench. A buffer zone is a portion of the disposal site that is controlled by the licensee and that lies under the site and between the boundary of the disposal site and any disposal unit. It provides controlled space to establish monitoring locations which are intended to provide an early warning of radionuclide movement, and to take mitigative measures if needed. In choosing a disposal site, site characteristics should be considered in terms of the indefinite future and evaluated for at least a 500–year timeframe.

(b) *Waste classification and near-surface disposal.* (1) Disposal of radioactive waste in near-surface disposal facilities has the following safety objectives: protection of the general population from releases of radioactivity, protection of individuals from inadvertent intrusion, and protection of individuals during operations. A fourth objective is to ensure stability of the site after closure.

(2) A cornerstone of the system is stability—stability of the waste and the disposal site so that once emplaced and covered, the access of water to the waste can be minimized. Migration of radionuclides is thus minimized, long-term active maintenance can be avoided, and potential exposures to intruders reduced. While stability is a desirable characteristic for all waste much radioactive waste does not contain sufficient amounts of radionuclides to be of great concern from these standpoints; this waste, however, tends to be unstable, such as ordinary trash type wastes. If mixed with the higher activity waste, their deterioration could lead to failure of the system and permit water to penetrate the disposal unit and cause problems with the higher activity waste. Therefore, in order to avoid placing requirements for a stable waste form on relatively innocuous waste, these wastes have been classed as Class A waste. The Class A waste will be disposed of in separate disposal units at the disposal site. However, Class A waste that is stable may be mixed with other classes of waste. Those higher activity wastes that should be stable for proper disposal are classed as Class B and C waste. To the extent that it is practicable, Class B and C waste forms or containers should be designed to be stable, *i.e.*, maintain gross physical properties and identity, over 300 years. For certain radionuclides prone to migration, a maximum disposal site inventory based on the characteristics of the disposal site may be established to limit potential exposure.

(3) It is possible but unlikely that persons might occupy the site in the future and engage in normal pursuits

without knowing that they were receiving radiation exposure. These persons are referred to as inadvertent intruders. Protection of such intruders can involve two principal controls: institutional control over the site after operations by the site owner to ensure that no such occupation or improper use of the site occurs; or, designating which waste could present an unacceptable risk to an intruder, and disposing of this waste in a manner that provides some form of intruder barrier that is intended to prevent contact with the waste. This regulation incorporates both types of protective controls.

(4) Institutional control of access to the site is required for up to 100 years. This permits the disposal of Class A and Class B waste without special provisions for intrusion protection, since these classes of waste contain types and quantities of radioisotopes that will decay during the 100-year period and will present an acceptable hazard to an intruder. The government landowner administering the active institutional control program has flexibility in controlling site access which may include allowing productive uses of the land provided the integrity and long-term performance of the site are not affected.

(5) Waste that will not decay to levels which present an acceptable hazard to an intruder within 100 years is designated as Class C waste. This waste is disposed of at a greater depth than the other classes of waste so that subsequent surface activities by an intruder will not disturb the waste. Where site conditions prevent deeper disposal, intruder barriers such as concrete covers may be used. The effective life of these intruder barriers should be 500 years. A maximum concentration of radionuclides is specified for all wastes so that at the end of the 500 year period, remaining radioactivity will be at a level that does not pose an unacceptable hazard to an intruder or public health and safety. Waste with concentrations above these limits is generally unacceptable for near-surface disposal. There may be some instances where waste with concentrations greater than permitted for Class C would be acceptable for near-surface disposal with special processing or design. These will be evaluated on a case-by-case basis. Class C waste must also be stable.

(c) *The licensing process.* (1) During the preoperational phase, the potential applicant goes through a process of disposal site selection by selecting a region of interest, examining a number of possible disposal sites within the area of interest and narrowing the choice to the proposed site. Through a detailed investigation of the disposal site characteristics the potential applicant obtains data on which to base an analysis of the disposal site's suitability. Along with these data and analyses, the applicant submits other more general information to the Commission in the form of an application for a license for land disposal. The Commission's review of the application is in accordance with administrative procedures established by rule and may involve participation by affected State governments or Indian Tribes. While the proposed disposal site must be owned by a State or the Federal government before the Commission will issue a license, it may be privately owned during the preoperational phase if suitable arrangements have been made with a State or the Federal government to take ownership in fee of the land before the license is issued.

(2) During the operational phase, the licensee carries out disposal activities in accordance with the requirements of this regulation and any conditions on the license. Periodically, the authority to conduct the above ground operations and dispose of waste will be subject to a license renewal, at which time the operating history will be reviewed and a decision made to permit or deny continued operation. When disposal operations are to cease, the licensee applies for an amendment to his license to permit site closure. After final review of the licensee's site closure and stabilization plan, the Commission may approve the final activities necessary to prepare the disposal site so that ongoing active maintenance of the site is not required during the period of institutional control.

(3) During the period when the final site closure and stabilization activities are being carried out, the licensee is in a disposal site closure phase. Following

that, for a period of 5 years, the licensee must remain at the disposal site for a period of post-closure observation and maintenance to assure that the disposal site is stable and ready for institutional control. The Commission may approve shorter or require longer periods if conditions warrant. At the end of this period, the licensee applies for a license transfer to the disposal site owner.

(4) After a finding of satisfactory disposal site closure, the Commission will transfer the license to the State or Federal government that owns the disposal site. If the Department of Energy is the Federal agency administering the land on bahalf of the Federal government the license will be terminated because the Commission lacks regulatory authority over the Department for this activity. Under the conditions of the transferred license, the owner will carry out a program of monitoring to assure continued satisfactory disposal site performance, physical surveillance to restrict access to the site and carry out minor custodial activities. During this period, productive uses of the land might be permitted if those uses do not affect the stability of the site and its ability to meet the performance objectives. At the end of the prescribed period of institutional control, the license will be terminated by the Commission.

[47 FR 57463, Dec. 27, 1982, as amended at 58 FR 33891, June 22, 1993]

§ 61.8 Information collection requirements: OMB approval.

(a) The Nuclear Regulatory Commission has submitted the information collection requirements contained in this part to the Office of Management and Budget (OMB) for approval as required by the Paperwork Reduction Act (44 U.S.C. 3501 *et seq.*). The NRC may not conduct or sponsor, and a person is not required to respond to, a collection of information unless it displays a currently valid OMB control number. OMB has approved the information collection requirements contained in this part under control number 3150–0135.

(b) The approved information collection requirements contained in this Part appear in §§ 61.3, 61.6, 61.9, 61.10, 61.11, 61.12, 61.13, 61.14, 61.15, 61.16, 61.20, 61.22, 61.24, 61.26, 61.27, 61.28, 61.30, 61.31, 61.32, 61.53, 61.55, 61.57, 61.58, 61.61, 61.62, 61.63, 61.72, and 61.80.

(c) In § 61.32, IAEA Design Information Questionnaire forms IAEA Design Information Questionnaire forms are approved under control number 3150–0056, and DOC/NRC Forms AP–1, AP–A, and associated forms are approved under control numbers 0694–0135.

[58 FR 33891, June 22, 1993, as amended at 62 FR 52188, Oct. 6, 1997; 73 FR 78606, Dec. 23, 2008; 85 FR 65663, Oct. 16, 2020]

§ 61.9 Employee protection.

(a) Discrimination by a Commission licensee, an applicant for a Commission license, or a contractor or subcontractor of a Commission licensee or applicant against an employee for engaging in certain protected activities is prohibited. Discrimination includes discharge and other actions that relate to compensation, terms, conditions, or privileges of employment. The protected activities are established in section 211 of the Energy Reorganization Act of 1974, as amended, and in general are related to the administration or enforcement of a requirement imposed under the Atomic Energy Act or the Energy Reorganization Act.

(1) The protected activities include but are not limited to:

(i) Providing the Commission or his or her employer information about alleged violations of either of the statutes named in paragraph (a) introductory text of the section or possible violations of requirements imposed under either of those statutes;

(ii) Refusing to engage in any practice made unlawful under either of the statutes named in paragraph (a) introductory text or under these requirements if the employee has identified the alleged illegality to the employer;

(iii) Requesting the Commission to institute action against his or her employer for the administration or enforcement of these requirements;

(iv) Testifying in any Commission proceeding, or before Congress, or at any Federal or State proceeding regarding any provision (or proposed provision) of either of the statutes named in paragraph (a) introductory text.

(v) Assisting or participating in, or is about to assist or participate in, these activities.

(2) These activities are protected even if no formal proceeding is actually initiated as a result of the employee assistance or participation.

(3) This section has no application to any employee alleging discrimination prohibited by this section who, acting without direction from his or her employer (or the employer's agent), deliberately causes a violation of any requirement of the Energy Reorganization Act of 1974, as amended, or the Atomic Energy Act of 1954, as amended.

(b) Any employee who believes that he or she has been discharged or otherwise discriminated against by any person for engaging in protected activities specified in paragraph (a)(1) of this section may seek a remedy for the discharge or discrimination through an administrative proceeding in the Department of Labor. The administrative proceeding must be initiated within 180 days after an alleged violation occurs. The employee may do this by filing a complaint alleging the violation with the Department of Labor, Employment Standards Administration, Wage and Hour Division. The Department of Labor may order reinstatement, back pay, and compensatory damages.

(c) A violation of paragraph (a), (e), or (f) of this section by a Commission licensee, an applicant for a Commission license, or a contractor or subcontractor of a Commission licensee or applicant may be grounds for—

(1) Denial, revocation, or suspension of the license.

(2) Imposition of a civil penalty on the licensee, applicant, or a contractor or subcontractor of the licensee or applicant.

(3) Other enforcement action.

(d) Actions taken by an employer, or others, which adversely affect an employee may be predicated upon nondiscriminatory grounds. The prohibition applies when the adverse action occurs because the employee has engaged in protected activities. An employee's engagement in protected activities does not automatically render him or her immune from discharge or discipline for legitimate reasons or from adverse action dictated by nonprohibited considerations.

(e)(1) Each licensee and each applicant for a license shall prominently post the revision of NRC Form 3, ''Notice to Employees,'' referenced in 10 CFR 19.11(c). This form must be posted at locations sufficient to permit employees protected by this section to observe a copy on the way to or from their place of work. Premises must be posted not later than 30 days after an application is docketed and remain posted while the application is pending before the Commission, during the term of the license, and for 30 days following license termination.

(2) Copies of NRC Form 3 can be obtained by writing to the Regional Administrator of the appropriate U.S. Nuclear Regulatory Commission Regional Office listed in appendix D to part 20 of this chapter, via email to *Forms.Resource@nrc.gov*, or by visiting the NRC's online library at *http://www.nrc.gov/reading-rm/doc-collections/forms/*.

(f) No agreement affecting the compensation, terms, conditions, or privileges of employment, including an agreement to settle a complaint filed by an employee with the Department of Labor pursuant to section 211 of the Energy Reorganization Act of 1974, as amended, may contain any provision which would prohibit, restrict, or otherwise discourage an employee from participating in protected activity as defined in paragraph (a)(1) of this section including, but not limited to, providing information to the NRC or to his or her employer on potential violations or other matters within NRC's regulatory responsibilities.

[58 FR 52412, Oct. 8, 1993, as amended at 60 FR 24552, May 9, 1995; 61 FR 6765, Feb. 22, 1996; 68 FR 58814, Oct. 10, 2003; 72 FR 63974, Nov. 14, 2007; 73 FR 30459, May 28, 2008; 79 FR 66605, Nov. 10, 2014]

§61.9a Completeness and accuracy of information.

(a) Information provided to the Commission by an applicant for a license or by a licensee or information required by statute or by the Commission's regulations, orders, or license conditions to be maintained by the applicant or

the licensee shall be complete and accurate in all material respects.

(b) Each applicant or licensee shall notify the Commission of information identified by the applicant or licensee as having for the regulated activity a significant implication for public health and safety or common defense and security. An applicant or licensee violates this paragraph only if the applicant or licensee fails to notify the Commission of information that the applicant or licensee has identified as having a significant implication for public health and safety or common defense and security. Notification shall be provided to the Administrator of the appropriate Regional Office within two working days of identifying the information. This requirement is not applicable to information which is already required to be provided to the Commission by other reporting or updating requirements.

[52 FR 49372, Dec. 31, 1987]

§ 61.9b Deliberate misconduct.

(a) Any licensee, applicant for a license, employee of a licensee or applicant; or any contractor (including a supplier or consultant), subcontractor, employee of a contractor or subcontractor of any licensee or applicant for a license, who knowingly provides to any licensee, applicant, contractor, or subcontractor, any components, equipment, materials, or other goods or services that relate to a licensee's or applicant's activities in this part, may not:

(1) Engage in deliberate misconduct that causes or would have caused, if not detected, a licensee or applicant to be in violation of any rule, regulation, or order; or any term, condition, or limitation of any license issued by the Commission; or

(2) Deliberately submit to the NRC, a licensee, an applicant, or a licensee's or applicant's contractor or subcontractor, information that the person submitting the information knows to be incomplete or inaccurate in some respect material to the NRC.

(b) A person who violates paragraph (a)(1) or (a)(2) of this section may be subject to enforcement action in accordance with the procedures in 10 CFR part 2, subpart B.

(c) For the purposes of paragraph (a)(1) of this section, deliberate misconduct by a person means an intentional act or omission that the person knows:

(1) Would cause a licensee or applicant to be in violation of any rule, regulation, or order; or any term, condition, or limitation, of any license issued by the Commission; or

(2) Constitutes a violation of a requirement, procedure, instruction, contract, purchase order, or policy of a licensee, applicant, contractor, or subcontractor.

[63 FR 1898, Jan. 13, 1998]

Subpart B—Licenses

§ 61.10 Content of application.

An application to receive from others, possess and dispose of wastes containing or contaminated with source, byproduct or special nuclear material by land disposal must consist of general information, specific technical information, institutional information, and financial information as set forth in §§ 61.11 through 61.16. An environmental report prepared in accordance with subpart A of part 51 of this chapter must accompany the application.

[49 FR 9405, Mar. 12, 1984]

§ 61.11 General information.

The general information must include each of the following:

(a) Identity of the applicant including:

(1) The full name, address, telephone number and description of the business or occupation of the applicant;

(2) If the applicant is a partnership, the name, and address of each partner and the principal location where the partnership does business;

(3) If the applicant is a corporation or an unincorporated association, (i) the state where it is incorporated or organized and the principal location where it does business, and (ii) the names and addresses of its directors and principal officers; and

(4) If the applicant is acting as an agent or representative of another person in filing the application, all information required under this paragraph

must be supplied with respect to the other person.

(b) Qualifications of the applicant:

(1) The organizational structure of the applicant, both offsite and onsite, including a description of lines of authority and assignments of responsibilities, whether in the form of administrative directives, contract provisions, or otherwise;

(2) The technical qualifications, including training and experience, of the applicant and members of the applicant's staff to engage in the proposed activities. Minimum training and experience requirements for personnel filling key positions described in paragraph (b)(1) of this section must be provided;

(3) A description of the applicant's personnel training program; and

(4) The plan to maintain an adequate complement of trained personnel to carry out waste receipt, handling, and disposal operations in a safe manner.

(c) A description of:

(1) The location of the proposed disposal site;

(2) The general character of the proposed activities;

(3) The types and quantities of radioactive waste to be received, possessed, and disposed of;

(4) Plans for use of the land disposal facility for purposes other than disposal of radioactive wastes; and

(5) The proposed facilities and equipment.

(d) Proposed schedules for construction, receipt of waste, and first emplacement of waste at the proposed land disposal facility.

§61.12 Specific technical information.

The specific technical information must include the following information needed for demonstration that the performance objectives of subpart C of this part and the applicable technical requirements of subpart D of this part will be met:

(a) A description of the natural and demographic disposal site characteristics as determined by disposal site selection and characterization activities. The description must include geologic, geotechnical, hydrologic, meteorologic, climatologic, and biotic features of the disposal site and vicinity.

(b) A description of the design features of the land disposal facility and the disposal units. For near-surface disposal, the description must include those design features related to infiltration of water; integrity of covers for disposal units; structural stability of backfill, wastes, and covers; contact of wastes with standing water; disposal site drainage; disposal site closure and stabilization; elimination to the extent practicable of long-term disposal site maintenance; inadvertent intrusion; occupational exposures; disposal site monitoring; and adequacy of the size of the buffer zone for monitoring and potential mitigative measures.

(c) A description of the principal design criteria and their relationship to the performance objectives.

(d) A description of the design basis natural events or phenomena and their relationship to the principal design criteria.

(e) A description of codes and standards which the applicant has applied to the design and which will apply to construction of the land disposal facilities.

(f) A description of the construction and operation of the land disposal facility. The description must include as a minimum the methods of construction of disposal units; waste emplacement; the procedures for and areas of waste segregation; types of intruder barriers; onsite traffic and drainage systems; survey control program; methods and areas of waste storage; and methods to control surface water and groundwater access to the wastes. The description must also include a description of the methods to be employed in the handling and disposal of wastes containing chelating agents or other non-radiological substances that might affect meeting the performance objectives in subpart C of this part.

(g) A description of the disposal site closure plan, including those design features which are intended to facilitate disposal site closure and to eliminate the need for ongoing active maintenance.

(h) An identification of the known natural resources at the disposal site, the exploitation of which could result in inadvertent intrusion into the low-level wastes after removal of active institutional control.

(i) A description of the kind, amount, classification and specifications of the radioactive material proposed to be received, possessed, and disposed of at the land disposal facility.

(j) A description of the quality assurance program, tailored to LLW disposal, developed and applied by the applicant for the determination of natural disposal site characteristics and for quality assurance during the design, construction, operation, and closure of the land disposal facility and the receipt, handling, and emplacement of waste.

(k) A description of the radiation safety program for control and monitoring of radioactive effluents to ensure compliance with the performance objective in § 61.41 of this part and occupational radiation exposure to ensure compliance with the requirements of part 20 of this chapter and to control contamination of personnel, vehicles, equipment, buildings, and the disposal site. Both routine operations and accidents must be addressed. The program description must include procedures, instrumentation, facilities, and equipment.

(l) A description of the environmental monitoring program to provide data to evaluate potential health and environmental impacts and the plan for taking corrective measures if migration of radionuclides is indicated.

(m) A description of the administrative procedures that the applicant will apply to control activities at the land disposal facility.

(n) A description of the facility electronic recordkeeping system as required in § 61.80.

[47 FR 57463, Dec. 27, 1982, as amended at 58 FR 33891, June 22, 1993; 60 FR 15666, Mar. 27, 1995]

§ 61.13 Technical analyses.

The specific technical information must also include the following analyses needed to demonstrate that the performance objectives of subpart C of this part will be met:

(a) Pathways analyzed in demonstrating protection of the general population from releases of radioactivity must include air, soil, groundwater, surface water, plant uptake, and exhumation by burrowing animals. The analyses must clearly identify and differentiate between the roles performed by the natural disposal site characteristics and design features in isolating and segregating the wastes. The analyses must clearly demonstrate that there is reasonable assurance that the exposure to humans from the release of radioactivity will not exceed the limits set forth in § 61.41.

(b) Analyses of the protection of individuals from inadvertent intrusion must include demonstration that there is reasonable assurance the waste classification and segregation requirements will be met and that adequate barriers to inadvertent intrusion will be provided.

(c) Analyses of the protection of individuals during operations must include assessments of expected exposures due to routine operations and likely accidents during handling, storage, and disposal of waste. The analyses must provide reasonable assurance that exposures will be controlled to meet the requirements of part 20 of this chapter.

(d) Analyses of the long-term stability of the disposal site and the need for ongoing active maintenance after closure must be based upon analyses of active natural processes such as erosion, mass wasting, slope failure, settlement of wastes and backfill, infiltration through covers over disposal areas and adjacent soils, and surface drainage of the disposal site. The analyses must provide reasonable assurance that there will not be a need for ongoing active maintenance of the disposal site following closure.

§ 61.14 Institutional information.

The institutional information must include:

(a) A certification by the Federal or State government which owns the disposal site that the Federal or State government is prepared to accept transfer of the license when the provisions of § 61.30 are met, and will assume responsibility for custodial care after site closure and postclosure observation and maintenance.

(b) Where the proposed disposal site is on land not owned by the Federal or a State government, the applicant must submit evidence that arrangements have been made for assumption

of ownership in fee by the Federal or a State government before the Commission issues a license.

§61.15 Financial information.

The financial information must be sufficient to demonstrate that the financial qualifications of the applicant are adequate to carry out the activities for which the license is sought and meet other financial assurance requirements as specified in subpart E of this part.

§61.16 Other information.

Depending upon the nature of the wastes to be disposed of, and the design and proposed operation of the land disposal facility, additional information may be requested by the Commission including the following:

(a) *Physical security measures, if appropriate.* Any application to receive and possess special nuclear material in quantities subject to the requirements of part 73 of this chapter shall demonstrate how the physical security requirements of part 73 will be met. In determining whether receipt and possession will be subject to the requirements of part 73, the applicant shall not consider the quantity of special nuclear material that has been disposed of.

(b) *Safety information concerning criticality, if appropriate.* (1) Any application to receive and possess special nuclear material in quantities that would be subject to the requirements of §70.24, ''Criticality accident requirements'' of part 70 of this chapter shall demonstrate how the requirements of that section will be met, unless the applicant requests an exemption pursuant to §70.24(d). In determining whether receipt and possession would be subject to the requirements of §70.24, the applicant shall not consider the quantity of special nuclear material that has been disposed of.

(2) Any application to receive and possess special nuclear material shall describe proposed procedures for avoiding accidental criticality, which address both storage of special nuclear material prior to disposal and waste emplacement for disposal.

§61.20 Filing and distribution of application.

(a) An application for a license under this part, and any amendments thereto, must be filed with the Director, must be signed by the applicant or the applicant's authorized representative under oath or affirmation, and, if the document is in paper form, must be the signed original.

(b) The applicant shall maintain the capability to generate additional copies of the application for distribution in accordance with written instructions from the Director or the Director's designee.

(c) *Fees.* Application, amendment, and inspection fees applicable to a license covering the receipt and disposal of radioactive wastes in a land disposal facility are required by part 170 of this chapter.

[47 FR 57463, Dec. 27, 1982, as amended at 49 FR 9405, Mar. 12, 1984; 68 FR 58814, Oct. 10, 2003]

§61.21 Elimination of repetition.

In its application, the applicant may incorporate by reference information contained in previous applications, statements, or reports filed with the Commission if these references are clear and specific.

[49 FR 9405, Mar. 12, 1984]

§61.22 Updating of application.

(a) The application must be as complete as possible in the light of information that is available at the time of submittal.

(b) The applicant shall supplement its application in a timely manner, as necessary, to permit the Commission to review, prior to issuance of a license, any changes in the activities proposed to be carried out or new information regarding the proposed activities.

[49 FR 9405, Mar. 12, 1984]

§61.23 Standards for issuance of a license.

A license for the receipt, possession, and disposal of waste containing or contaminated with source, special nuclear, or byproduct material will be issued by the Commission upon finding that the issuance of the license will not

be inimical to the common defense and security and will not constitute an unreasonable risk to the health and safety of the public, and:

(a) The applicant is qualified by reason of training and experience to carry out the disposal operations requested in a manner that protects health and minimizes danger to life or property.

(b) The applicant's proposed disposal site, disposal design, land disposal facility operations (including equipment, facilities, and procedures), disposal site closure, and postclosure institutional control are adequate to protect the public health and safety in that they provide reasonable assurance that the general population will be protected from releases of radioactivity as specified in the performance objective in § 61.41, Protection of the general population from releases of radioactivity.

(c) The applicant's proposed disposal site, disposal site design, land disposal facility operations (including equipment, facilities, and procedures), disposal site closure, and postclosure institutional control are adequate to protect the public health and safety in that they will provide reasonable assurance that individual inadvertent intruders are protected in accordance with the performance objective in § 61.42, Protection of individuals from inadvertent intrusion.

(d) The applicant's proposed land disposal facility operations, including equipment, facilities, and procedures, are adequate to protect the public health and safety in that they will provide reasonable assurance that the standards for radiation protection set out in part 20 of this chapter will be met.

(e) The applicant's proposed disposal site, disposal site design, land disposal facility operations, disposal site closure, and postclosure institutional control are adequate to protect the public health and safety in that they will provide reasonable assurance that long-term stability of the disposed waste and the disposal site will be achieved and will eliminate to the extent practicable the need for ongoing active maintenance of the disposal site following closure.

(f) The applicant's demonstration provides reasonable assurance that the applicable technical requirements of subpart D of this part will be met.

(g) The applicant's proposal for institutional control provides reasonable assurance that institutional control will be provided for the length of time found necessary to ensure the findings in paragraphs (b) through (e) of this section and that the institutional control meets the requirements of § 61.59, Institutional requirements.

(h) The information on financial assurances meets the requirements of subpart E of this part.

(i) The applicant's physical security information provides reasonable assurance that the requirements of part 73 of this chapter will be met, insofar as they are applicable to special nuclear material to be possessed before disposal under the license.

(j) The applicant's criticality safety procedures are adequate to protect the public health and safety and provide reasonable assurance that the requirements of § 70.24, Criticality accident requirements, of part 70 of this chapter will be met, insofar as they are applicable to special nuclear material to be possessed before disposal under the license.

(k) Any additional information submitted as requested by the Commission pursuant to § 61.16, Other information, is adequate.

(l) The requirements of subpart A of part 51 of this chapter have been met.

[47 FR 57463, Dec. 27, 1982, as amended at 49 FR 9405, Mar. 12, 1984]

§ 61.24 Conditions of licenses.

(a) A license issued under this part, or any right thereunder, may be transferred, assigned, or in any manner disposed of, either voluntarily or involuntarily, directly or indirectly, through transfer of control of the license to any person, only if the Commission finds, after securing full information, that the transfer is in accordance with the provisions of the Atomic Energy Act and gives its consent in writing in the form of a license amendment.

(b) The licensee shall submit written statements under oath upon request of the Commission, at any time before termination of the license, to enable the Commission to determine whether

or not the license should be modified, suspended, or revoked.

(c) The license will be transferred to the site owner only on the full implementation of the final closure plan as approved by the Commission, including post-closure observation and maintenance.

(d) The licensee shall be subject to the provisions of the Atomic Energy Act now or hereafter in effect, and to all rules, regulations, and orders of the Commission. The terms and conditions of the license are subject to amendment, revision, or modification, by reason of amendments to, or by reason of rules, regulations, and orders issued in accordance with the terms of the Atomic Energy Act.

(e) Any license may be revoked, suspended or modified in whole or in part for any material false statement in the application or any statement of fact required under Section 182 of the Act, or because of conditions revealed by any application or statement of fact or any report, record, or inspection or other means which would warrant the Commission to refuse to grant a license to the original application, or for failure to operate the facility in accordance with the terms of the license, or for any violation of, or failure to observe any of the terms and conditions of the Act, or any rule, regulation, license or order of the Commission.

(f) Each person licensed by the Commission pursuant to the regulations in this part shall confine possession and use of materials to the locations and purposes authorized in the license.

(g) No radioactive waste may be disposed of until the Commission has inspected the land disposal facility and has found it to be in conformance with the description, design, and construction described in the application for a license.

(h) The Commission may incorporate in any license at the time of issuance, or thereafter, by appropriate rule, regulation or order, additional requirements and conditions with respect to the licensee's receipt, possession, and disposal of source, special nuclear or byproduct material as it deems appropriate or necessary in order to:

(1) Promote the common defense and security;

(2) Protect health or to minimize danger to life or property;

(3) Require reports and the keeping of records, and to provide for inspections of activities under the license that may be necessary or appropriate to effectuate the purposes of the Act and regulations thereunder.

(i) Any licensee who receives and possesses special nuclear material under this part in quantities that would be subject to the requirements of §70.24 of part 70 of this chapter shall comply with the requirements of that section. The licensee shall not consider the quantity of special nuclear material that has been disposed of.

(j) The authority to dispose of wastes expires on the date stated in the license except as provided in §61.27(a) of this part.

(k)(1) Each licensee shall notify the appropriate NRC Regional Administrator, in writing, immediately following the filing of a voluntary or involuntary petition for bankruptcy under any Chapter of Title 11 (Bankruptcy) of the United States Code by or against:

(i) The licensee;

(ii) An entity (as that term is defined in 11 U.S.C. 101(14)) controlling the licensee or listing the license or licensee as property of the estate; or

(iii) An affiliate (as that term is defined in 11 U.S.C. 101(2)) of the licensee.

(2) This notification must indicate:

(i) The bankruptcy court in which the petition for bankruptcy was filed; and

(ii) The date of the filing of the petition.

[47 FR 57463, Dec. 27, 1982, as amended at 52 FR 1295, Jan. 12, 1987]

§61.25 Changes.

(a) Except as provided for in specific license conditions, the licensee shall not make changes in the land disposal facility or procedures described in the license application. The license will include conditions restricting subsequent changes to the facility and the procedures authorized which are important to public health and safety. These license restrictions will fall into three categories of descending importance to public health and safety as follows: (1) those features and procedures which

may not be changed without (i) 60 days prior notice to the Commission, (ii) 30 days notice of opportunity for a prior hearing, and (iii) prior Commission approval; (2) those features and procedures which may not be changed without (i) 60 days prior notice to the Commisson, and (ii) prior Commission approval; and (3) those features and procedures which may not be changed without 60 days prior notice to the Commission. Features and procedures falling in paragraph (a)(3) of this section may not be changed without prior Commission approval if the Commission, after having received the required notice, so orders.

(b) Amendments authorizing site closure, license transfer, or license termination shall be included in paragraph (a)(1) of this section.

(c) The Commission shall provide a copy of the notices of opportunity for hearing provided in paragraph (a)(1) of this section to State and local officials or tribal governing bodies specified in § 2.104(c) of this chapter.

[47 FR 57463, Dec. 27, 1982, as amended at 77 FR 46600, Aug. 3, 2012]

§ 61.26 Amendment of license.

(a) An application for amendment of a license must be filed in accordance with § 61.20 and shall fully describe the changes desired.

(b) In determining whether an amendment to a license will be approved, the Commission will apply the criteria set forth in § 61.23.

§ 61.27 Application for renewal or closure.

(a) Any expiration date on a license applies only to the above ground activities and to the authority to dispose of waste. Failure to renew the license shall not relieve the licensee of responsibility for carrying out site closure, postclosure observation and transfer of the license to the site owner. An application for renewal or an application for closure under § 61.28 must be filed at least 30 days prior to license expiration.

(b) Applications for renewal of a license must be filed in accordance with §§ 61.10 through 61.16 and § 61.20. Applications for closure must be filed in accordance with §§ 61.20 and 61.28. Information contained in previous applications, statements or reports filed with the Commission under the license may be incorporated by reference if the references are clear and specific.

(c) In any case in which a licensee has timely filed an application for renewal of a license, the license for continued receipt and disposal of licensed materials does not expire until the Commission has taken final action on the application for renewal.

(d) In determining whether a license will be renewed, the Commission will apply the criteria set forth in § 61.23.

§ 61.28 Contents of application for closure.

(a) Prior to final closure of the disposal site, or as otherwise directed by the Commission, the applicant shall submit an application to amend the license for closure. This closure application must include a final revision and specific details of the disposal site closure plan included as part of the license application submitted under § 61.12(g) that includes each of the following:

(1) Any additional geologic, hydrologic, or other disposal site data pertinent to the long-term containment of emplaced radioactive wastes obtained during the operational period.

(2) The results of tests, experiments, or any other analyses relating to backfill of excavated areas, closure and sealing, waste migration and interaction with emplacement media, or any other tests, experiments, or analysis pertinent to the long-term containment of emplaced waste within the disposal site.

(3) Any proposed revision of plans for:

(i) Decontamination and/or dismantlement of surface facilities;

(ii) Backfilling of excavated areas; or

(iii) Stabilization of the disposal site for post-closure care.

(b) An environmental report or a supplement to an environmental report prepared in accordance with subpart A of part 51 of this chapter must accompany the application.

(c) Upon review and consideration of an application to amend the license for closure submitted in accordance with

paragraph (a) of this section, the Commission shall issue an amendment authorizing closure if there is reasonable assurance that the long-term performance objectives of subpart C of this part will be met.

[47 FR 57463, Dec. 27, 1982, as amended at 49 FR 9406, Mar. 12, 1984]

§61.29 Post-closure observation and maintenance.

Following completion of closure authorized in §61.28, the licensee shall observe, monitor, and carry out necessary maintenance and repairs at the disposal site until the license is transferred by the Commission in accordance with §61.30. Responsibility for the disposal site must be maintained by the licensee for 5 years. A shorter or longer time period for post-closure observation and maintenance may be established and approved as part of the site closure plan, based on site-specific conditions.

§61.30 Transfer of license.

(a) Following closure and the period of post-closure observation and maintenance, the licensee may apply for an amendment to transfer the license to the disposal site owner. The license shall be transferred when the Commission finds:

(1) That the closure of the disposal site has been made in conformance with the licensee's disposal site closure plan, as amended and approved as part of the license;

(2) That reasonable assurance has been provided by the licensee that the performance objectives of subpart C of this part are met;

(3) That any funds for care and records required by §61.80 (e) and (f) have been transferred to the disposal site owner;

(4) That the post-closure monitoring program is operational for implementation by the disposal site owner; and

(5) That the Federal or State government agency which will assume responsibility for institutional control of the disposal site is prepared to assume responsibility and ensure that the institutional requirements found necessary under §61.23(g) will be met.

[47 FR 57463, Dec. 27, 1982, as amended at 61 FR 24674, May 16, 1996]

§61.31 Termination of license.

(a) Following any period of institutional control needed to meet the requirements found necessary under §61.23, the licensee may apply for an amendment to terminate the license.

(b) This application must be filed, and will be reviewed, in accordance with the provision of §61.20 and of this section.

(c) A license is terminated only when the Commission finds:

(1) That the institutional control requirements found necessary under §61.23(g) have been met; and

(2) That any additional requirements resulting from new information developed during the institutional control period have been met, and that permanent monuments or markers warning against intrusion have been installed.

(3) That the records required by §61.80 (e) and (f) have been sent to the party responsible for institutional control of the disposal site and a copy has been sent to the Commission immediately prior to license termination.

[47 FR 57463, Dec. 27, 1982, as amended at 61 FR 24674, May 16, 1996]

US/IAEA Safeguards Agreement

§61.32 Facility information and verification.

(a) In response to a written request by the Commission, each applicant for a license and each recipient of a license shall submit facility information, as described in §75.10 of this chapter, on IAEA Design Information Questionnaire forms and site information on DOC/NRC Form AP–A, and associated forms;

(b) As required by the Additional Protocol, applicants and licensees specified in paragraph (a) of this section shall submit location information described in §75.11 of this chapter on DOC/NRC Form AP–1 and associated forms; and

(c) Shall permit verification thereof by the International Atomic Energy Agency (IAEA) and take other action as necessary to implement the US/

IAEA Safeguards Agreement, as described in Part 75 of this chapter.

[73 FR 78606, Dec. 23, 2008, as amended at 85 FR 65663, Oct. 16, 2020]]

Subpart C—Performance Objectives

§ 61.40 General requirement.

Land disposal facilities must be sited, designed, operated, closed, and controlled after closure so that reasonable assurance exists that exposures to humans are within the limits established in the performance objectives in §§ 61.41 through 61.44.

§ 61.41 Protection of the general population from releases of radioactivity.

Concentrations of radioactive material which may be released to the general environment in groundwater, surface water, air, soil, plants, or animals must not result in an annual dose exceeding an equivalent of 25 millirems to the whole body, 75 millirems to the thyroid, and 25 millirems to any other organ of any member of the public. Reasonable effort should be made to maintain releases of radioactivity in effluents to the general environment as low as is reasonably achievable.

§ 61.42 Protection of individuals from inadvertent intrusion.

Design, operation, and closure of the land disposal facility must ensure protection of any individual inadvertently intruding into the disposal site and occupying the site or contacting the waste at any time after active institutional controls over the disposal site are removed.

§ 61.43 Protection of individuals during operations.

Operations at the land disposal facility must be conducted in compliance with the standards for radiation protection set out in part 20 of this chapter, except for releases of radioactivity in effluents from the land disposal facility, which shall be governed by § 61.41 of this part. Every reasonable effort shall be made to maintain radiation exposures as low as is reasonably achievable.

§ 61.44 Stability of the disposal site after closure.

The disposal facility must be sited, designed, used, operated, and closed to achieve long-term stability of the disposal site and to eliminate to the extent practicable the need for ongoing active maintenance of the disposal site following closure so that only surveillance, monitoring, or minor custodial care are required.

Subpart D—Technical Requirements for Land Disposal Facilities

§ 61.50 Disposal site suitability requirements for land disposal.

(a) *Disposal site suitability for near-surface disposal.* (1) The purpose of this section is to specify the minimum characteristics a disposal site must have to be acceptable for use as a near-surface disposal facility. The primary emphasis in disposal site suitability is given to isolation of wastes, a matter having long-term impacts, and to disposal site features that ensure that the long-term performance objectives of subpart C of this part are met, as opposed to short-term convenience or benefits.

(2) The disposal site shall be capable of being characterized, modeled, analyzed and monitored.

(3) Within the region or state where the facility is to be located, a disposal site should be selected so that projected population growth and future developments are not likely to affect the ability of the disposal facility to meet the performance objectives of subpart C of this part.

(4) Areas must be avoided having known natural resources which, if exploited, would result in failure to meet the performance objectives of subpart C of this part.

(5) The disposal site must be generally well drained and free of areas of flooding or frequent ponding. Waste disposal shall not take place in a 100-year flood plain, coastal high-hazard area or wetland, as defined in Executive Order 11988, ''Floodplain Management Guidelines.''

(6) Upstream drainage areas must be minimized to decrease the amount of

runoff which could erode or inundate waste disposal units.

(7) The disposal site must provide sufficient depth to the water table that groundwater intrusion, perennial or otherwise, into the waste will not occur. The Commission will consider an exception to this requirement to allow disposal below the water table if it can be conclusively shown that disposal site characteristics will result in molecular diffusion being the predominant means of radionuclide movement and the rate of movement will result in the performance objectives of subpart C of this part being met. In no case will waste disposal be permitted in the zone of fluctuation of the water table.

(8) The hydrogeologic unit used for disposal shall not discharge groundwater to the surface within the disposal site.

(9) Areas must be avoided where tectonic processes such as faulting, folding, seismic activity, or vulcanism may occur with such frequency and extent to significantly affect the ability of the disposal site to meet the performance objectives of subpart C of this part, or may preclude defensible modeling and prediction of long-term impacts.

(10) Areas must be avoided where surface geologic processes such as mass wasting, erosion, slumping, landsliding, or weathering occur with such frequency and extent to significantly affect the ability of the disposal site to meet the performance objectives of subpart C of this part, or may preclude defensible modeling and prediction of long-term impacts.

(11) The disposal site must not be located where nearby facilities or activities could adversely impact the ability of the site to meet the performance objectives of subpart C of this part or significantly mask the environmental monitoring program.

(b) *Disposal site suitability requirements for land disposal other than near-surface.* [Reserved]

§61.51 Disposal site design for land disposal.

(a) *Disposal site design for near-surface disposal.* (1) Site design features must be directed toward long-term isolation and avoidance of the need for continuing active maintenance after site closure.

(2) The disposal site design and operation must be compatible with the disposal site closure and stabilization plan and lead to disposal site closure that provides reasonable assurance that the performance objectives of subpart C of this part will be met.

(3) The disposal site must be designed to complement and improve, where appropriate, the ability of the disposal site's natural characteristics to assure that the performance objectives of subpart C of this part will be met.

(4) Covers must be designed to minimize to the extent practicable water infiltration, to direct percolating or surface water away from the disposed waste, and to resist degradation by surface geologic processes and biotic activity.

(5) Surface features must direct surface water drainage away from disposal units at velocities and gradients which will not result in erosion that will require ongoing active maintenance in the future.

(6) The disposal site must be designed to minimize to the extent practicable the contact of water with waste during storage, the contact of standing water with waste during disposal, and the contact of percolating or standing water with wastes after disposal.

(b) *Disposal site design for other than near-surface disposal.* [Reserved]

§61.52 Land disposal facility operation and disposal site closure.

(a) *Near-surface disposal facility operation and disposal site closure.* (1) Wastes designated as Class A pursuant to §61.55, must be segregated from other wastes by placing in disposal units which are sufficiently separated from disposal units for the other waste classes so that any interaction between Class A wastes and other wastes will not result in the failure to meet the performance objectives in subpart C of this Part. This segregation is not necessary for Class A wastes if they meet the stability requirements in §61.56(b) of this part.

(2) Wastes designated as Class C pursuant to §61.55, must be disposed of so that the top of the waste is a minimum of 5 meters below the top surface of the

cover or must be disposed of with intruder barriers that are designed to protect against an inadvertent intrusion for a least 500 years.

(3) All wastes shall be disposed of in accordance with the requirements of paragraphs (a) (4) through (11) of this section.

(4) Wastes must be emplaced in a manner that maintains the package integrity during emplacement, minimizes the void spaces between packages, and permits the void spaces to be filled.

(5) Void spaces between waste packages must be filled with earth or other material to reduce future subsidence within the fill.

(6) Waste must be placed and covered in a manner that limits the radiation dose rate at the surface of the cover to levels that at a minimum will permit the licensee to comply with all provisions of §§ 20.1301 and 20.1302 of this chapter at the time the license is transferred pursuant to § 61.30 of this part.

(7) The boundaries and locations of each disposal unit (e.g., trenches) must be accurately located and mapped by means of a land survey. Near-surface disposal units must be marked in such a way that the boundaries of each unit can be easily defined. Three permanent survey marker control points, referenced to United States Geological Survey (USGS) or National Geodetic Survey (NGS) survey control stations, must be established on the site to facilitate surveys. The USGS or NGS control stations must provide horizontal and vertical controls as checked against USGS or NGS record files.

(8) A buffer zone of land must be maintained between any buried waste and the disposal site boundary and beneath the disposed waste. The buffer zone shall be of adequate dimensions to carry out environmental monitoring activities specified in § 61.53(d) of this part and take mitigative measures if needed.

(9) Closure and stabilization measures as set forth in the approved site closure plan must be carried out as each disposal unit (e.g., each trench) is filled and covered.

(10) Active waste disposal operations must not have an adverse effect on completed closure and stabilization measures.

(11) Only wastes containing or contaminated with radioactive materials shall be disposed of at the disposal site.

(b) *Facility operation and disposal site closure for land disposal facilities other than near-surface.* [Reserved]

[47 FR 57463, Dec. 27, 1982, as amended at 56 FR 23474, May 21, 1991; 56 FR 61352, Dec. 3, 1991; 58 FR 67662, Dec. 22, 1993]

§ 61.53 Environmental monitoring.

(a) At the time a license application is submitted, the applicant shall have conducted a preoperational monitoring program to provide basic environmental data on the disposal site characteristics. The applicant shall obtain information about the ecology, meteorology, climate, hydrology, geology, geochemistry, and seismology of the disposal site. For those characteristics that are subject to seasonal variation, data must cover at least a twelve month period.

(b) The licensee must have plans for taking corrective measures if migration of radionuclides would indicate that the performance objectives of subpart C may not be met.

(c) During the land disposal facility site construction and operation, the licensee shall maintain a monitoring program. Measurements and observations must be made and recorded to provide data to evaluate the potential health and environmental impacts during both the construction and the operation of the facility and to enable the evaluation of long-term effects and the need for mitigative measures. The monitoring system must be capable of providing early warning of releases of radionuclides from the disposal site before they leave the site boundary.

(d) After the disposal site is closed, the licensee responsible for post-operational surveillance of the disposal site shall maintain a monitoring system based on the operating history and the closure and stabilization of the disposal site. The monitoring system must be capable of providing early warning of releases of radionuclides from the disposal site before they leave the site boundary.

§61.54 Alternative requirements for design and operations.

The Commission may, upon request or on its own initiative, authorize provisions other than those set forth in §§61.51 through 61.53 for the segregation and disposal of waste and for the design and operation of a land disposal facility on a specific basis, if it finds reasonable assurance of compliance with the performance objectives of subpart C of this part.

§61.55 Waste classification.

(a) *Classification of waste for near surface disposal*—(1) *Considerations*. Determination of the classification of radioactive waste involves two considerations. First, consideration must be given to the concentration of long-lived radionuclides (and their shorter-lived precursors) whose potential hazard will persist long after such precautions as institutional controls, improved waste form, and deeper disposal have ceased to be effective. These precautions delay the time when long-lived radionuclides could cause exposures. In addition, the magnitude of the potential dose is limited by the concentration and availability of the radionuclide at the time of exposure. Second, consideration must be given to the concentration of shorter-lived radionuclides for which requirements on institutional controls, waste form, and disposal methods are effective.

(2) *Classes of waste*. (i) Class A waste is waste that is usually segregated from other waste classes at the disposal site. The physical form and characteristics of Class A waste must meet the minimum requirements set forth in §61.56(a). If Class A waste also meets the stability requirements set forth in §61.56(b), it is not necessary to segregate the waste for disposal.

(ii) Class B waste is waste that must meet more rigorous requirements on waste form to ensure stability after disposal. The physical form and characteristics of Class B waste must meet both the minimum and stability requirements set forth in §61.56.

(iii) Class C waste is waste that not only must meet more rigorous requirements on waste form to ensure stability but also requires additional measures at the disposal facility to protect against inadvertent intrusion. The physical form and characteristics of Class C waste must meet both the minimum and stability requirements set forth in §61.56.

(iv) Waste that is not generally acceptable for near-surface disposal is waste for which form and disposal methods must be different, and in general more stringent, than those specified for Class C waste. In the absence of specific requirements in this part, such waste must be disposed of in a geologic repository as defined in part 60 or 63 of this chapter unless proposals for disposal of such waste in a disposal site licensed pursuant to this part are approved by the Commission.

(3) *Classification determined by long-lived radionuclides*. If radioactive waste contains only radionuclides listed in Table 1, classification shall be determined as follows:

(i) If the concentration does not exceed 0.1 times the value in Table 1, the waste is Class A.

(ii) If the concentration exceeds 0.1 times the value in Table 1 but does not exceed the value in Table 1, the waste is Class C.

(iii) If the concentration exceeds the value in Table 1, the waste is not generally acceptable for near-surface disposal.

(iv) For wastes containing mixtures of radionuclides listed in Table 1, the total concentration shall be determined by the sum of fractions rule described in paragraph (a)(7) of this section.

TABLE 1

Radionuclide	Concentration curies per cubic meter
C–14	8
C–14 in activated metal	80
Ni–59 in activated metal	220
Nb–94 in activated metal	0.2
Tc–99	3
I–129	0.08
Alpha emitting transuranic nuclides with half-life greater than 5 years	[1] 100
Pu–241	[1] 3,500
Cm–242	[1] 20,000

[1] Units are nanocuries per gram.

(4) *Classification determined by short-lived radionuclides*. If radioactive waste does not contain any of the radionuclides listed in Table 1, classification

shall be determined based on the concentrations shown in Table 2. However, as specified in paragraph (a)(6) of this section, if radioactive waste does not contain any nuclides listed in either Table 1 or 2, it is Class A.

(i) If the concentration does not exceed the value in Column 1, the waste is Class A.

(ii) If the concentration exceeds the value in Column 1, but does not exceed the value in Column 2, the waste is Class B.

(iii) If the concentration exceeds the value in Column 2, but does not exceed the value in Column 3, the waste is Class C.

(iv) If the concentration exceeds the value in Column 3, the waste is not generally acceptable for near-surface disposal.

(v) For wastes containing mixtures of the nuclides listed in Table 2, the total concentration shall be determined by the sum of fractions rule described in paragraph (a)(7) of this section.

TABLE 2

Radionuclide	Concentration, curies per cubic meter		
	Col. 1	Col. 2	Col. 3
Total of all nuclides with less than 5 year half-life	700	(1)	(1)
H–3	40	(1)	(1)
Co–60	700	(1)	(1)
Ni–63	3.5	70	700
Ni–63 in activated metal	35	700	7000
Sr–90	0.04	150	7000
Cs–137	1	44	4600

[1] There are no limits established for these radionuclides in Class B or C wastes. Practical considerations such as the effects of external radiation and internal heat generation on transportation, handling, and disposal will limit the concentrations for these wastes. These wastes shall be Class B unless the concentrations of other nuclides in Table 2 determine the waste to be Class C independent of these nuclides.

(5) *Classification determined by both long- and short-lived radionuclides.* If radioactive waste contains a mixture of radionuclides, some of which are listed in Table 1, and some of which are listed in Table 2, classification shall be determined as follows:

(i) If the concentration of a nuclide listed in Table 1 does not exceed 0.1 times the value listed in Table 1, the class shall be that determined by the concentration of nuclides listed in Table 2.

(ii) If the concentration of a nuclide listed in Table 1 exceeds 0.1 times the value listed in Table 1 but does not exceed the value in Table 1, the waste shall be Class C, provided the concentration of nuclides listed in Table 2 does not exceed the value shown in Column 3 of Table 2.

(6) *Classification of wastes with radionuclides other than those listed in Tables 1 and 2.* If radioactive waste does not contain any nuclides listed in either Table 1 or 2, it is Class A.

(7) *The sum of the fractions rule for mixtures of radionuclides.* For determining classification for waste that contains a mixture of radionuclides, it is necessary to determine the sum of fractions by dividing each nuclide's concentration by the appropriate limit and adding the resulting values. The appropriate limits must all be taken from the same column of the same table. The sum of the fractions for the column must be less than 1.0 if the waste class is to be determined by that column. Example: A waste contains Sr-90 in a concentration of 50 Ci/m^3 and Cs-137 in a concentration of 22 Ci/m^3. Since the concentrations both exceed the values in Column 1, Table 2, they must be compared to Column 2 values. For Sr-90 fraction 50/150 = 0.33; for Cs-137 fraction, 22/44 = 0.5; the sum of the fractions = 0.83. Since the sum is less than 1.0, the waste is Class B.

(8) *Determination of concentrations in wastes.* The concentration of a radionuclide may be determined by indirect methods such as use of scaling factors which relate the inferred concentration of one radionuclide to another that is measured, or radionuclide material accountability, if there is reasonable assurance that the indirect methods can be correlated with actual measurements. The concentration of a radionuclide may be averaged over the volume of the waste, or weight of the waste if the units are expressed as nanocuries per gram.

[47 FR 57463, Dec. 27, 1982, as amended at 54 FR 22583, May 25, 1989; 66 FR 55792, Nov. 2, 2001]

§ 61.56 Waste characteristics.

(a) The following requirements are minimum requirements for all classes of waste and are intended to facilitate

handling at the disposal site and provide protection of health and safety of personnel at the disposal site.

(1) Waste must not be packaged for disposal in cardboard or fiberboard boxes.

(2) Liquid waste must be solidified or packaged in sufficient absorbent material to absorb twice the volume of the liquid.

(3) Solid waste containing liquid shall contain as little free standing and noncorrosive liquid as is reasonably achievable, but in no case shall the liquid exceed 1% of the volume.

(4) Waste must not be readily capable of detonation or of explosive decomposition or reaction at normal pressures and temperatures, or of explosive reaction with water.

(5) Waste must not contain, or be capable of generating, quantities of toxic gases, vapors, or fumes harmful to persons transporting, handling, or disposing of the waste. This does not apply to radioactive gaseous waste packaged in accordance with paragraph (a)(7) of this section.

(6) Waste must not be pyrophoric. Pyrophoric materials contained in waste shall be treated, prepared, and packaged to be nonflammable.

(7) Waste in a gaseous form must be packaged at a pressure that does not exceed 1.5 atmospheres at 20 °C. Total activity must not exceed 100 curies per container.

(8) Waste containing hazardous, biological, pathogenic, or infectious material must be treated to reduce to the maximum extent practicable the potential hazard from the non-radiological materials.

(b) The requirements in this section are intended to provide stability of the waste. Stability is intended to ensure that the waste does not structurally degrade and affect overall stability of the site through slumping, collapse, or other failure of the disposal unit and thereby lead to water infiltration. Stability is also a factor in limiting exposure to an inadvertent intruder, since it provides a recognizable and nondispersible waste.

(1) Waste must have structural stability. A structurally stable waste form will generally maintain its physical dimensions and its form, under the expected disposal conditions such as weight of overburden and compaction equipment, the presence of moisture, and microbial activity, and internal factors such as radiation effects and chemical changes. Structural stability can be provided by the waste form itself, processing the waste to a stable form, or placing the waste in a disposal container or structure that provides stability after disposal.

(2) Notwithstanding the provisions in §61.56(a) (2) and (3), liquid wastes, or wastes containing liquid, must be converted into a form that contains as little free standing and noncorrosive liquid as is reasonably achievable, but in no case shall the liquid exceed 1% of the volume of the waste when the waste is in a disposal container designed to ensure stability, or 0.5% of the volume of the waste for waste processed to a stable form.

(3) Void spaces within the waste and between the waste and its package must be reduced to the extent practicable.

§61.57 Labeling.

Each package of waste must be clearly labeled to identify whether it is Class A waste, Class B waste, or Class C waste, in accordance with §61.55.

§61.58 Alternative requirements for waste classification and characteristics.

The Commission may, upon request or on its own initiative, authorize other provisions for the classification and characteristics of waste on a specific basis, if, after evaluation, of the specific characteristics of the waste, disposal site, and method of disposal, it finds reasonable assurance of compliance with the performance objectives in subpart C of this part.

§61.59 Institutional requirements.

(a) *Land ownership.* Disposal of radioactive waste received from other persons may be permitted only on land owned in fee by the Federal or a State government.

(b) *Institutional control.* The land owner or custodial agency shall carry out an institutional control program to physically control access to the disposal site following transfer of control

of the disposal site from the disposal site operator. The institutional control program must also include, but not be limited to, carrying out an environmental monitoring program at the disposal site, periodic surveillance, minor custodial care, and other requirements as determined by the Commission; and administration of funds to cover the costs for these activities. The period of institutional controls will be determined by the Commission, but institutional controls may not be relied upon for more than 100 years following transfer of control of the disposal site to the owner.

Subpart E—Financial Assurances

§ 61.61 Applicant qualifications and assurances.

Each applicant shall show that it either possesses the necessary funds or has reasonable assurance of obtaining the necessary funds, or by a combination of the two, to cover the estimated costs of conducting all licensed activities over the planned operating life of the project, including costs of construction and disposal.

§ 61.62 Funding for disposal site closure and stabilization.

(a) The applicant shall provide assurance that sufficient funds will be available to carry out disposal site closure and stabilization, including: (1) Decontamination or dismantlement of land disposal facility structures; and (2) closure and stabilization of the disposal site so that following transfer of the disposal site to the site owner, the need for ongoing active maintenance is eliminated to the extent practicable and only minor custodial care, surveillance, and monitoring are required. These assurances shall be based on Commission-approved cost estimates reflecting the Commission-approved plan for disposal site closure and stabilization. The applicant's cost estimates must take into account total capital costs that would be incurred if an independent contractor were hired to perform the closure and stabilization work.

(b) In order to avoid unnecessary duplication and expense, the Commission will accept financial sureties that have been consolidated with earmarked financial or surety arrangements established to meet requirements of other Federal or State agencies and/or local governing bodies for such decontamination, closure and stabilization. The Commission will accept this arrangement only if they are considered adequate to satisfy these requirements and that the portion of the surety which covers the closure of the disposal site is clearly identified and committed for use in accomplishing these activities.

(c) The licensee's surety mechanism will be annually reviewed by the Commission to assure that sufficient funds are available for completion of the closure plan, assuming that the work has to be performed by an independent contractor.

(d) The amount of surety liability should change in accordance with the predicted cost of future closure and stabilization. Factors affecting closure and stabilization cost estimates include: inflation; increases in the amount of disturbed land; changes in engineering plans; closure and stabilization that has already been accomplished and any other conditions affecting costs. This will yield a surety that is at least sufficient at all times to cover the costs of closure of the disposal units that are expected to be used before the next license renewal.

(e) The term of the surety mechanism must be open ended unless it can be demonstrated that another arrangement would provide an equivalent level of assurance. This assurance could be provided with a surety mechanism which is written for a specified period of time (e.g., five years) yet which must be automatically renewed unless the party who issues the surety notifies the Commission and the beneficiary (the site owner) and the principal (the licensee) not less than 90 days prior to the renewal date of its intention not to renew. In such a situation the licensee must submit a replacement surety within 30 days after notification of cancellation. If the licensee fails to provide a replacement surety acceptable to the Commission, the site owner may collect on the original surety.

(f) Proof of forfeiture must not be necessary to collect the surety so that in the event that the licensee could not provide an acceptable replacement surety within the required time, the surety shall be automatically collected prior to its expiration. The conditions described above would have to be clearly stated on any surety instrument which is not open-ended, and must be agreed to by all parties. Liability under the surety mechanism must remain in effect until the closure and stabilization program has been completed and approved by the Commission and the license has been transferred to the site owner.

(g) Financial surety arrangements generally acceptable to the Commission include: surety bonds, cash deposits, certificates of deposits, deposits of government securities, escrow accounts, irrevocable letters or lines of credit, trust funds, and combinations of the above or such other types of arrangements as may be approved by the Commission. However, self-insurance, or any arrangement which essentially constitutes pledging the assets of the licensee, will not satisfy the surety requirement for private sector applicants since this provides no additional assurance other than that which already exists through license requirements.

§61.63 Financial assurances for institutional controls.

(a) Prior to the issuance of the license, the applicant shall provide for Commission review and approval a copy of a binding arrangement, such as a lease, between the applicant and the disposal site owner that ensures that sufficient funds will be available to cover the costs of monitoring and any required maintenance during the institutional control period. The binding arrangement will be reviewed periodically by the Commission to ensure that changes in inflation, technology and disposal facility operations are reflected in the arrangements.

(b) Subsequent changes to the binding arrangement specified in paragraph (a) of this section relevant to institutional control shall be submitted to the Commission for approval.

Subpart F—Participation by State Governments and Indian Tribes

§61.70 Scope.

This subpart describes mechanisms through which the Commission will implement a formal request from a State or tribal government to participate in the review of a license application for a land disposal facility. Nothing in this subpart may be construed to bar the State or tribal governing body from participating in subsequent Commission proceedings concerning the license application as provided under Federal law and regulations.

§61.71 State and Tribal government consultation.

Upon request of a State or tribal governing body, the Director shall make available Commission staff to discuss with representatives of the State or tribal governing body information submitted by the applicant, applicable Commission regulations, licensing procedures, potential schedules, and the type and scope of State activities in the license review permitted by law. In addition, staff shall be made available to consult and cooperate with the State or tribal governing body in developing proposals for participation in the license review.

§61.72 Filing of proposals for State and Tribal participation.

(a) A State or tribal governing body whose interest is affected by a near-surface disposal facility at the proposed site may submit to the Director a proposal for participation in the review of a license application. Proposals must be submitted within the following time periods:

(1) For the State in which the disposal facility will be located, or any State that is member of an interstate compact that includes the State in which the disposal facility is located, no later than 45 days following publication in the FEDERAL REGISTER of the notice of tendering of an application submitted under §61.20.

(2) For any other State, or for a tribal governing body, no later than 120

days following publication in the FEDERAL REGISTER of the notice of tendering of an application submitted under § 61.20.

(b) Proposals for participation in the licensing process must be made in writing and must be signed by the Governor of the State or the official otherwise provided for by State or tribal law.

(c) At a minimum, proposals must contain each of the following items of information:

(1) A general description of how the State or Tribe wishes to participate in the licensing process specifically identifying those issues it wishes to review.

(2) A description of material and information which the State or Tribe plans to submit to the Commission for consideration in the licensing process. A tentative schedule referencing steps in the review and calendar dates for planned submittals should be included.

(3) A description of any work that the State or Tribe proposes to perform for the Commission in support of the licensing process.

(4) A description of State or Tribal plans to facilitate local government and citizen participation.

(5) A preliminary estimate of the types and extent of impacts which the State expects, should a disposal facility be located as proposed.

(6) If desired, any requests for educational or information services (seminars, public meetings) or other actions from the Commission such as establishment of additional Public Document Rooms or exchange of State personnel under the Intergovernmental Personnel Act.

§ 61.73 Commission approval of proposals.

(a) Upon receipt of a proposal submitted in accordance with § 61.72, the Director shall arrange for a meeting between the representatives of the State or Tribal governing body and the Commission staff to discuss the proposal and to ensure full and effective participation by the State or Tribe in the Commission's license review.

(b) If requested by a State or Tribal governing body, the Director may approve all or any part of a proposal if the Director determines that:

(1) The proposed activities are within the scope of Commission statutory responsibility and the type and magnitude of impacts which the State or Tribe may bear are sufficient to justify their participation; and

(2) The proposed activities will contribute productively to the licensing review.

(c) The decision of the Director will be transmitted in writing to the governor or the designated official of the Tribal governing body.

(d) Participation by a State or Indian Tribe shall not affect their rights to participate in an adjudicatory hearing as provided by part 2 of this chapter.

Subpart G—Records, Reports, Tests, and Inspections

§ 61.80 Maintenance of records, reports, and transfers.

(a) Each licensee shall maintain any records and make any reports in connection with the licensed activities as may be required by the conditions of the license or by the rules, regulations, and orders of the Commission.

(b) Records which are required by the regulations in this part or by license conditions must be maintained for a period specified by the appropriate regulations in this chapter or by license condition. If a retention period is not otherwise specified, these records must be maintained and transferred to the officials specified in paragraph (e) of this section as a condition of license termination unless the Commission otherwise authorizes their disposition.

(c) Records which must be maintained pursuant to this part may be the original or a reproduced copy or a microform if this reproduced copy or microform is capable of producing copy that is clear and legible at the end of the required retention period. The record may also be stored in electronic media with the capability for producing legible, accurate, and complete records during the required retention period. Records such as letters, drawings, specifications, must include all pertinent information such as stamps, initials, and signatures. The licensee shall maintain adequate safeguards against tampering with and loss of records.

(d) If there is a conflict between the Commission's regulations in this part, license condition, or other written Commission approval or authorization pertaining to the retention period for the same type of record, the longest retention period specified takes precedence.

(e) Notwithstanding paragraphs (a) through (d) of this section, the licensee shall record the location and the quantity of radioactive wastes contained in the disposal site and transfer these records upon license termination to the chief executive of the nearest municipality, the chief executive of the county in which the facility is located, the county zoning board or land development and planning agency, the State governor and other State, local, and Federal governmental agencies as designated by the Commission at the time of license termination.

(f) Following receipt and acceptance of a shipment of radioactive waste, the licensee shall record the date that the shipment is received at the disposal facility, the date of disposal of the waste, a traceable shipment manifest number, a description of any engineered barrier or structural overpack provided for disposal of the waste, the location of disposal at the disposal site, the containment integrity of the waste disposal containers as received, any discrepancies between materials listed on the manifest and those received, the volume of any pallets, bracing, or other shipping or onsite generated materials that are contaminated, and are disposed of as contaminated or suspect materials, and any evidence of leaking or damaged disposal containers or radiation or contamination levels in excess of limits specified in Department of Transportation and Commission regulations. The licensee shall briefly describe any repackaging operations of any of the disposal containers included in the shipment, plus any other information required by the Commission as a license condition. The licensee shall retain these records until the Commission transfers or terminates the license that authorizes the activities described in this section.

(g) Each licensee shall comply with the safeguards reporting requirements of §§30.55, 40.64, 74.13, and 74.15 of this chapter if the quantities or activities of materials received or transferred exceed the limits of these sections. Inventory reports required by these sections are not required for materials after disposal.

(h) Each licensee authorized to dispose of radioactive waste received from other persons shall file a copy of its financial report or a certified financial statement annually with the Commission in order to update the information base for determining financial qualifications.

(i)(1) Each licensee authorized to dispose of waste materials received from other persons under this part shall submit annual reports to the Director, Office of Nuclear Material Safety and Safeguards, by an appropriate method listed in §60.4 of this chapter, with a copy to the appropriate NRC Regional Office shown in appendix D to part 20 of this chapter. Reports must be submitted by the end of the first calendar quarter of each year for the preceding year.

(2) The reports shall include (i) specification of the quantity of each of the principal radionuclides released to unrestricted areas in liquid and in airborne effluents during the preceding year, (ii) the results of the environmental monitoring program, (iii) a summary of licensee disposal unit survey and maintenance activities, (iv) a summary, by waste class, of activities and quantities of radionuclides disposed of, (v) any instances in which observed site characteristics were significantly different from those described in the application for a license; and (vi) any other information the Commission may require. If the quantities of radioactive materials released during the reporting period, monitoring results, or maintenance performed are significantly different from those expected in the materials previously reviewed as part of the licensing action, the report must cover this specifically.

(j) Each licensee shall report in accordance with the requirements of §70.52 of this chapter.

(k) Any transfer of byproduct, source, and special nuclear materials by the licensee is subject to the requirements in §§30.41, 40.51, and 70.42 of this chapter. Byproduct, source and

special nuclear material means materials as defined in these parts, respectively.

(l) In addition to the other requirements of this section, the licensee shall store, or have stored, manifest and other information pertaining to receipt and disposal of radioactive waste in an electronic recordkeeping system.

(1) The manifest information that must be electronically stored is—

(i) That required in 10 CFR part 20, appendix G, with the exception of shipper and carrier telephone numbers and shipper and consignee certifications; and

(ii) That information required in paragraph (f) of this section.

(2) As specified in facility license conditions, the licensee shall report the stored information, or subsets of this information, on a computer-readable medium.

[47 FR 57463, Dec. 27, 1982, as amended at 52 FR 31612, Aug. 21, 1987; 53 FR 19251, May 27, 1988; 58 FR 33891, June 22, 1993; 60 FR 15666, Mar. 27, 1995; 67 FR 78141, Dec. 23, 2002; 68 FR 58814, Oct. 10, 2003; 73 FR 5725, Jan. 31, 2008; 79 FR 75740, Dec. 19, 2014]

§ 61.81 Tests at land disposal facilities.

(a) Each licensee shall perform, or permit the Commission to perform, any tests as the Commission deems appropriate or necessary for the administration of the regulations in this part, including tests of:

(1) Radioactive wastes and facilities used for the receipt, storage, treatment, handling and disposal of radioactive wastes.

(2) Radiation detection and monitoring instruments; and

(3) Other equipment and devices used in connection with the receipt, possession, handling, treatment, storage, or disposal of radioactive waste.

§ 61.82 Commission inspections of land disposal facilities.

(a) Each licensee shall afford to the Commission at all reasonable times opportunity to inspect radioactive waste not yet disposed of, and the premises, equipment, operations, and facilities in which radioactive wastes are received, possessed, handled, treated, stored, or disposed of.

(b) Each licensee shall make available to the Commission for inspection, upon reasonable notice, records kept by it pursuant to the regulations in this chapter. Authorized representatives of the Commission may copy and take away copies of, for the Commission's use, any record required to be kept pursuant to this part.

§ 61.83 Violations.

(a) The Commission may obtain an injunction or other court order to prevent a violation of the provisions of—

(1) The Atomic Energy Act of 1954, as amended;

(2) Title II of the Energy Reorganization Act of 1974, as amended; or

(3) A regulation or order issued pursuant to those Acts.

(b) The Commission may obtain a court order for the payment of a civil penalty imposed under section 234 of the Atomic Energy Act:

(1) For violations of—

(i) Sections 53, 57, 62, 63, 81, 82, 101, 103, 104, 107, or 109 of the Atomic Energy Act of 1954, as amended;

(ii) Section 206 of the Energy Reorganization Act;

(iii) Any rule, regulation, or order issued pursuant to the sections specified in paragraph (b)(1)(i) of this section;

(iv) Any term, condition, or limitation of any license issued under the sections specified in paragraph (b)(1)(i) of this section.

(2) For any violation for which a license may be revoked under section 186 of the Atomic Energy Act of 1954, as amended.

[57 FR 55077, Nov. 24, 1992]

§ 61.84 Criminal penalties.

(a) Section 223 of the Atomic Energy Act of 1954, as amended, provides for criminal sanctions for willful violation of, attempted violation of, or conspiracy to violate, any regulation issued under sections 161b, 161i, or 161o of the Act. For purposes of section 223, all the regulations in part 61 are issued under one or more of sections 161b, 161i, or 161o, except for the sections listed in paragraph (b) of this section.

(b) The regulations in part 61 that are not issued under sections 161b, 161i, or 161o for the purposes of Section 223

are as follows: §§61.1, 61.2, 61.4, 61.5, 61.6, 61.7, 61.8, 61.10, 61.11, 61.12, 61.13, 61.14, 61.15, 61.16, 61.20, 61.21, 61.22, 61.23, 61.26, 61.30, 61.31, 61.50, 61.51, 61.54, 61.55, 61.58, 61.59, 61.61, 61.63, 61.70, 61.71, 61.72, 61.73, 61.83, and 61.84.

[57 FR 55077, Nov. 24, 1992]

PART 62—CRITERIA AND PROCEDURES FOR EMERGENCY ACCESS TO NON-FEDERAL AND REGIONAL LOW-LEVEL WASTE DISPOSAL FACILITIES

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Subpart D—Termination of Emergency Access

62.31 Termination of emergency access.

AUTHORITY: Atomic Energy Act of 1954, sec. 161 (42 U.S.C. 2201); Energy Reorganization Act of 1974, secs. 201 (42 U.S.C. 5841); Low-Level Radioactive Waste Policy Amendments Act of 1985, secs. 2, 6 (42 U.S.C. 2021b, 2021f); 44 U.S.C. 3504 note.

SOURCE: 54 FR 5420, Feb. 3, 1989, unless otherwise noted.

Subpart A—General Provisions

§62.1 Purpose and scope.

(a) The regulations in this part establish for specific low-level radioactive waste:

(1) Criteria and procedures for granting emergency access under section 6 of the Low-Level Radioactive Waste Policy Amendments Act of 1985 (42 U.S.C. 2021) to any non-Federal or regional low-level radioactive waste (LLW) disposal facility or to any non-Federal disposal facility within a State that is not a member of a Compact, and

(2) The terms and conditions upon which the Commission will grant this emergency access.

(b) The regulations in this part apply to all persons as defined by this regulation, who have been denied access to existing regional or non-Federal low-level radioactive waste disposal facilities and who submit a request to the Commission for a determination pursuant to this part.

(c) The regulations in this part apply only to the LLW that the States have the responsibility to dispose of pursuant to section 3(1)(a) of the Act.

§62.2 Definitions.

As used in this part:

Act means the Low-Level Radioactive Waste Policy Amendments Act of 1985 (Pub. L. 99–240).

Agreement State means a State that—

(1) Has entered into an agreement with the Nuclear Regulatory Commission under section 274 of the Atomic Energy Act of 1954 (42 U.S.C. 2021); and

(2) Has authority to regulate the disposal of low-level radioactive waste under such agreement.

Commission means the Nuclear Regulatory Commission or its duly authorized representatives.

Compact means a Compact entered into by two or more States pursuant to the Low-Level Radioactive Waste Policy Amendments Act of 1985.

Compact Commission means the regional commission, committee, or

board established in a Compact to administer such Compact.

Disposal means the permanent isolation of low-level radioactive waste pursuant to the requirements established by the Nuclear Regulatory Commission under applicable laws, or by an Agreement State if such isolation occurs in this Agreement State.

Emergency access means access to an operating non-Federal or regional low-level radioactive waste disposal facility or facilities for a period not to exceed 180 days, which is granted by NRC to a generator of low-level radioactive waste who has been denied the use of those facilities.

Extension of emergency access means an extension of the access that had been previously granted by NRC to an operating non-Federal or regional low-level radioactive waste disposal facility or facilities for a period not to exceed 180 days.

Low-level radioactive waste (LLW) means radioactive material that—

(1) Is not high-level radioactive waste, spent nuclear fuel, or byproduct material (as defined in paragraphs (2), (3), and (4) of the definition of *Byproduct Material* set forth in § 20.1003 of this chapter); and

(2) The NRC, consistent with existing law and in accordance with paragraph (1) of this definition, classifies as low-level radioactive waste.

Non-Federal disposal facility means a low-level radioactive waste disposal facility that is commercially operated or is operated by a State.

Person means any individual, corporation, partnership, firm, association, trust, State, public or private institution, group or agency who is an NRC or NRC Agreement State licensed generator of low-level radioactive waste within the scope of § 62.1(c) of this part; any Governor (or for any *State* without a Governor, the chief executive officer of the *State*) on behalf of any NRC or NRC Agreement State licensed generator or generators of low-level radioactive waste within the scope of § 62.1(c) of this part located in his or her *State*; or their duly authorized representative, legal successor, or agent.

Regional disposal facility means a non-Federal low-level radioactive waste disposal facility in operation on January 1, 1985, or subsequently established and operated under a compact.

State means any State of the United States, the District of Columbia, and the Commonwealth of Puerto Rico.

Temporary emergency access means access that is granted at NRC's discretion under § 62.23 of this part upon determining that access is necessary to eliminate an immediate and serious threat to the public health and safety or the common defense and security. Such access expires 45 days after the granting and cannot be extended.

[54 FR 5420, Feb. 3, 1989, as amended at 72 FR 55933, Oct. 1, 2007]

§ 62.3 Communications.

Except where otherwise specified, all communications and reports concerning the regulations in this part and applications filed under them should be sent by mail addressed: ATTN: Document Control Desk, Director, Office of Nuclear Material Safety and Safeguards, U.S. Nuclear Regulatory Commission, Washington, DC 20555–0001; by hand delivery to the NRC's offices at 11555 Rockville Pike, Rockville, Maryland; or, where practicable, by electronic submission, for example, via Electronic Information Exchange, or CD–ROM. Electronic submissions must be made in a manner that enables the NRC to receive, read, authenticate, distribute, and archive the submission, and process and retrieve it a single page at a time. Detailed guidance on making electronic submissions can be obtained by visiting the NRC's Web site at *http://www.nrc.gov/site-help/e-submittals.html*; by e-mail to *MSHD.Resource@nrc.gov*; or by writing the Office of the Chief Information Officer, U.S. Nuclear Regulatory Commission, Washington, DC 20555–0001. The guidance discusses, among other topics, the formats the NRC can accept, the use of electronic signatures, and the treatment of nonpublic information.

[73 FR 5725, Jan. 31, 2008, as amended at 74 FR 62683, Dec. 1, 2009; 79 FR 75740, Dec. 19, 2014; 80 FR 74980, Dec. 1, 2015]

§62.4 Interpretations.

Except as specifically authorized by the Commission in writing, no interpretation of the meaning of the regulations in this part by any officer or employee of the Commission other than a written interpretation by the General Counsel will be considered binding on the Commission.

§62.5 Specific exemptions.

The Commission may, upon application of any interested person or upon its own initiative, grant an exemption from the requirements of the regulations in this part that it determines is authorized by law and will not endanger life or property or the common defense and security and is otherwise in the public interest.

§62.8 Information collection requirements: OMB approval.

(a) The Nuclear Regulatory Commission has submitted the information collection requirements contained in this part to the Office of Management and Budget (OMB) for approval as required by the Paperwork Reduction Act (44 U.S.C. 3501 *et seq.*). The NRC may not conduct or sponsor, and a person is not required to respond to, a collection of information unless it displays a currently valid OMB control number. OMB has approved the information collection requirements contained in this part under control number 3150–0143.

(b) The approved information collection requirements contained in this part appear in §§62.5, 62.11, 62.12, 62.13, 62.14, and 62.15.

[54 FR 5420, Feb. 3, 1989, as amended at 62 FR 52188, Oct. 6, 1997; 85 FR 65663, Oct. 16, 2020]

Subpart B—Request for a Commission Determination

§62.11 Filing and distribution of a determination request.

(a) The person submitting a request for a Commission determination shall file a signed original of the request with the Commission at the address specified in §62.3 of this part, with a copy also provided to the appropriate Regional Administrator at the address specified in appendix D to part 20 of this chapter. The request must be signed by the person requesting the determination or the person's authorized representative under oath or affirmation.

(b) Upon receipt of a request for a determination, the Secretary of the Commission shall publish a notice acknowledging receipt of the request in the FEDERAL REGISTER. The notice must require that public comment on the request be submitted within 10 days of the publication date of the notice. A copy of the request will be made available for inspection or copying at the NRC Web site, *http://www.nrc.gov*, and/or at the NRC Public Document Room. The Secretary of the Commission shall also transmit a copy of the request to the U.S. Department of Energy, to the Governors of the States of the Compact region where the waste is generated, to the Governors of the States with operating non-Federal low-level radioactive waste disposal facilities, to the Compact Commissions with operating regional low-level radioactive waste disposal facilities, and to the Governors of the States in the Compact Commissions with operating disposal facilities.

(c) Upon receipt of a request for a determination based on a serious and immediate threat to the common defense and security, the Commission will notify DOD and/or DOE and provide a copy of the request as needed for their consideration.

(d) Fees applicable to a request for a Commission determination under this part will be determined in accordance with the procedures set forth for special projects under category 12 of §170.31 of this chapter.

(e) In the event that the allocations or limitations established in section 5(b) or 6(h) of the Act are met at all operating non-Federal or regional LLW disposal facilities, the Commission may suspend the processing or acceptance of requests for emergency access determinations until additional LLW disposal capacity is authorized by Congress.

[54 FR 5420, Feb. 3, 1989, as amended at 64 FR 48954, Sept. 9, 1999; 68 FR 58814, Oct. 10, 2003]

§ 62.12 Contents of a request for emergency access: General information.

A request for a Commission determination under this part must include the following information for each generator to which the request applies:

(a) Name and address of the person making the request;

(b) Name and address of the person(s) or company(ies) generating the low-level radioactive waste for which the determination is sought;

(c) A statement indicating whether the generator is basing the request on the grounds of a serious and immediate threat to the public health and safety or the common defense and security;

(d) Certification that the radioactive waste for which emergency access is requested is low-level radioactive waste within § 62.1(c) of this part;

(e) The low-level waste generation facility(ies) producing the waste for which the request is being made;

(f) A description of the activity that generated the waste;

(g) Name of the disposal facility or facilities which had been receiving the waste stream of concern before the generator was denied access;

(h) A description of the low-level radioactive waste for which emergency access is requested, including—

(1) The characteristics and composition of the waste, including, but not limited to—

(i) Type of waste (e.g. solidified oil, scintillation fluid, failed equipment);

(ii) Principal chemical composition;

(iii) Physical state (solid, liquid, gas);

(iv) Type of solidification media; and

(v) Concentrations and percentages of any hazardous or toxic chemicals, chelating agents, or infectious or biological agents associated with the waste;

(2) The radiological characteristics of the waste such as—

(i) The classification of the waste in accordance with 61.55;

(ii) A list of the radionuclides present or potentially present in the waste, their concentration or contamination levels, and total quantity;

(iii) Distribution of the radionuclides within the waste (surface or volume distribution);

(iv) Amount of transuranics (nanocuries/gram);

(3) The minimum volume of the waste requiring emergency access to eliminate the threat to the public health and safety or the common defense and security;

(4) The time duration for which emergency access is requested (not to exceed 180 days);

(5) Type of disposal container or packaging (55 gallon drum, box, liner, etc.); and

(6) Description of the volume reduction and waste minimization techniques applied to the waste which assure that it is reduced to the maximum extent practicable, and the actual reduction in volume that occurred;

(i) Basis for requesting the determination set out in this part, including—

(1) The circumstances that led to the denial of access to existing low-level radioactive waste disposal facilities;

(2) A description of the situation that is responsible for creating the serious and immediate threat to the public health and safety or the common defense and security, including the date when the need for emergency access was identified;

(3) A chronology and description of the actions taken by the person requesting emergency access to prevent the need for making such a request, including consideration of all alternatives set forth in § 62.13 of this part, and any supporting documentation as appropriate;

(4) An explanation of the impacts of the waste on the public health and safety or the common defense and security if emergency access is not granted, and the basis for concluding that these impacts constitute a serious and immediate threat to the public health and safety or the common defense and security. The impacts to the public health and safety or the common defense and security should also be addressed if the generator's services, including research activities, were to be curtailed, either for a limited period of time or indefinitely;

(5) Other consequences if emergency access is not granted;

(j) Steps taken by the person requesting emergency access to correct the

situation requiring emergency access and the person's plans to eliminate the need for additional or future emergency access requests;

(k) Documentation certifying that access has been denied;

(l) Documentation that the waste for which emergency access is requested could not otherwise qualify for disposal pursuant to the Unusual Volumes provision (Section 5(c)(5) of the Act) or is not simultaneously under consideration by the Department of Energy (DOE) for access through the Unusual Volumes allocation;

(m) Date by which access is required;

(n) Any other information which the Commission should consider in making its determination.

§ 62.13 Contents of a request for emergency access: Alternatives.

(a) A request for emergency access under this part must include information on alternatives to emergency access. The request shall include a discussion of the consideration given to any alternatives, including, but not limited to, the following:

(1) Storage of low-level radioactive waste at the site of generation;

(2) Storage of low-level radioactive waste in a licensed storage facility;

(3) Obtaining access to a disposal facility by voluntary agreement;

(4) Purchasing disposal capacity available for assignment pursuant to the Act;

(5) Requesting disposal at a Federal low-level radioactive waste disposal facility in the case of a Federal or defense related generator of LLW;

(6) Reducing the volume of the waste;

(7) Ceasing activities that generate low-level radioactive waste; and

(8) Other alternatives identified under paragraph (b) of this section.

(b) The request must identify all of the alternatives to emergency access considered, including any that would require State or Compact action, or any others that are not specified in paragraph (a) of this section. The request should also include a description of the process used to identify the alternatives, a description of the factors that were considered in identifying and evaluating them, a chronology of actions taken to identify and implement alternatives during the process, and a discussion of any actions that were considered, but not implemented.

(c) The evaluation of each alternative must consider:

(1) Its potential for mitigating the serious and immediate threat to public health and safety or the common defense and security posed by lack of access to disposal;

(2) The adverse effects on public health and safety and the common defense and security, if any, of implementing each alternative, including the curtailment or cessation of any essential services affecting the public health and safety or the common defense and security;

(3) The technical and economic feasibility of each alternative including the person's financial capability to implement the alternatives;

(4) Any other pertinent societal costs and benefits;

(5) Impacts to the environment;

(6) Any legal impediments to implementation of each alternative, including whether the alternatives will comply with applicable NRC and NRC Agreement States regulatory requirements; and

(7) The time required to develop and implement each alternative.

(d) The request must include the basis for:

(1) Rejecting each alternative; and

(2) Concluding that no alternative is available.

§ 62.14 Contents of a request for an extension of emergency access.

A request for an extension of emergency access must include:

(a) Updates of the information required in §§ 62.12 and 62.13; and

(b) Documentation that the generator of the low-level radioactive waste granted emergency access and the State in which the low-level radioactive waste was generated have diligently, though unsuccessfully, acted during the period of the initial grant to eliminate the need for emergency access. Documentation must include:

(1) An identification of additional alternatives that have been evaluated during the period of the initial grant, and

(2) A discussion of any reevaluation of previously considered alternatives, including verification of continued attempts to gain access to a disposal facility by voluntary agreement.

§ 62.15 Additional information.

(a) The Commission may require additional information from a person making a request for a Commission determination under this part concerning any portion of the request.

(b) The Commission shall deny a request for a Commission determination under this part if the person making the request fails to respond to a request for additional information under paragraph (a) of this section within ten (10) days from the date of the request for additional information, or any other time that the Commission may specify. This denial will not prejudice the right of the person making the request to file another request for a Commission determination under this part.

§ 62.16 Withdrawal of a determination request.

(a) A person may withdraw a request for a Commission determination under this part without prejudice at any time prior to the issuance of an initial determination under § 62.21 of this part.

(b) The Secretary of the Commission will cause to be published in the FEDERAL REGISTER a notice of the withdrawal of a request for a Commission determination under this part.

§ 62.17 Elimination of repetition.

In any request under this part, the person making the request may incorporate by reference information contained in a previous application, Statement, or report filed with the Commission provided that these references are updated, clear, and specific.

§ 62.18 Denial of request.

If a request for a determination is based on circumstances that are too remote and speculative to allow an informed determination, the Commission may deny the request.

Subpart C—Issuance of a Commission Determination

§ 62.21 Determination for granting emergency access.

(a) Not later than (45) days after the receipt of a request for a Commission determination under this part from any generator of low-level radioactive waste, or any Governor on behalf of any generator or generators located in his or her State, the Commission shall determine whether—

(1) Emergency access to a regional disposal facility or a non-Federal disposal facility within a State that is not a member of a Compact for specific low-level radioactive waste is necessary because of an immediate and serious threat—

(i) To the public health and safety or

(ii) The common defense and security; and

(2) The threat cannot be mitigated by any alternative consistent with the public health and safety, including those identified in § 62.13.

(b) In making a determination under this section, the Commission shall be guided by the criteria set forth in § 62.25 of this part.

(c) A determination under this section must be in writing and contain a full explanation of the facts upon which the determination is based and the reasons for granting or denying the request. An affirmative determination must designate an appropriate non-Federal or regional LLW disposal facility or facilities for the disposal of wastes, specifically describe the low-level radioactive waste as to source, physical and radiological characteristics, and the minimum volume and duration (not to exceed 180 days) necessary to eliminate the immediate threat to public health and safety or the common defense and security. It may also contain conditions upon which the determination is dependent.

§ 62.22 Notice of issuance of a determination.

(a) Upon the issuance of a Commission determination the Secretary of the Commission will notify in writing the following persons of the final determination: The person making the request, the Governor of the State in

which the low-level radioactive waste requiring emergency access was generated, the Governor of the State in which the designated disposal facility is located, and if pertinent, the appropriate Compact Commission for such approval as is specified as necessary in section 6(g) of the Act. For the Governor of the State in which the designated disposal facility is located and for the appropriate Compact Commission, the notification must set forth the reasons that emergency access was granted and specifically describe the low-level radioactive waste as to source, physical and radiological characteristics, and the minimum volume and duration (not to exceed 180 days) necessary to alleviate the immediate and serious threat to public health and safety or the common defense and security. For the Governor of the State in which the low-level waste was generated, the notification must indicate that no extension of emergency access will be granted under § 62.24 of this part absent diligent State and generator action during the period of the initial grant.

(b) The Secretary of the Commission will cause to be published in the FEDERAL REGISTER a notice of the issuance of the determination.

(c) The Secretary of the Commission shall make a copy of the final determination available for inspection at the NRC Web site, *http://www.nrc.gov*.

[54 FR 5420, Feb. 3, 1989, as amended at 64 FR 48954, Sept. 9, 1999]

§ 62.23 Determination for granting temporary emergency access.

(a) The Commission may grant temporary emergency access to an appropriate non-Federal or regional disposal facility or facilities provided that the determination required under § 62.21(a)(1) of this part is made;

(b) The notification procedures under § 62.22 of this part are complied with; and

(c) The temporary emergency access duration will not exceed forty-five (45) days.

§ 62.24 Extension of emergency access.

(a) After the receipt of a request from any generator of low-level waste, or any Governor on behalf of any generator or generators in his or her State, for an extension of emergency access that was initially granted under § 62.21, the Commission shall make an initial determination of whether—

(1) Emergency access continues to be necessary because of an immediate and serious threat to the public health and safety or the common defense and security;

(2) The threat cannot be mitigated by any alternative that is consistent with public health and safety; and

(3) The generator of low-level waste and the State have diligently though unsuccessfully acted during the period of the initial grant to eliminate the need for emergency access.

(b) After making a determination pursuant to paragraph (a) of this section, the requirements specified in §§ 62.21(c) and 62.22 of this part, must be followed.

§ 62.25 Criteria for a Commission determination.

(a) In making the determination required by § 62.21(a) of this part, the Commission will determine whether the circumstances described in the request for emergency access create a serious and immediate threat to the public health and safety or the common defense and security.

(b) In making the determination that a serious and immediate threat exists to the public health and safety, the Commission will consider, notwithstanding the availability of any alternative identified in § 62.13 of this part:

(1) The nature and extent of the radiation hazard that would result from the denial of emergency access, including consideration of—

(i) The standards for radiation protection contained in part 20 of this chapter;

(ii) Any standards governing the release of radioactive materials to the general environment that are applicable to the facility that generated the low level waste; and

(iii) Any other Commission requirements specifically applicable to the facility or activity that is the subject of the emergency access request; and

(2) The extent to which essential services affecting the public health and safety (such as medical, therapeutic,

diagnostic, or research activities) will be disrupted by the denial of emergency access.

(c) For purposes of granting temporary emergency access under § 62.23 of this part, the Commission will consider the criteria contained in the Commission's Policy Statement (45 FR 10950, February 24, 1977) for determining whether an event at a facility or activity licensed or otherwise regulated by the Commission is an abnormal occurrence within the purview of section 208 of the Energy Reorganization Act of 1974.

(d) In making the determination that a serious and immediate threat to the common defense and security exists, the Commission will consider, notwithstanding the availability of any alternative identified in § 62.13 of this part:

(1) Whether the activity generating the wastes is necessary to the protection of the common defense and security, and

(2) Whether the lack of access to a disposal site would result in a significant disruption in that activity that would seriously threaten the common defense and security.

The Commission will consider the views of the Department of Defense (DOD) and or the Department of Energy (DOE) regarding the importance of the activities responsible for generating the LLW to the common defense and security, when evaluating requests based all, or in part, on a serious and immediate threat to the common defense and security.

(e) In making the determination required by § 62.21(a)(2) of this part, the Commission will consider whether the person submitting the request—

(1) Has identified and evaluated any alternative that could mitigate the need for emergency access; and

(2) Has considered all pertinent factors in its evaluation of alternatives including state-of-the-art technology and impacts on public health and safety.

(f) In making the determination required by § 62.21(a)(2) of this part, the Commission will consider implementation of an alternative to be unreasonable if:

(1) It adversely affects public health and safety, the environment, or the common defense and security; or

(2) It results in a significant curtailment or cessation of essential services, affecting public health and safety or the common defense and security; or

(3) It is beyond the technical and economic capabilities of the person requesting emergency access; or

(4) Implementation of the alternative would conflict with applicable State or local or Federal laws and regulations; or

(5) It cannot be implemented in a timely manner.

(g) The Commission shall make an affirmative determination under § 62.21(a) of this part only if all of the alternatives that were considered are found to be unreasonable.

(h) As part of its mandated evaluation of the alternatives that were considered by the generator, the Commission shall consider the characteristics of the wastes (including: physical properties, chemical properties, radioactivity, pathogenicity, infectiousness, and toxicity, pyrophoricity, and explosive potential); condition of current container; potential for contaminating the disposal site; the technologies or combination of technologies available for treatment of the waste (including incinerators; evaporators-crystallizers; fluidized bed dryers; thin film evaporators; extruders, evaporators; and Compactors); the suitability of volume reduction equipment to the circumstances (specific activity considerations, actual volume reduction factors, generation of secondary wastes, equipment contamination, effluent releases, worker exposure, and equipment availability); and the administrative controls which could be applied, in making a determination whether waste to be delivered for disposal under this part has been reduced in volume to the maximum extent practicable using available technology.

§ 62.26 Criteria for designating a disposal facility.

(a) The Commission shall designate an appropriate non-Federal or regional disposal facility if an affirmative determination is made pursuant to §§ 62.21, 62.23, or 62.24 of this part.

(b) The Commission will exclude a disposal facility from consideration if:

(1) The low-level radioactive wastes of the generator do not meet the criteria established by the license agreement or the license agreement of the facility; or

(2) The disposal facility is in excess of its approved capacity; or

(3) Granting emergency access would delay the closing of the disposal facility pursuant to plans established before the receipt of the request for emergency access; or

(4) The volume of waste requiring emergency access exceeds 20 percent of the total volume of low-level radioactive waste accepted for disposal at the facility during the previous calendar year.

(c) If, after applying the exclusionary criteria in paragraph (b) of this section, more than one disposal facility is identified as appropriate for designation, the Commission will then consider additional factors in designating a facility or facilities including—

(1) Type of waste and its characteristics,

(2) Previous disposal practices,

(3) Transportation

(4) Radiological effects,

(5) Site capability for handling waste,

(6) The volume of emergency access waste previously accepted by each site both for the particular year and overall, and

(7) Any other considerations deemed appropriate by the Commission.

(d) The Commission, in making its designation, will also consider any information submitted by the operating non-Federal or regional LLW disposal sites, or any information submitted by the public in response to a FEDERAL REGISTER notice requesting comment, as provided in paragraph (b) of § 62.11 of this part.

Subpart D—Termination of Emergency Access

§ 62.31 Termination of emergency access.

(a) The Commission may terminate a grant of emergency access when emergency access is no longer necessary to eliminate an immediate threat to public health and safety or the common defense and security.

(b) The Commission may terminate a grant of emergency access if an applicant has provided inaccurate information in its application for emergency access or if the applicant has failed to comply with this part or any conditions set by the Commission pursuant to this part.

PART 63—DISPOSAL OF HIGH-LEVEL RADIOACTIVE WASTES IN A GEOLOGIC REPOSITORY AT YUCCA MOUNTAIN, NEVADA

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AUTHORITY: Atomic Energy Act of 1954, secs. 51, 53, 62, 63, 65, 81, 161, 182, 183, 223, 234 (42 U.S.C. 2071, 2073, 2092, 2093, 2095, 2111, 2201, 2232, 2233, 2273, 2282); Energy Reorganization Act of 1974, secs. 201, 202, 206, 211 (42 U.S.C. 5841, 5842, 5846, 5851); 42 U.S.C. 2021a; National Environmental Policy Act of 1969 (42 U.S.C. 4332); Nuclear Waste Policy Act of 1982, secs. 114, 117, 121 (42 U.S.C. 10134, 10137, 10141); 44 U.S.C. 3504 note.

SOURCE: 66 FR 55792, Nov. 2, 2001, unless otherwise noted.

EDITORIAL NOTE: Nomenclature changes to part 63 appear at 81 FR 86909, Dec. 2, 2016.

Subpart A—General Provisions

§63.1 Purpose and scope.

This part prescribes rules governing the licensing (including issuance of a construction authorization) of the U.S. Department of Energy to receive and possess source, special nuclear, and byproduct material at a geologic repository operations area sited, constructed, or operated at Yucca Mountain, Nevada, in accordance with the Nuclear Waste Policy Act of 1982, as amended, and the Energy Policy Act of 1992. As provided in 10 CFR 60.1, the regulations in part 60 of this chapter do not apply to any activity licensed under another part of this chapter. This part also gives notice to all persons who knowingly provide to any licensee, applicant, contractor, or subcontractor, components, equipment, materials, or other goods or services, that relate to a licensee's or applicant's activities subject to this part, that they may be individually subject to NRC enforcement action for violation of §63.11.

[69 FR 2280, Jan. 14, 2004]

§63.2 Definitions.

As used in this part:

Affected Indian Tribe means any Indian Tribe within whose reservation boundaries a repository for high-level radioactive waste or spent fuel is proposed to be located; or whose Federally-defined possessory or usage rights to other lands outside of the reservation's boundaries arising out of Congressionally-ratified treaties or other Federal law may be substantially and adversely affected by the location of the facility if the Secretary of the Interior finds, on the petition of the appropriate governmental officials of the Tribe, that the effects are both substantial and adverse to the Tribe.

Barrier means any material, structure, or feature that, for a period to be determined by NRC, prevents or substantially reduces the rate of movement of water or radionuclides from the Yucca Mountain repository to the accessible environment, or prevents the release or substantially reduces the release rate of radionuclides from the waste. For example, a barrier may be a geologic feature, an engineered structure, a canister, a waste form with physical and chemical characteristics that significantly decrease the mobility of radionuclides, or a material placed over and around the waste, provided that the material substantially delays movement of water or radionuclides.

Commencement of construction means clearing of land, surface or subsurface excavation, or other substantial action that would adversely affect the environment of a site. It does not include changes desirable for the temporary use of the land for public recreational uses, site characterization activities, other preconstruction monitoring and investigation necessary to establish background information related to the suitability of the Yucca Mountain site or to the protection of environmental values, or procurement or manufacture of components of the geologic repository operations area.

Commission means the Nuclear Regulatory Commission or its duly authorized representatives.

Containment means the confinement of radioactive waste within a designated boundary.

Design bases means that information that identifies the specific functions to be performed by a structure, system, or component of a facility and the specific values or ranges of values chosen for controlling parameters as reference bounds for design. These values may be constraints derived from generally accepted ''state-of-the-art'' practices for achieving functional goals or requirements derived from analysis (based on calculation or experiments) of the effects of a postulated event under which a structure, system, or component must meet its functional goals. The

values for controlling parameters for external events include:

(1) Estimates of severe natural events to be used for deriving design bases that will be based on consideration of historical data on the associated parameters, physical data, or analysis of upper limits of the physical processes involved; and

(2) Estimates of severe external human-induced events to be used for deriving design bases, that will be based on analysis of human activity in the region, taking into account the site characteristics and the risks associated with the event.

Director means the Director of the Nuclear Regulatory Commission's Office of Nuclear Material Safety and Safeguards.

Disposal means the emplacement of radioactive waste in a geologic repository with the intent of leaving it there permanently.

DOE means the U.S. Department of Energy or its duly authorized representatives.

Engineered barrier system means the waste packages, including engineered components and systems other than the waste package (e.g., drip shields), and the underground facility.

Event sequence means a series of actions and/or occurrences within the natural and engineered components of a geologic repository operations area that could potentially lead to exposure of individuals to radiation. An event sequence includes one or more initiating events and associated combinations of repository system component failures, including those produced by the action or inaction of operating personnel. Those event sequences that are expected to occur one or more times before permanent closure of the geologic repository operations area are referred to as Category 1 event sequences. Other event sequences that have at least one chance in 10,000 of occurring before permanent closure are referred to as Category 2 event sequences.

Geologic repository means a system that is intended to be used for, or may be used for, the disposal of radioactive wastes in excavated geologic media. A geologic repository includes the engineered barrier system and the portion of the geologic setting that provides isolation of the radioactive waste.

Geologic repository operations area means a high-level radioactive waste facility that is part of a geologic repository, including both surface and subsurface areas, where waste handling activities are conducted.

Geologic setting means the geologic, hydrologic, and geochemical systems of the region in which a geologic repository is or may be located.

High-level radioactive waste or *HLW* means:

(1) The highly radioactive material resulting from the reprocessing of spent nuclear fuel, including liquid waste produced directly in reprocessing and any solid material derived from such liquid waste that contains fission products in sufficient concentrations;

(2) Irradiated reactor fuel; and

(3) Other highly radioactive material that the Commission, consistent with existing law, determines by rule requires permanent isolation.

HLW facility means a facility subject to the licensing and related regulatory authority of the Commission pursuant to sections 202(3) and 202(4) of the Energy Reorganization Act of 1974 (88 Stat. 1244).[1]

Host rock means the geologic medium in which the waste is emplaced.

Important to safety, with reference to structures, systems, and components, means those engineered features of the geologic repository operations area whose function is:

(1) To provide reasonable assurance that high-level waste can be received, handled, packaged, stored, emplaced, and retrieved without exceeding the requirements of § 63.111(b)(1) for Category 1 event sequences; or

[1] These are DOE ''facilities used primarily for the receipt and storage of high-level radioactive wastes resulting from activities licensed under such Act (the Atomic Energy Act)'' and ''Retrievable Surface Storage Facilities and other facilities authorized for the express purpose of subsequent long-term storage of high-level radioactive wastes generated by (DOE), which are not used for, or are part of, research and development activities.''

(2) To prevent or mitigate Category 2 event sequences that could result in radiological exposures exceeding the values specified at § 63.111(b)(2) to any individual located on or beyond any point on the boundary of the site.

Important to waste isolation, with reference to design of the engineered barrier system and characterization of natural barriers, means those engineered and natural barriers whose function is to provide a reasonable expectation that high-level waste can be disposed of without exceeding the requirements of § 63.113(b) and (c).

Initiating event means a natural or human induced event that causes an event sequence.

Isolation means inhibiting the transport of radioactive material to:

(1) The location of the reasonably maximally exposed individual so that radiological exposures will not exceed the requirements of § 63.113(b); and

(2) The accessible environment so that releases of radionuclides into the accessible environment will not exceed the requirements of § 63.113(c).

Performance assessment means an analysis that:

(1) Identifies the features, events, processes (except human intrusion), and sequences of events and processes (except human intrusion) that might affect the Yucca Mountain disposal system and their probabilities of occurring;

(2) Examines the effects of those features, events, processes, and sequences of events and processes upon the performance of the Yucca Mountain disposal system; and

(3) Estimates the dose incurred by the reasonably maximally exposed individual, including the associated uncertainties, as a result of releases caused by all significant features, events, processes, and sequences of events and processes, weighted by their probability of occurrence.

Performance confirmation means the program of tests, experiments, and analyses that is conducted to evaluate the adequacy of the information used to demonstrate compliance with the performance objectives in subpart E of this part.

Permanent closure means final backfilling of the underground facility, if appropriate, and the sealing of shafts, ramps, and boreholes.

Preclosure safety analysis means a systematic examination of the site; the design; and the potential hazards, initiating events and event sequences and their consequences (e.g., radiological exposures to workers and the public). The analysis identifies structures, systems, and components important to safety.

Public Document Room means the place at One White Flint North, 11555 Rockville Pike, Room O–1F13, Rockville, MD, at which records of the Commission will ordinarily be made available for public inspection and any other place, the location of which has been published in the FEDERAL REGISTER, at which public records of the Commission pertaining to a geologic repository at the Yucca Mountain site are made available for public inspection.

Publicly Available Records System (PARS) Library means the electronic library generated by the NRC's Agency-wide Documents Access and Management System (ADAMS) to provide access to public documents. PARS has full text documents which can be searched using specific fields and parameters. The public can search, download, print, create reports, and order documents online. The PARS Library contains publicly available documents created or received by NRC since November 1, 1999, as well as some older documents that the NRC has retrofit into the collection. PARS is accessible from the NRC Web site at *http://www.nrc.gov/reading-rm.html*.

Radioactive waste or *waste* means HLW and radioactive materials other than HLW that are received for emplacement in a geologic repository.

Reasonably maximally exposed individual means the hypothetical person meeting the criteria specified at § 63.312.

Reference biosphere means the description of the environment inhabited by the reasonably maximally exposed individual. The reference biosphere comprises the set of specific biotic and abiotic characteristics of the environment, including, but not necessarily limited to, climate, topography, soils, flora, fauna, and human activities.

Restricted area means an area, access to which is limited by the licensee for the purpose of protecting individuals against undue risks from exposure to radiation and radioactive materials. Restricted area does not include areas used as residential quarters, but separate rooms in a residential building may be set aside as a restricted area.

Retrieval means the act of permanently removing radioactive waste from the underground location at which the waste had been previously emplaced for disposal.

Saturated zone means that part of the earth's crust beneath the regional water table in which statistically all voids, large and small, are filled with water under pressure greater than atmospheric.

Site means that area surrounding the geologic repository operations area for which DOE exercises authority over its use in accordance with the provisions of this part.

Site characterization means the program of exploration and research, both in the laboratory and in the field, undertaken to establish the geologic conditions and the ranges of those parameters of the Yucca Mountain site, and the surrounding region to the extent necessary, relevant to the procedures under this part. Site characterization includes borings, surface excavations, excavation of exploratory shafts and/or ramps, limited subsurface lateral excavations and borings, and in situ testing at depth needed to determine the suitability of the site for a geologic repository.

Total effective dose equivalent (TEDE) means the sum of the effective dose equivalent (for external exposures) and the committed effective dose equivalent (for internal exposures).

Underground facility means the underground structure, backfill materials, if any, and openings that penetrate the underground structure (e.g., ramps, shafts, and boreholes, including their seals).

Unrestricted area means an area, access to which is neither limited nor controlled by the licensee.

Unsaturated zone means the zone between the land surface and the regional water table. Generally, fluid pressure in this zone is less than atmospheric pressure, and some of the voids may contain air or other gases at atmospheric pressure. Beneath flooded areas or in perched water bodies, the fluid pressure locally may be greater than atmospheric.

Waste form means the radioactive waste materials and any encapsulating or stabilizing matrix.

Waste package means the waste form and any containers, shielding, packing, and other absorbent materials immediately surrounding an individual waste container.

Water table means that surface in a groundwater body, separating the unsaturated zone from the saturated zone, at which the water pressure is atmospheric.

[66 FR 55792, Nov. 2, 2001, as amended at 68 FR 58815, Oct. 10, 2003; 74 FR 10828, Mar. 13, 2009]

§ 63.3 License required.

(a) DOE may not receive nor possess source, special nuclear, or byproduct material at a geologic repository operations area at the Yucca Mountain site except as authorized by a license issued by the Commission under this part.

(b) DOE may not begin construction of a geologic repository operations area at the Yucca Mountain site unless it has filed an application with the Commission and has obtained construction authorization as provided in this part. Failure to comply with this requirement is grounds for denial of a license.

§ 63.4 Communications and records.

(a) Except as otherwise specified, in this part or in subpart J of part 2 of this chapter, all communications and reports concerning the regulations in this part and applications filed under them should be sent to the NRC as follows:

(1) By mail addressed: ATTN: Document Control Desk; Director, Office of Nuclear Material Safety and Safeguards; U.S. Nuclear Regulatory Commission, Washington, DC 20555–0001;

(2) By hand delivery to the NRC's offices at 11555 Rockville Pike, Rockville, Maryland; ATTN: Document Control Desk: Director, Office of Nuclear Material Safety and Safeguards; or,

(3) Where practicable, by electronic submission, for example, via Electronic

Information Exchange, or CD-ROM. Electronic submissions must be made in a manner that enables the NRC to receive, read, authenticate, distribute, and archive the submission, and process and retrieve it a single page at a time. Detailed guidance on making electronic submissions can be obtained by visiting the NRC's Web site at *http://www.nrc.gov/site-help/e-submittals.html*; by e-mail to *MSHD.Resource@nrc.gov*; or by writing the Office of the Chief Information Officer, U.S. Nuclear Regulatory Commission, Washington, DC 20555–0001. The guidance discusses, among other topics, the formats the NRC can accept, the use of electronic signatures, and the treatment of nonpublic information.

(b) Each record required by this part must be legible throughout the retention period specified by each Commission regulation. The record may be the original or a reproduced copy or a microform if the copy or microform is authenticated by authorized personnel and the microform is capable of producing a clear copy throughout the required retention period. The record may also be stored in electronic media with the capability for producing legible, accurate, and complete records during the required retention period. Records such as letters, drawings, and specifications must include all pertinent information such as stamps, initials, and signatures. The licensee shall maintain adequate safeguards against tampering with and loss of records.

[66 FR 55792, Nov. 2, 2001, as amended at 68 FR 58815, Oct. 10, 2003; 74 FR 62683, Dec. 1, 2009; 80 FR 74981, Dec. 1, 2015]

§ 63.5 Interpretations.

Except as specifically authorized by the Commission in writing, no interpretation of the meaning of the regulations in this part by any officer or employee of the Commission other than a written interpretation by the General Counsel is binding on the Commission.

§ 63.6 Exemptions.

The Commission may, upon application by DOE, any interested person, or upon its own initiative, grant an exemption from the requirements of this part if it determines that the exemption is authorized by law, does not endanger life nor property nor the common defense and security, and is otherwise in the public interest.

§ 63.7 License not required for certain preliminary activities.

The requirement for a license set forth in § 63.3(a) is not applicable to the extent that DOE receives and possesses source, special nuclear, and byproduct material at a geologic repository at the Yucca Mountain site:

(a) For purposes of site characterization; or

(b) For use, during site characterization or construction, as components of radiographic, radiation monitoring, or similar equipment or instrumentation.

§ 63.8 Information collection requirements: OMB approval.

(a) The Nuclear Regulatory Commission has submitted the information collection requirements contained in this part to the Office of Management and Budget (OMB) for approval as required by the Paperwork Reduction Act (44 U.S.C. 3501, *et seq.*). The NRC may not conduct or sponsor, and a person is not required to respond to, a collection of information unless it displays a currently valid OMB control number. OMB has approved the information collection requirements contained in this part under control number 3150–0199.

(b) The approved information collection requirements contained in this Part appear in §§ 63.6, 63.47, 63.62, 63.63, and 63.65.

(c) In § 63.47, IAEA Design Information Questionnaire forms IAEA Design Information Questionnaire forms are approved under control number 3150–0056, and DOC/NRC Forms AP–1, AP–A, and associated forms are approved under control numbers 0694–0135.

[66 FR 55792, Nov. 2, 2001, as amended at 73 FR 78606, Dec. 23, 2008; 85 FR 65663, Oct. 16, 2020]IAEA Design Information Questionnaire forms

§ 63.9 Employee protection.

(a) Discrimination by a Commission licensee, an applicant for a Commission license, or a contractor or subcontractor of a Commission licensee or applicant, against an employee, for engaging in certain protected activities,

is prohibited. Discrimination includes discharge and other actions that relate to compensation, terms, conditions, or privileges of employment. The protected activities are established in section 211 of the Energy Reorganization Act of 1974, as amended, and in general are related to the administration or enforcement of a requirement imposed under the Atomic Energy Act or the Energy Reorganization Act.

(1) The protected activities include but are not limited to:

(i) Providing the Commission, or his or her employer, information about alleged violations of either of the statutes named in paragraph (a) of this section or possible violations of requirements imposed under either of those aforementioned statutes;

(ii) Refusing to engage in any practice made unlawful under either of the statutes named in paragraph (a) of this section, or under these requirements, if the employee has identified the alleged illegality to the employer;

(iii) Requesting the Commission to institute action against his or her employer for the administration or enforcement of these requirements;

(iv) Testifying in any Commission proceeding, or before Congress, or at any Federal or State proceeding regarding any provision (or proposed provision) of either of the statutes named in paragraph (a) of this section;

(v) Assisting or participating in, or is about to assist or participate in, these activities.

(2) These activities are protected even if no formal proceeding is actually initiated as a result of the employee assistance or participation.

(3) This section does not apply to any employee alleging discrimination prohibited by this section who, acting without direction from his or her employer (or the employer's agent), deliberately causes a violation of any requirement of the Energy Reorganization Act of 1974, as amended, or the Atomic Energy Act of 1954, as amended.

(b) Any employee who believes that he or she has been discharged or otherwise discriminated against by any person for engaging in protected activities specified in paragraph (a)(1) of this section may seek a remedy for the discharge or discrimination through an administrative proceeding in the Department of Labor. The administrative proceeding must be initiated within 180 days after an alleged violation occurs. The employee may do this by filing a complaint alleging the violation with the Department of Labor, Employment Standards Administration, Wage and Hour Division. The Department of Labor may order reinstatement, back pay, and compensatory damages.

(c) A violation of paragraph (a), (e), or (f) of this section by a Commission licensee, an applicant for a Commission license, or a contractor or subcontractor of a Commission licensee or applicant may be grounds for—

(1) Denial, revocation, or suspension of the license;

(2) Imposition of a civil penalty on the licensee, applicant, or a contractor or subcontractor of the licensee or applicant; or

(3) Other enforcement action.

(d) Actions taken by an employer, or others, that adversely affect an employee, may be predicated on nondiscriminatory grounds. The prohibition applies when the adverse action occurs because the employee has engaged in protected activities. An employee's engagement in protected activities does not automatically render him or her immune from discharge or discipline for legitimate reasons or from adverse action dictated by nonprohibited considerations.

(e)(1) Each licensee and each applicant for a license shall prominently post the revision of NRC Form 3, ''Notice to Employees,'' referenced in §19.11(c) of this chapter. This form must be posted at locations sufficient to permit employees protected by this section to observe a copy on the way to or from their place of work. Premises must be posted not later than 30 days after an application is docketed and remain posted while the application is pending before the Commission, during the term of the license, and for 30 days following license termination.

(2) Copies of NRC Form 3 may be obtained by writing to the Regional Administrator of the appropriate U.S. Nuclear Regulatory Commission Regional Office listed in appendix D to part 20 of this chapter, via email to

Forms.Resource@nrc.gov, or by visiting the NRC's online library at *http://www.nrc.gov/reading-rm/doc-collections/forms/*.

(f) No agreement affecting the compensation, terms, conditions, or privileges of employment, including an agreement to settle a complaint filed by an employee with the Department of Labor pursuant to section 211 of the Energy Reorganization Act of 1974, as amended, may contain any provision that would prohibit, restrict, or otherwise discourage an employee from participating in a protected activity as defined in paragraph (a)(1) of this section, including, but not limited to, providing information to NRC or to his or her employer on potential violations or other matters within NRC's regulatory responsibilities.

[66 FR 55792, Nov. 2, 2001, as amended at 68 FR 58815, Oct. 10, 2003; 72 FR 63974, Nov. 14, 2007; 73 FR 30459, May 28, 2008; 79 FR 66605, Nov. 10, 2014]

§ 63.10 Completeness and accuracy of information.

(a) Information provided to the Commission by an applicant for a license or by a licensee, or information required by statute, or required by the Commission's regulations, orders, or license conditions to be maintained by the applicant or the licensee must be complete and accurate in all material respects.

(b) The applicant or licensee shall notify the Commission of information identified by the applicant or licensee as having, for the regulated activity, a significant implication for public health and safety or common defense and security. An applicant or licensee violates this paragraph only if the applicant or licensee fails to notify the Commission of information that the applicant or licensee has identified as having a significant implication for public health and safety or common defense and security. Notification must be provided to the Director of Nuclear Material Safety and Safeguards, U.S. Nuclear Regulatory Commission, within 2 working days of identifying the information. This requirement is not applicable to information that is already required to be provided to the Commission by other reporting or updating requirements.

§ 63.11 Deliberate misconduct.

(a) Any licensee, applicant for a license, employee of a licensee or applicant; or any contractor (including a supplier or consultant), subcontractor, employee of a contractor or subcontractor of any licensee or applicant for a license, who knowingly provides to any licensee, applicant, contractor, or subcontractor, any components, equipment, materials, or other goods or services that relate to a licensee's or applicant's activities in this part, may not:

(1) Engage in deliberate misconduct that causes or would have caused, if not detected, a licensee or applicant to be in violation of any rule, regulation, or order; or any term, condition, or limitation of any license issued by the Commission; or

(2) Deliberately submit to NRC, a licensee, an applicant, or a licensee's or applicant's contractor or subcontractor, information that the person submitting the information knows to be incomplete or inaccurate in some respect material to NRC.

(b) A person who violates paragraph (a)(1) or (a)(2) of this section may be subject to enforcement action in accordance with the procedures in 10 CFR part 2, subpart B.

(c) For purposes of paragraph (a)(1) of this section, deliberate misconduct by a person means an intentional act or omission that the person knows:

(1) Would cause a licensee or applicant to be in violation of any rule, regulation, or order; or any term, condition, or limitation, of any license issued by the Commission; or

(2) Constitutes a violation of a requirement, procedure, instruction, contract, purchase order, or policy of a licensee, applicant, contractor, or subcontractor.

Subpart B—Licenses

PREAPPLICATION REVIEW

§ 63.15 Site characterization.

(a) DOE shall conduct a program of site characterization with respect to

the Yucca Mountain site before it submits an application for a license to be issued under this part.

(b) DOE shall conduct the investigations to obtain the required information in a manner that limits adverse effects on the long-term performance of the geologic repository at Yucca Mountain to the extent practical.

§ 63.16 Review of site characterization activities.[2]

(a) If DOE's planned site characterization activities include onsite testing with radioactive material, including radioactive tracers, the Commission shall determine whether the proposed use of such radioactive material is necessary to provide data for the preparation of the environmental reports required by law and for an application to be submitted under § 63.22.

(b) During the conduct of site characterization activities at the Yucca Mountain site, DOE shall report the nature and extent of the activities, the information that has been developed, and the progress of waste form and waste package research and development to the Commission not less than once every 6 months. The semiannual reports must include the results of site characterization studies, the identification of new issues, plans for additional studies to resolve new issues, elimination of planned studies no longer necessary, identification of decision points reached, and modifications to schedules, where appropriate. DOE shall also report its progress in developing the design of a geologic repository operations area appropriate for the area being characterized, noting when key design parameters or features that depend on the results of site characterization will be established. Other topics related to site characterization must also be covered if requested by the Director.

(c) During the conduct of site characterization activities at the Yucca Mountain site, NRC staff shall be permitted to visit and inspect the locations at which such activities are carried out and to observe excavations, borings, and in situ tests, as they are done.

(d) The Director may comment at any time in writing to DOE, expressing current views on any aspect of site characterization or performance assessment at the Yucca Mountain site. In particular, the Director shall comment whenever he or she determines that there are substantial grounds for making recommendations or stating objections to DOE's site characterization program. The Director shall invite public comment on any comments that the Director makes to DOE on review of the DOE semiannual reports or on any other comments that the Director makes to DOE on site characterization and performance assessment by placing the comments in a public forum to allow the public to comment on them after the Director's comments are sent to DOE.

(e) The Director shall transmit copies of all comments to DOE made by the Director under this section to the Governor and legislature of the State of Nevada and to the governing body of any affected Indian Tribe.

(f) The NRC shall place all correspondence between DOE and NRC resulting from the requirements of this section, including the reports described in paragraph (b) of this section, in the Publicly Available Records System (PARS) Library.

(g) The activities described in paragraphs (a) through (f) of this section constitute informal conference between a prospective applicant and the NRC staff, as described in § 2.101(a)(1) of this chapter, and are not part of a proceeding under the Atomic Energy Act of 1954, as amended. Accordingly, the issuance of the Director's comments made under this section does not constitute a commitment to issue any authorization or license, or in any way affect the authority of the Commission, Atomic Safety and Licensing Board, other presiding officers, or the Director, in any such proceeding.

[66 FR 55792, Nov. 2, 2001, as amended at 68 FR 58815, Oct. 10, 2003]

[2] In addition to the review of site characterization activities specified in this section, the Commission contemplates an ongoing review of other information on site investigation and site characterization, to allow early identification of potential licensing issues for timely resolution at the staff level.

LICENSE APPLICATION

§63.21 Content of application.

(a) An application consists of general information and a Safety Analysis Report. An environmental impact statement must be prepared in accordance with the Nuclear Waste Policy Act of 1982, as amended, and must accompany the application. Any Restricted Data or National Security Information must be separated from unclassified information. The application must be as complete as possible in the light of information that is reasonably available at the time of docketing.

(b) The general information must include:

(1) A general description of the proposed geologic repository at the Yucca Mountain site, identifying the location of the geologic repository operations area, the general character of the proposed activities, and the basis for the exercise of the Commission's licensing authority.

(2) Proposed schedules for construction, receipt of waste, and emplacement of wastes at the proposed geologic repository operations area.

(3) A description of the detailed security measures for physical protection of high-level radioactive waste in accordance with §73.51 of this chapter. This plan must include the design for physical protection, the licensee's safeguards contingency plan, and security organization personnel training and qualification plan. The plan must list tests, inspections, audits, and other means to be used to demonstrate compliance with such requirements.

(4) A description of the material control and accounting program to meet the requirements of §63.78.

(5) A description of work conducted to characterize the Yucca Mountain site.

(c) The Safety Analysis Report must include:

(1) A description of the Yucca Mountain site, with appropriate attention to those features, events, and processes of the site that might affect design of the geologic repository operations area and performance of the geologic repository. The description of the site must include information regarding features, events, and processes outside of the site to the extent the information is relevant and material to safety or performance of the geologic repository. The information referred to in this paragraph must include:

(i) The location of the geologic repository operations area with respect to the boundary of the site;

(ii) Information regarding the geology, hydrology, and geochemistry of the site, including geomechanical properties and conditions of the host rock;

(iii) Information regarding surface water hydrology, climatology, and meteorology of the site; and

(iv) Information regarding the location of the reasonably maximally exposed individual, and regarding local human behaviors and characteristics, as needed to support selection of conceptual models and parameters used for the reference biosphere and reasonably maximally exposed individual.

(2) Information relative to materials of construction of the geologic repository operations area (including geologic media, general arrangement, and approximate dimensions), and codes and standards that DOE proposes to apply to the design and construction of the geologic repository operations area.

(3) A description and discussion of the design of the various components of the geologic repository operations area and the engineered barrier system including:

(i) Dimensions, material properties, specifications, analytical and design methods used along with any applicable codes and standards;

(ii) The design criteria used and their relationships to the preclosure and postclosure performance objectives specified at §63.111(b), §63.113(b), and §63.113(c); and

(iii) The design bases and their relation to the design criteria.

(4) A description of the kind, amount, and specifications of the radioactive material proposed to be received and possessed at the geologic repository operations area at the Yucca Mountain site.

(5) A preclosure safety analysis of the geologic repository operations area, for the period before permanent closure, to ensure compliance with §63.111(a), as required by §63.111(c). For the purposes

of this analysis, it is assumed that operations at the geologic repository operations area will be carried out at the maximum capacity and rate of receipt of radioactive waste stated in the application.

(6) A description of the program for control and monitoring of radioactive effluents and occupational radiological exposures to maintain such effluents and exposures in accordance with the requirements of § 63.111.

(7) A description of plans for retrieval and alternate storage of the radioactive wastes, should retrieval be necessary.

(8) A description of design considerations that are intended to facilitate permanent closure and decontamination or decontamination and dismantlement of surface facilities.

(9) An assessment to determine the degree to which those features, events, and processes of the site that are expected to materially affect compliance with § 63.113—whether beneficial or potentially adverse to performance of the geologic repository—have been characterized, and the extent to which they affect waste isolation. Investigations must extend from the surface to a depth sufficient to determine principal pathways for radionuclide migration from the underground facility. Specific features, events, and processes of the geologic setting must be investigated outside of the site if they affect performance of the geologic repository.

(10) An assessment of the anticipated response of the geomechanical, hydrogeologic, and geochemical systems to the range of design thermal loadings under consideration, given the pattern of fractures and other discontinuities and the heat transfer properties of the rock mass and water.

(11) An assessment of the ability of the proposed geologic repository to limit radiological exposures to the reasonably maximally exposed individual for the period after permanent closure, as required by § 63.113(b).

(12) An assessment of the ability of the proposed geologic repository to limit releases of radionuclides into the accessible environment as required by § 63.113(c).

(13) An assessment of the ability of the proposed geologic repository to limit radiological exposures to the reasonably maximally exposed individual for the period after permanent closure in the event of human intrusion into the engineered barrier system as required by § 63.113(d).

(14) An evaluation of the natural features of the geologic setting and design features of the engineered barrier system that are considered barriers important to waste isolation as required by § 63.115.

(15) An explanation of measures used to support the models used to provide the information required in paragraphs (c)(9) through (c)(14) of this section. Analyses and models that will be used to assess performance of the geologic repository must be supported by using an appropriate combination of such methods as field tests, in situ tests, laboratory tests that are representative of field conditions, monitoring data, and natural analog studies.

(16) An identification of those structures, systems, and components of the geologic repository, both surface and subsurface, that require research and development to confirm the adequacy of design. For structures, systems, and components important to safety and for the engineered and natural barriers important to waste isolation, DOE shall provide a detailed description of the programs designed to resolve safety questions, including a schedule indicating when these questions would be resolved.

(17) A description of the performance confirmation program that meets the requirements of subpart F of this part.

(18) An identification and justification for the selection of those variables, conditions, or other items that are determined to be probable subjects of license specifications. Special attention must be given to those items that may significantly influence the final design.

(19) An explanation of how expert elicitation was used.

(20) A description of the quality assurance program to be applied to the structures, systems, and components important to safety and to the engineered and natural barriers important to waste isolation. The description of the quality assurance program must

include a discussion of how the applicable requirements of § 63.142 will be satisfied.

(21) A description of the plan for responding to, and recovering from, radiological emergencies that may occur at any time before permanent closure and decontamination or decontamination and dismantlement of surface facilities, as required by § 63.161.

(22) The following information concerning activities at the geologic repository operations area:

(i) The organizational structure of DOE as it pertains to construction and operation of the geologic repository operations area, including a description of any delegations of authority and assignments of responsibilities, whether in the form of regulations, administrative directives, contract provisions, or otherwise.

(ii) Identification of key positions that are assigned responsibility for safety at and operation of the geologic repository operations area.

(iii) Personnel qualifications and training requirements.

(iv) Plans for startup activities and startup testing.

(v) Plans for conduct of normal activities, including maintenance, surveillance, and periodic testing of structures, systems, and components of the geologic repository operations area.

(vi) Plans for permanent closure and plans for the decontamination or decontamination and dismantlement of surface facilities.

(vii) Plans for any uses of the geologic repository operations area at the Yucca Mountain site for purposes other than disposal of radioactive wastes, with an analysis of the effects, if any, that such uses may have on the operation of the structures, systems, and components important to safety and the engineered and natural barriers important to waste isolation.

(23) A description of the program to be used to maintain the records described in §§ 63.71 and 63.72.

(24) A description of the controls that DOE will apply to restrict access and to regulate land use at the Yucca Mountain site and adjacent areas, including a conceptual design of monuments that would be used to identify the site after permanent closure.

(d) The applicant for a license to receive and possess source, special nuclear, and byproduct material at a geologic repository at Yucca Mountain, Nevada, shall protect Safeguards Information in accordance with the requirements in § 73.21, and the requirements in § 73.22, or § 73.23 of this chapter, as applicable, and shall protect classified information in accordance with the requirements of parts 25 and 95 of this chapter, as applicable.

[66 FR 55792, Nov. 2, 2001, as amended at 73 FR 63572, Oct. 24, 2008]

§ 63.22 Filing and distribution of application.

(a) An application for a construction authorization for a high-level radioactive waste repository at a geologic repository operations area at Yucca Mountain, and an application for a license to receive and possess source, special nuclear, or byproduct material at a geologic repository operations area at the Yucca Mountain site that has been characterized, any amendments to the application, and an accompanying environmental impact statement and any supplements, must be signed by the Secretary of Energy or the Secretary's authorized representative and must be filed with the Director in triplicate on paper and optical storage media.

(b) DOE shall submit 30 additional copies, on paper and optical storage media, of each portion of the application and any amendments, and each environmental impact statement and any supplements. DOE shall maintain the capability to generate additional copies for distribution in accordance with written instructions from the Director or the Director's designee.

(c) On notification of the appointment of an Atomic Safety and Licensing Board, DOE shall update the application, eliminating all superseded information, and supplement the environmental impact statement if necessary, and serve the updated application and environmental impact statement (as it may have been supplemented) as directed by the Board. Any subsequent amendments to the application or supplements to the environmental impact statement must be served in the same manner.

(d) When an application, and any amendment to it is filed, copies on paper and optical storage media must be made available in appropriate locations near the proposed geologic repository operations areas at the Yucca Mountain site for inspection by the public. These copies must be updated as amendments to the application are made. The environmental impact statement and any supplements to it must be made available in the same manner. An updated copy of the application, and the environmental impact statement and supplements, must be produced at any public hearing held by the Commission on the application for use by any party to the proceeding.

(e) DOE shall certify that the updated copies of the application, and the environmental impact statement as it may have been supplemented, as referred to in paragraphs (c) and (d) of this section, contain the current contents of these documents submitted as required by this part.

[66 FR 55792, Nov. 2, 2001, as amended at 68 FR 58815, Oct. 10, 2003; 69 FR 2280, Jan. 14, 2004]

§ 63.23 Elimination of repetition.

In its application or environmental impact statement, DOE may incorporate, by reference, information contained in previous applications, statements, or reports filed with the Commission, if the references are clear and specific and copies of the information incorporated are made available to the public locations near the site of the proposed geologic repository, as specified in § 63.22(d).

§ 63.24 Updating of application and environmental impact statement.

(a) The application must be as complete as possible in light of the information that is reasonably available at the time of docketing.

(b) DOE shall update its application in a timely manner so as to permit the Commission to review, before issuance of a license—

(1) Additional geologic, geophysical, geochemical, hydrologic, meteorologic, materials, design, and other data obtained during construction;

(2) Conformance of construction of structures, systems, and components with the design;

(3) Results of research programs carried out to confirm the adequacy of designs, conceptual models, parameter values, and estimates of performance of the geologic repository.

(4) Other information bearing on the Commission's issuance of a license that was not available at the time a construction authorization was issued.

(c) DOE shall supplement its environmental impact statement in a timely manner so as to take into account the environmental impacts of any substantial changes in its proposed actions or any significant new circumstances or information relevant to environmental concerns bearing on the proposed action or its impacts.

CONSTRUCTION AUTHORIZATION

§ 63.31 Construction authorization.

On review and consideration of an application and environmental impact statement submitted under this part, the Commission may authorize construction of a geologic repository operations area at the Yucca Mountain site if it determines:

(a) *Safety.* (1) That there is reasonable assurance that the types and amounts of radioactive materials described in the application can be received and possessed in a geologic repository operations area of the design proposed without unreasonable risk to the health and safety of the public; and

(2) That there is reasonable expectation that the materials can be disposed of without unreasonable risk to the health and safety of the public.

(3) In arriving at these determinations, the Commission shall consider whether—

(i) DOE has described the proposed geologic repository as specified at § 63.21;

(ii) The site and design comply with the performance objectives and requirements contained in subpart E of this part;

(iii) DOE's quality assurance program complies with the requirements of subpart G of this part;

(iv) DOE's personnel training program complies with the criteria contained in subpart H of this part;

(v) DOE's emergency plan complies with the criteria contained in subpart I of this part; and

(vi) DOE's proposed operating procedures to protect health and to minimize danger to life or property are adequate.

(b) *Common defense and security*. That there is reasonable assurance that the activities proposed in the application will not be inimical to the common defense and security.

(c) *Environmental*. That, after weighing the environmental, economic, technical, and other benefits against environmental costs, and considering available alternatives, the action called for is the issuance of the construction authorization, with any appropriate conditions to protect environmental values.

§ 63.32 Conditions of construction authorization.

(a) In a construction authorization for a geologic repository operations area at the Yucca Mountain site, the Commission shall include any conditions it considers necessary to protect the health and safety of the public, the common defense and security, or environmental values.

(b) The Commission shall incorporate provisions in the construction authorization requiring DOE to furnish periodic or special reports regarding:

(1) Progress of construction;

(2) Any data about the site, obtained during construction, that are not within the predicted limits on which the facility design was based;

(3) Any deficiencies, in design and construction, that, if uncorrected, could adversely affect safety at any future time; and

(4) Results of research and development programs being conducted to resolve safety questions.

(c) The construction authorization for a geologic repository operations area at the Yucca Mountain site will include restrictions on subsequent changes to the features of the geologic repository and the procedures authorized. The restrictions that may be imposed under this paragraph can include measures to prevent adverse effects on the geologic setting as well as measures related to the design and construction of the geologic repository operations area. These restrictions will fall into three categories of descending importance to public health and safety, as follows:

(1) Those features and procedures that may not be changed without—

(i) 60 days prior notice to the Commission;

(ii) 30 days notice of opportunity for a prior hearing; and

(iii) Prior Commission approval;

(2) Those features and procedures that may not be changed without—

(i) 60 days prior notice to the Commission; and

(ii) Prior Commission approval; and

(3) Those features and procedures that may not be changed without 60 days notice to the Commission. Features and procedures falling in this paragraph section may not be changed without prior Commission approval if the Commission, after having received the required notice, so orders.

(d) A construction authorization must be subject to the limitation that a license to receive and possess source, special nuclear, or byproduct material at the Yucca Mountain site geologic repository operations area may not be issued by the Commission until;

(1) DOE has updated its application, as specified at § 63.24; and

(2) The Commission has made the findings stated in § 63.41.

§ 63.33 Amendment of construction authorization.

(a) An application for amendment of a construction authorization must be filed with the Commission that fully describes any desired changes and follows, as far as applicable, the content requirements prescribed in § 63.21.

(b) In determining whether an amendment of a construction authorization will be approved, the Commission will be guided by the considerations that govern the issuance of the initial construction authorization, to the extent applicable.

LICENSE ISSUANCE AND AMENDMENT

§ 63.41 Standards for issuance of a license.

A license to receive and possess source, special nuclear, or byproduct material at a geologic repository operations area at the Yucca Mountain site may be issued by the Commission on finding that—

(a) Construction of the geologic repository operations area has been substantially completed in conformity with the application as amended, the provisions of the Atomic Energy Act, and the rules and regulations of the Commission. Construction may be considered substantially complete for the purposes of this paragraph if the construction of—

(1) Surface and interconnecting structures, systems, and components; and

(2) Any underground storage space required for initial operation, are substantially complete.

(b) The activities to be conducted at the geologic repository operations area will be in conformity with the application as amended, the provisions of the Atomic Energy Act and the Energy Reorganization Act, and the rules and regulations of the Commission.

(c) The issuance of the license will not be inimical to the common defense and security and will not constitute an unreasonable risk to the health and safety of the public.

(d) Adequate protective measures can and will be taken in the event of a radiological emergency at any time before permanent closure and decontamination or decontamination and dismantlement of surface facilities.

(e) All applicable requirements of part 51 of this chapter have been satisfied.

§ 63.42 Conditions of license.

(a) The Commission shall include any conditions, including license specifications, it considers necessary to protect the health and safety of the public, the common defense and security, and environmental values in a license issued under this part.

(b) Whether stated in the license or not, the following are considered to be conditions in every license issued:

(1) The license is subject to revocation, suspension, modification, or amendment for cause, as provided by the Atomic Energy Act and the Commission's regulations.

(2) DOE shall, at any time while the license is in effect, on written request of the Commission, submit written statements to enable the Commission to determine whether or not the license should be modified, suspended, or revoked.

(3) The license is subject to the provisions of the Atomic Energy Act now or hereafter in effect and to all rules, regulations, and orders of the Commission. The terms and conditions of the license are subject to amendment, revision, or modification, by reason of amendments to or by reason of rules, regulations, and orders issued in accordance with the terms of the Atomic Energy Act.

(c) Each license includes the provisions set forth in section 183 b-d, inclusive, of the Atomic Energy Act, whether or not these provisions are expressly set forth in the license.

(d) A license issued under this part includes the provisions set forth in section 114(d) of the Nuclear Waste Policy Act, as amended, defining the quantity of solidified high-level radioactive waste and spent nuclear fuel, until such time as a second repository is in operation, whether or not these provisions are expressly set forth in the license.

(e) The licensee (Department of Energy) shall ensure that Safeguards Information is protected against unauthorized disclosure in accordance with the requirements in § 73.21, and the requirements in § 73.22, or § 73.23 of this chapter, as applicable, and shall protect classified information in accordance with the requirements of parts 25 and 95 of this chapter, as applicable.

[66 FR 55792, Nov. 2, 2001, as amended at 73 FR 63572, Oct. 24, 2008]

§ 63.43 License specification.

(a) A license issued under this part includes license conditions derived from the analyses and evaluations included in the application, including amendments made before a license is issued, together with any additional

conditions the Commission finds appropriate.

(b) License conditions include items in the following categories:

(1) Restrictions as to the physical and chemical form and radioisotopic content of radioactive waste.

(2) Restrictions as to size, shape, and materials and methods of construction of radioactive waste packaging.

(3) Restrictions as to the amount of waste permitted per unit volume of storage space, considering the physical characteristics of both the waste and the host rock.

(4) Requirements relating to test, calibration, or inspection, to assure that the foregoing restrictions are observed.

(5) Controls to be applied to restrict access and to avoid disturbance to the site and to areas outside the site where conditions may affect compliance with §§ 63.111 and 63.113.

(6) Administrative controls, which are the provisions relating to organization and management, procedures, recordkeeping, review and audit, and reporting necessary to assure that activities at the facility are conducted in a safe manner and in conformity with the other license specifications.

§ 63.44 Changes, tests, and experiments.

(a) Definitions for the purposes of this section:

(1) *Change* means a modification or addition to, or removal from, the geologic repository operations area design or procedures that affects a design function, event sequence, method of performing or controlling the function, or an evaluation that demonstrates that intended functions will be accomplished.

(2) *Departure from a method of evaluation described in the Safety Analysis Report (SAR) (as updated) used in establishing the preclosure safety analyses or performance assessment* means:

(i) Changing any of the elements of the method described in the SAR (as updated) unless the results of the analysis are conservative or essentially the same; or

(ii) Changing from a method described in the SAR to another method unless that method has been approved by NRC for the intended application, addition or removal.

(3) *Safety Analysis Report (SAR) (as updated)* means the Safety Analysis Report for the geologic repository, submitted in accordance with § 63.21, as updated in accordance with § 63.24.

(4) *Geologic repository operations area as described in the SAR (as updated)* means:

(i) The structures, systems, and components important to safety or barriers important to waste isolation that are described in the SAR (as updated); and

(ii) The design and performance requirements for such structures, systems, and components described in the SAR (as updated).

(5) *Procedures as described in the SAR (as updated)* means those procedures that contain information described in the SAR (as updated) such as how structures, systems, and components important to safety, or important to waste isolation, are operated or controlled.

(6) *Tests or experiments not described in the SAR (as updated)* means any condition where the geologic repository operations area or any of its structures, systems, and components important to safety, or important to waste isolation, are utilized, controlled, or altered in a manner which is either:

(i) Outside the reference bounds of the design bases as described in the SAR (as updated); or

(ii) Inconsistent with the analyses or descriptions in the SAR (as updated).

(b)(1) DOE may make changes in the geologic repository operations area as described in the SAR (as updated), make changes in the procedures as described in the SAR (as updated), and conduct tests or experiments not described in the SAR (as updated), without obtaining either an amendment of construction authorization under § 63.33 or a license amendment under § 63.45, if:

(i) A change in the conditions incorporated in the construction authorization or license is not required; and

(ii) The change, test, or experiment does not meet any of the criteria in paragraph (b)(2) of this section.

(2) DOE shall obtain an amendment of construction authorization under § 63.33 or a license amendment under

§ 63.45, before implementing a change, test, or experiment if it would:

(i) Result in more than a minimal increase in the frequency of occurrence of an event sequence previously evaluated in the SAR (as updated);

(ii) Result in more than a minimal increase in the likelihood of occurrence of a malfunction of structures, systems, components important to safety, or important to waste isolation, which were previously evaluated in the SAR (as updated);

(iii) Result in more than a minimal increase in the consequences of an event sequence previously evaluated in the SAR (as updated);

(iv) Result in more than a minimal increase in the consequences of malfunction of structures, systems, components important to safety, or important to waste isolation, which were previously evaluated in the SAR (as updated);

(v) Create the possibility for an event sequence, or of a pathway for release of radionuclides, of a different type than any evaluated previously in the SAR (as updated);

(vi) Create the possibility for a malfunction of structures, systems, and components important to safety, or important to waste isolation, with a different result than any evaluated previously in the SAR (as updated);

(vii) Result in a departure from a method of evaluation described in the SAR (as updated) used in establishing the preclosure safety analysis or the performance assessment.

(3) In implementing this paragraph, the SAR (as updated) is considered to include SAR changes resulting from evaluations performed pursuant to this section and from safety analyses performed under § 63.33 or § 63.45, as applicable, after the last Safety Analysis Report was updated under § 63.24.

(4) The provisions in this section do not apply to changes to the geologic repository operations area or procedures when the applicable regulations establish more specific criteria for accomplishing such changes.

(c)(1) DOE shall maintain records of changes in the geologic repository operations area at the Yucca Mountain site, of changes in procedures, and of tests and experiments made under paragraph (b) of this section. These records must include a written evaluation that provides the bases for the determination that the change, test, or experiment does not require an amendment of construction authorization or license amendment under paragraph (b) of this section.

(2) No less frequently than every 24 months, DOE shall prepare a report containing a brief description of such changes, tests, and experiments, including a summary of the evaluation of each. These written reports must be sent to the NRC using an appropriate method listed in § 63.4; addressed: ATTN: Document Control Desk; Director, Office of Nuclear Material Safety and Safeguards; U.S. Nuclear Regulatory Commission, Washington, DC 20555–001; and DOE shall furnish the report to the appropriate NRC Regional Office shown in appendix D to part 20 of this chapter. Any report submitted under this paragraph must be made a part of the public record of the licensing proceedings.

(d) Changes to the quality assurance program description required by § 63.21(c)(20) must be processed in accordance with § 63.144.

[66 FR 55792, Nov. 2, 2001, as amended at 68 FR 58815, Oct. 10, 2003]

§ 63.45 Amendment of license.

(a) An application for amendment of a license may be filed with the Commission fully describing the changes desired and following as far as applicable the format prescribed for license applications.

(b) In determining whether an amendment of a license will be approved, the Commission will be guided by the considerations that govern the issuance of the initial license, to the extent applicable.

§ 63.46 Particular activities requiring license amendment.

(a) Unless expressly authorized in the license, a license amendment is required for any of the following activities:

(1) Any action that would make emplaced high-level radioactive waste irretrievable or that would substantially increase the difficulty of retrieving the emplaced waste;

(2) Dismantling of structures;

(3) Removal or reduction of controls applied to restrict access to or avoid disturbance of the site and to areas outside the site where conditions may affect compliance with §§ 63.111 and 63.113;

(4) Destruction or disposal of records required to be maintained under the provisions of this part;

(5) Any substantial change to the design or operating procedures from that specified in the license, except as authorized in § 63.44; and

(6) Permanent closure.

(b) An application for an amendment must be filed, and will be reviewed, as specified in § 63.45.

US/IAEA SAFEGUARDS AGREEMENT

§ 63.47 Facility information and verification.

(a) In response to a written request by the Commission, each applicant for a construction authorization or license and each recipient of a construction authorization or a license shall submit facility information, as described in § 75.10 of this chapter, on IAEA Design Information Questionnaire forms and site information on DOC/NRC Form AP–A and associated forms;

(b) As required by the Additional Protocol, applicants and licensees specified in paragraph (a) of this section shall submit location information described in § 75.11 of this chapter on DOC/NRC Form AP–1 and associated forms;

(c) Shall permit verification thereof by the International Atomic Energy Agency (IAEA) and take other action as necessary to implement the US/IAEA Safeguards Agreement, as described in Part 75 of this chapter.

[73 FR 78606, Dec. 23, 2008, as amended at 85 FR 65663, Oct. 16, 2020]

PERMANENT CLOSURE

§ 63.51 License amendment for permanent closure.

(a) DOE shall submit an application to amend the license before permanent closure of a geologic repository at the Yucca Mountain site. The submission must consist of an update of the license application submitted under §§ 63.21 and 63.22, including:

(1) An update of the assessment of the performance of the geologic repository for the period after permanent closure. The updated assessment must include any performance confirmation data collected under the program required by subpart F, and pertinent to compliance with § 63.113.

(2) A description of the program for post-permanent closure monitoring of the geologic repository.

(3) A detailed description of the measures to be employed—such as land use controls, construction of monuments, and preservation of records—to regulate or prevent activities that could impair the long-term isolation of emplaced waste within the geologic repository and to assure that relevant information will be preserved for the use of future generations. As a minimum, these measures must include:

(i) Identification of the site and geologic repository operations area by monuments that have been designed, fabricated, and emplaced to be as permanent as is practicable;

(ii) Placement of records in the archives and land record systems of local, State, and Federal government agencies, and archives elsewhere in the world, that would be likely to be consulted by potential human intruders—such records to identify the location of the geologic repository operations area, including the underground facility, boreholes, shafts and ramps, and the boundaries of the site, and the nature and hazard of the waste; and

(iii) A program for continued oversight, to prevent any activity at the site that poses an unreasonable risk of breaching the geologic repository's engineered barriers; or increasing the exposure of individual members of the public to radiation beyond allowable limits.

(4) Geologic, geophysical, geochemical, hydrologic, and other site data that are obtained during the operational period, pertinent to compliance with § 63.113.

(5) The results of tests, experiments, and any other analyses relating to backfill of excavated areas, shaft, borehole, or ramp sealing, drip shields, waste packages, interactions between

natural and engineered systems, and any other tests, experiments, or analyses pertinent to compliance with § 63.113.

(6) Any substantial revision of plans for permanent closure.

(7) Other information bearing on permanent closure that was not available at the time a license was issued.

(b) If necessary, to take into account the environmental impact of any substantial changes in the permanent closure activities proposed to be carried out or any significant new information regarding the environmental impacts of permanent closure, DOE shall also supplement its environmental impact statement and submit this statement, as supplemented, with the application for license amendment.

§ 63.52 Termination of license.

(a) Following permanent closure and the decontamination or decontamination and dismantlement of surface facilities at the Yucca Mountain site, DOE may apply for an amendment to terminate the license.

(b) The application must be filed and will be reviewed in accordance with the provisions of § 63.45 and this section.

(c) A license may be terminated only when the Commission finds with respect to the geologic repository:

(1) That the final disposition of radioactive wastes has been made in conformance with DOE's plan, as amended and approved as part of the license.

(2) That the final state of the geologic repository operations area conforms to DOE's plans for permanent closure and DOE's plans for the decontamination or decontamination and dismantlement of surface facilities, as amended and approved as part of the license.

(3) That the termination of the license is authorized by law, including sections 57, 62, and 81 of the Atomic Energy Act, as amended.

Subpart C—Participation by State Government, Affected Units of Local Government, and Affected Indian Tribes

§ 63.61 Provision of information.

(a) The Director shall provide the Governor and the Nevada State legislature, affected units of local government, and the governing body of any affected Indian Tribe, with timely and complete information regarding determinations or plans made by the Commission with respect to the Yucca Mountain site. Information must be provided concerning the site characterization, siting, development, design, licensing, construction, operation, regulation, permanent closure, or decontamination and dismantlement of surface facilities of the geologic repository operations area at the site.

(b) Notwithstanding paragraph (a) of this section, the Director is not required to distribute any document to any entity if, with respect to the document, that entity or its counsel is included on a service list prepared under part 2 of this chapter.

(c) The NRC shall place communications by the Director under this section in the Publicly Available Records System (PARS) Library and furnish copies to DOE.

[66 FR 55792, Nov. 2, 2001, as amended at 68 FR 58815, Oct. 10, 2003]

§ 63.62 Site review.

(a) The Director shall make the NRC staff available to consult with representatives of the State of Nevada, affected units of local government, and affected Indian Tribes regarding the status of site characterization at the Yucca Mountain site.

(b) Requests for consultation must be made in writing to the Director.

(c) Consultation under this section may include:

(1) Keeping the parties informed of the Director's views on the progress of site characterization.

(2) Review of applicable NRC regulations, licensing procedures, schedules, and opportunities for State, affected units of local government, and Tribe participation in the Commission's regulatory activities.

(3) Cooperation in development of proposals for State, affected units of local government, and Tribal participation in license reviews.

§ 63.63 Participation in license reviews.

(a) The State, affected units of local government, and affected Indian Tribes may participate in license reviews as provided in subpart J of part 2 of this chapter.

(b) In addition, a State, or an affected unit of local government, or an affected Indian Tribe may submit a proposal to the Director to facilitate its participation in the review of the license application. The proposal may be submitted at any time and must contain a description and schedule of how the State, or affected unit of local government, or affected Indian Tribe wishes to participate in the review, or what services or activities the State, or affected unit of local government, or affected Indian Tribe wishes the NRC to carry out, and how the services or activities proposed to be carried out by the NRC would contribute to this participation. The proposal may include educational or information services (seminars, public meetings) or other actions on the part of NRC, such as establishing additional public document rooms or employment or exchange of State personnel under the Intergovernmental Personnel Act.

(c) The Director shall arrange for a meeting between the representatives of the State, or affected unit of local government, or affected Indian Tribe and the NRC staff, to discuss any proposal submitted under paragraph (b) of this section, with a view to identifying any modifications that may contribute to the effective participation by such State, or affected unit of local government, or Tribe.

(d) Subject to the availability of funds, the Director shall approve all or any part of a proposal, as it may be modified through the meeting described in paragraph (c) of this section, if it is determined that:

(1) The proposed activities are suitable in light of the type and magnitude of impacts that the State, or affected unit of local government, or affected Indian Tribe may bear;

(2) The proposed activities—

(i) Will enhance communications between NRC and the State, or affected unit of local government, or affected Indian Tribe;

(ii) Will make a productive and timely contribution to the review; and

(iii) Are authorized by law.

(e) The Director shall advise the State, or affected unit of local government, or affected Indian Tribe whether its proposal has been accepted or denied. If all or any part of a proposal is denied, the Director shall state the reason for the denial.

(f) The NRC shall place all proposals submitted under this section, and responses to them, in the Publicly Available Records System (PARS) Library.

[66 FR 55792, Nov. 2, 2001, as amended at 68 FR 58816, Oct. 10, 2003]

§ 63.64 Notice to State.

If the Governor and legislature of the State of Nevada have jointly designated, on their behalf, a single person or entity to receive notice and information from the Commission under this part, the Commission will provide the notice and information to the jointly designated person or entity instead of the Governor and legislature separately.

§ 63.65 Representation.

Any person who acts under this subpart as a representative for the State of Nevada (or for the Governor or legislature of Nevada), for an affected unit of local government, or for an affected Indian Tribe shall include in the request or other submission, or at the request of the Commission, a statement of the basis of his or her authority to act in this capacity.

Subpart D—Records, Reports, Tests, and Inspections

§ 63.71 Records and reports.

(a) DOE shall maintain records and make reports in connection with the licensed activity that are required by the conditions of the license or by rules, regulations, and orders of the Commission, as authorized by the Atomic Energy Act and the Energy Reorganization Act.

(b) Records of the receipt, handling, and disposition of radioactive waste at a geologic repository operations area at the Yucca Mountain site must contain sufficient information to provide a complete history of the movement of the waste from the shipper through all phases of storage and disposal. DOE shall retain these records in a manner that ensures their usability for future generations in accordance with § 63.51(a)(3).

§ 63.72 Construction records.

(a) DOE shall maintain records of construction of the geologic repository operations area at the Yucca Mountain site in a manner that ensures their usability for future generations in accordance with § 63.51(a)(3).

(b) The records required under paragraph (a) of this section must include at least the following—

(1) Surveys of the underground facility excavations, shafts, ramps, and boreholes referenced to readily identifiable surface features or monuments;

(2) A description of the materials encountered;

(3) Geologic maps and geologic cross-sections;

(4) Locations and amount of seepage;

(5) Details of equipment, methods, progress, and sequence of work;

(6) Construction problems;

(7) Anomalous conditions encountered;

(8) Instrument locations, readings, and analysis;

(9) Location and description of structural support systems;

(10) Location and description of dewatering systems;

(11) Details, methods of emplacement, and location of seals used; and

(12) Facility design records (e.g, design specifications and ''as built'' drawings).

§ 63.73 Reports of deficiencies.

(a) DOE shall promptly notify the Commission of each deficiency found in the characteristics of the Yucca Mountain site, and design, and construction of the geologic repository operations area that, were it to remain uncorrected, could—

(1) Adversely affect safety at any future time;

(2) Represent a significant deviation from the design criteria and design basis stated in the design application; or

(3) Represent a deviation from the conditions stated in the terms of a construction authorization or the license, including license specifications.

(b) DOE shall implement a program for evaluating and reporting deviations and failures to comply, to identify defects and failures to comply associated with substantial safety hazards, based on the applicable requirements in 10 CFR 50.55(e) as it applies to the construction authorization and design of the geologic repository operations area at the Yucca Mountain site.

(c) DOE shall implement a program of reporting specific events and conditions that is the same as that specified in 10 CFR 72.75.

(d) The requisite notification must be as specified in the applicable regulation. By an appropriate method listed in § 63.4 of this chapter, written reports must be submitted to NRC addressed: ATTN: Document Control Desk; Director, Office of Nuclear Material Safety and Safeguards; U.S. Nuclear Regulatory Commission, Washington, DC 20555–001; and to the NRC onsite representative. DOE shall also furnish the report to the appropriate NRC Regional Office shown in appendix D to part 20 of this chapter.

[66 FR 55792, Nov. 2, 2001, as amended at 68 FR 58815, Oct. 10, 2003]

§ 63.74 Tests.

(a) DOE shall perform, or permit the Commission to perform, those tests the Commission considers appropriate or necessary for the administration of the regulations in this part. This may include tests of—

(1) Radioactive waste,

(2) The geologic repository, including portions of the geologic setting and the structures, systems, and components constructed or placed therein,

(3) Radiation detection and monitoring instruments, and

(4) Other equipment and devices used in connection with the receipt, handling, or storage of radioactive waste.

(b) The tests required under this section must include a performance confirmation program carried out in accordance with subpart F of this part.

§ 63.75 Inspections.

(a) DOE shall allow the Commission to inspect the premises of the geologic repository operations area at the Yucca Mountain site and adjacent areas to which DOE has rights of access.

(b) DOE shall make available to the Commission for inspection, on reasonable notice, records kept by DOE pertaining to activities under this part.

(c)(1) DOE shall, on requests by the Director, Office of Nuclear Material Safety and Safeguards, provide rent-free office space for the exclusive use of the Commission inspection personnel. Heat, air-conditioning, light, electrical outlets, and janitorial services must be furnished by DOE. The office must be convenient to and have full access to the facility and must provide the inspector both visual and acoustic privacy.

(2) The space provided must be adequate to accommodate two full-time inspectors, and other transient NRC personnel and will be generally commensurate with other office facilities at the Yucca Mountain site geologic repository operations area. A space of 250 square feet either within the geologic repository operations area's office complex or in an office trailer or other onsite space at the geologic repository operations area is suggested as a guide. For locations at which activities are carried out under licenses issued under other parts of this chapter, additional space may be requested to accommodate additional full-time inspectors. The office space provided is subject to the approval of the Director, Office of Nuclear Material Safety and Safeguards. All furniture, supplies, and communication equipment will be furnished by the Commission.

(3) DOE shall afford any NRC resident inspector assigned to the Yucca Mountain site or other NRC inspectors identified by the Regional Administrator as likely to inspect the Yucca Mountain facility, immediate unfettered access, equivalent to access provided regular employees, after proper identification and compliance with applicable access control measures for security, radiological protection, and personal safety.

§ 63.78 Material control and accounting records and reports.

DOE shall implement a program of material control and accounting (and accidental criticality reporting) that is the same as that specified in §§ 72.72, 72.74, 72.76, and 72.78 of this chapter.

Subpart E—Technical Criteria

§ 63.101 Purpose and nature of findings.

(a)(1) Subpart B prescribes the standards for issuance of a license to receive and possess source, special nuclear, or byproduct material at a geologic repository operations area at the Yucca Mountain site. In particular, § 63.41(c) requires a finding that the issuance of a license will not constitute an unreasonable risk to the health and safety of the public. The purpose of this subpart is to set out the performance objectives for postclosure performance of the geologic repository and other criteria that, if satisfied, support a finding of no unreasonable risk. Postclosure performance objectives for the geologic repository include a requirement to limit radiological exposures to the reasonably maximally exposed individual, a requirement to limit releases of radionuclides to the accessible environment to protect groundwater, and a requirement to limit radiological exposures to the reasonably maximally exposed individual in the event of human intrusion (see § 63.113(b), (c), and (d), respectively).

(2) Although the postclosure performance objectives specified at § 63.113 are generally stated in unqualified terms, it is not expected that complete assurance that the requirements will be met can be presented. A reasonable expectation, on the basis of the record before the Commission, that the postclosure performance objectives will be met, is the general standard required. Proof that the geologic repository will conform with the objectives for postclosure performance is not to be had in the ordinary sense of the word because of the uncertainties inherent

in the understanding of the evolution of the geologic setting, biosphere, and engineered barrier system. For such long-term performance, what is required is reasonable expectation, making allowance for the time period, hazards, and uncertainties involved, that the outcome will conform with the objectives for postclosure performance for the geologic repository. Demonstrating compliance will involve the use of complex predictive models that are supported by limited data from field and laboratory tests, site-specific monitoring, and natural analog studies that may be supplemented with prevalent expert judgment. Compliance demonstrations should not exclude important parameters from assessments and analyses simply because they are difficult to precisely quantify to a high degree of confidence. The performance assessments and analyses should focus upon the full range of defensible and reasonable parameter distributions rather than only upon extreme physical situations and parameter values. Further, in reaching a determination of reasonable expectation, the Commission may supplement numerical analyses with qualitative judgments including, for example, consideration of the degree of diversity among the multiple barriers as a measure of the resiliency of the geologic repository.

(b) Subpart B lists findings that must be made in support of an authorization to construct a geologic repository operations area at the Yucca Mountain site. Prior to closure, § 63.31(a)(1) requires a finding that there is reasonable assurance that the types and amounts of radioactive materials described in the application can be received, possessed, and stored in a geologic repository operations area of the design proposed without unreasonable risk to the health and safety of the public. After permanent closure, § 63.31(a)(2) requires the Commission to consider whether there is a reasonable expectation the site and design comply with the postclosure performance objectives. Once again, although the criteria may be written in unqualified terms, the demonstration of compliance must take uncertainties and gaps in knowledge into account so that the Commission can make the specified finding with respect to paragraph (a)(2) of § 63.31.

§ 63.102 Concepts.

This section provides a functional overview of this Subpart E. In the event of any inconsistency, the definitions in § 63.2 prevail.

(a) *The HLW facility at the Yucca Mountain site.* NRC exercises licensing and related regulatory authority over those facilities described in section 202 (3) and (4) of the Energy Reorganization Act of 1974, including the site at Yucca Mountain, as designated by the Energy Policy Act of 1992.

(b) *The geologic repository operations area.* (1) These regulations deal with the exercise of authority with respect to a particular class of HLW facility—namely, a geologic repository operations area at Yucca Mountain.

(2) *A geologic repository operations area* consists of those surface and subsurface areas of the site that are part of a geologic repository where radioactive waste handling activities are conducted. The underground structure, backfill materials, if any, and openings that penetrate the underground structure (e.g., ramps, shafts and boreholes, including their seals), are designated the *underground facility*.

(3) The exercise of Commission authority requires that the geologic repository operations area be used for storage (which includes disposal) of *high-level radioactive wastes* (HLW).

(4) HLW includes irradiated reactor fuel as well as reprocessing wastes. However, if DOE proposes to use the geologic repository operations area for storage of radioactive waste other than HLW, the storage of this radioactive waste is subject to the requirements of this part.

(c) *Stages in the licensing process.* There are several stages in the licensing process. The *site characterization* stage, when the performance confirmation program is started, begins before submission of a license application, and may result in consequences requiring evaluation in the license review. The construction stage would follow

after the issuance of a construction authorization. A period of operations follows the Commission's issuance of a license. The period of operations includes the time during which *emplacement* of wastes occurs; any subsequent period before permanent closure during which the emplaced wastes are *retrievable*; and *permanent closure*, which includes sealing openings to the repository. Permanent closure represents the end of the performance confirmation program; final backfilling of the underground facility, if appropriate; and the sealing of shafts, ramps, and boreholes.

(d) *Areas related to isolation*. Although the activities subject to regulation under this part are those to be carried out at the geologic repository operations area, the licensing process also considers characteristics of adjacent areas that are defined in other ways. There must be an area surrounding the geologic repository operations area, that could include either a portion or all of the site, within which DOE shall exercise specified controls to prevent adverse human actions after permanent closure. There is an area, designated the geologic setting, which includes the geologic, hydrologic, and geochemical systems of the region in which the site and geologic repository operations area are located. The geologic repository operations area, plus the portion of the geologic setting that provides isolation of the radioactive waste, make up the geologic repository.

(e) *Performance objectives through permanent closure*. Before permanent closure, the geologic repository operations area is required to limit radiation levels and radiological exposures, in both restricted and unrestricted areas, and releases of radioactive materials to unrestricted areas, as specified at § 63.111(a).

(f) *Preclosure safety analysis*. Section 63.111 includes performance objectives for the geologic repository operations area for the period before permanent closure and decontamination or permanent closure, decontamination, and dismantlement of surface facilities. The preclosure safety analysis is a systematic examination of the site; the design; and the potential hazards, initiating events and their resulting event sequences and potential radiological exposures to workers and the public. Initiating events are to be considered for inclusion in the preclosure safety analysis for determining event sequences only if they are reasonable (*i.e.*, based on the characteristics of the geologic setting and the human environment, and consistent with precedents adopted for nuclear facilities with comparable or higher risks to workers and the public). The analysis identifies structures, systems, and components important to safety.

(g) *Performance objectives after permanent closure*. After permanent closure, the geologic repository is required to:

(1) Limit radiological exposures to the reasonably maximally exposed individual, as specified at § 63.113(b);

(2) Limit releases of radionuclides to the accessible environment to protect groundwater, as specified at § 63.113(c); and

(3) Limit radiological exposures to the reasonably maximally exposed individual in the event of human intrusion, as specified at § 63.113(d).

(h) *Multiple barriers*. Section 63.113(a) requires that the geologic repository include multiple barriers, both natural and engineered. Geologic disposal of HLW is predicated on the expectation that one or more aspects of the geologic setting will be capable of contributing to the isolation of radioactive waste and thus be a barrier important to waste isolation. Although there is an extensive geologic record ranging from thousands to millions of years, this record is subject to interpretation and includes many uncertainties. In addition, there are uncertainties in the isolation capability and performance of engineered barriers. Although the composition and configuration of engineered structures (barriers) can be defined with a degree of precision not possible for natural barriers, it is recognized that except for a few archaeologic and natural analogs, there is a limited experience base for the performance of complex, engineered structures over periods longer than a few hundred years, considering the uncertainty in characterizing and modeling individual barriers. These uncertainties are addressed by requiring the use of a multiple barrier approach;

specifically, an engineered barrier system is required in addition to the natural barriers provided by the geologic setting. The performance assessment provides an evaluation of the repository performance based on credible models and parameters including the consideration of uncertainty in the behavior of the repository system. Thus the performance assessment results reflect the capability of each of the barriers to cope with a variety of challenges (e.g., combinations of parameters leading to less favorable performance for individual barriers and combinations of barriers). A description of each barrier's capability (e.g., retardation of radionuclides in the saturated zone, waste package lifetime, matrix diffusion in the unsaturated zone), as reflected in the performance assessment, provides an understanding of how the natural barriers and the engineered barrier system work in combination to enhance the resiliency of the geologic repository. The Commission believes that this understanding can increase confidence that the postclosure performance objectives specified at § 63.113(b) and (c) will be achieved and that DOE's design includes a system of multiple barriers.

(i) *Reference biosphere and reasonably maximally exposed individual.* The performance assessment will estimate the amount of radioactive material released to water or air at various locations and times in the future. To estimate the potential for future human exposures resulting from release of radioactive material from a geologic repository at Yucca Mountain, it is necessary to make certain assumptions about the location and characteristics of the reasonably maximally exposed individual. The environment inhabited by the reasonably maximally exposed individual, along with associated human exposure pathways and parameters, make up the reference biosphere, as described in § 63.305. The reasonably maximally exposed individual, as a hypothetical person living in a community with characteristics of the Town of Amargosa Valley, is a representative person using water with average concentrations of radionuclides as described at § 63.312. The reasonably maximally exposed individual is selected to represent those persons in the vicinity of Yucca Mountain who are reasonably expected to receive the greatest exposure to radioactive material released from a geologic repository at Yucca Mountain. Characteristics of the reference biosphere and the reasonably maximally exposed individual are to be based on current human behavior and biospheric conditions in the region, as described in § 63.305 and § 63.312.

(j) *Performance assessment.* Demonstrating compliance with the postclosure performance objective specified at § 63.113(b) requires a performance assessment to quantitatively estimate radiological exposures to the reasonably maximally exposed individual at any time during the compliance period. The performance assessment is a systematic analysis that identifies the features, events, and processes (*i.e.*, specific conditions or attributes of the geologic setting, degradation, deterioration, or alteration processes of engineered barriers, and interactions between the natural and engineered barriers) that might affect performance of the geologic repository; examines their effects on performance; and estimates the radiological exposures to the reasonably maximally exposed individual. The features, events, and processes considered in the performance assessment should represent a wide range of both beneficial and potentially adverse effects on performance (e.g., beneficial effects of radionuclide sorption; potentially adverse effects of fracture flow or a criticality event). Those features, events, and processes expected to materially affect compliance with § 63.113(b) or be potentially adverse to performance are included, while events (event classes or scenario classes) that are very unlikely (less than one chance in 10,000 over 10,000 years) can be excluded from the analysis. An event class consists of all possible specific initiating events that are caused by a common natural process (e.g., the event class for seismicity includes the range of credible earthquakes for the Yucca Mountain site). Radiological exposures to the reasonably maximally exposed individual are estimated using the selected features,

events, and processes, and incorporating the probability that the estimated exposures will occur. Additionally, performance assessment methods are appropriate for use in demonstrating compliance with the postclosure performance objectives for groundwater protection and human intrusion, and are subject to the requirements for performance assessments specified at § 63.114 and applicable criteria in Subpart L (e.g., criteria for evaluating compliance with groundwater protection and individual protection standards).

(k) *Institutional controls.* Active and passive institutional controls will be maintained over the Yucca Mountain site, and are expected to reduce significantly, but not eliminate, the potential for human activity that could inadvertently cause or accelerate the release of radioactive material. However, because it is not possible to make scientifically sound forecasts of the long-term reliability of institutional controls, it is not appropriate to include consideration of human intrusion into a fully risk-based performance assessment for purposes of evaluating the ability of the geologic repository to achieve the performance objective at § 63.113(b). Hence, human intrusion is addressed in a stylized manner as described in paragraph (l) of this section.

(l) *Human intrusion.* In contrast to events unrelated to human activity, the probability and characteristics of human intrusion occurring many hundreds or thousands of years into the future cannot be estimated by examining either the historic or geologic record. Rather than speculating on the nature and probability of future intrusion, it is more useful to assess how resilient the geologic repository would be against a human intrusion event. Although the consequences of an assumed intrusion event would be a separate analysis, the analysis is similar to the performance assessment required by § 63.113(b) but subject to specific requirements for evaluation of human intrusion specified at §§ 63.321, 63.322 and 63.342 of subpart L of this part.

(m) *Performance confirmation.* A performance confirmation program will be conducted to evaluate the adequacy of assumptions, data, and analyses that led to the findings that permitted construction of the repository and subsequent emplacement of the wastes. Key geotechnical and design parameters, including any interactions between natural and engineered systems and components, will be monitored throughout site characterization, construction, emplacement, and operation to identify any significant changes in the conditions assumed in the license application that may affect compliance with the performance objectives specified at § 63.113(b) and (c).

(n) *Groundwater protection.* Separate groundwater protection standards are designed to protect the groundwater resources in the vicinity of Yucca Mountain. These standards, specified at § 63.331, require the estimation of groundwater concentrations in the representative volume of water. Depending on the radionuclide, the estimated concentrations must either be below a specified concentration or result in an annual, drinking water dose to the whole body or any organ of no greater than 0.04 mSv (4 mrem). Although the estimation of radionuclide concentrations in the representative volume would be a separate analysis, the analysis is similar to the performance assessment required by § 63.113(b) but subject to specific requirements for evaluation of groundwater protection specified at §§ 63.331, 63.332 and 63.342 of subpart L of this part.

(o) *Implementation of TEDE.* When external exposure is determined by measurement with an external personal monitoring device, the deep-dose equivalent must be used in place of the effective dose equivalent, unless the effective dose equivalent is determined by a dosimetry method approved by the NRC. The assigned deep-dose equivalent must be for the part of the body receiving the highest exposure. The assigned shallow-dose equivalent must be the dose averaged over the contiguous 10 square centimeters of skin receiving the highest exposure. The radiation and organ or tissue weighting factors in Appendix A of 40 CFR part 197 are to be used to calculate TEDE. After the effective date of this regulation, the Commission may allow DOE to use updated factors, which have been issued by consensus scientific organizations

and incorporated by EPA into Federal radiation guidance. Additionally, as scientific models and methodologies for estimating doses are updated, DOE may use the most current and appropriate (e.g., those accepted by the International Commission on Radiological Protection) scientific models and methodologies to calculate the TEDE. The weighting factors used in the calculation of TEDE must be consistent with the methodology used to perform the calculation.

[66 FR 55792, Nov. 2, 2001, as amended at 74 FR 10828, Mar. 13, 2009]

PRECLOSURE PERFORMANCE OBJECTIVES

§ 63.111 Performance objectives for the geologic repository operations area through permanent closure.

(a) *Protection against radiation exposures and releases of radioactive material.* (1) The geologic repository operations area must meet the requirements of part 20 of this chapter.

(2) During normal operations, and for Category 1 event sequences, the annual TEDE (hereafter referred to as ''dose'') to any real member of the public located beyond the boundary of the site may not exceed the preclosure standard specified at § 63.204.

(b) *Numerical guides for design objectives.* (1) The geologic repository operations area must be designed so that, taking into consideration Category 1 event sequences and until permanent closure has been completed, the aggregate radiation exposures and the aggregate radiation levels in both restricted and unrestricted areas, and the aggregate releases of radioactive materials to unrestricted areas, will be maintained within the limits specified in paragraph (a) of this section.

(2) The geologic repository operations area must be designed so that, taking into consideration any single Category 2 event sequence and until permanent closure has been completed, no individual located on, or beyond, any point on the boundary of the site will receive, as a result of the single Category 2 event sequence, the more limiting of a TEDE of 0.05 Sv (5 rem), or the sum of the deep dose equivalent and the committed dose equivalent to any individual organ or tissue (other than the lens of the eye) of 0.5 Sv (50 rem). The lens dose equivalent may not exceed 0.15 Sv (15 rem), and the shallow dose equivalent to skin may not exceed 0.5 Sv (50 rem).

(c) *Preclosure safety analysis.* A preclosure safety analysis of the geologic repository operations area that meets the requirements specified at § 63.112 must be performed. This analysis must demonstrate that:

(1) The requirements of § 63.111(a) will be met; and

(2) The design meets the requirements of § 63.111(b).

(d) *Performance confirmation.* The geologic repository operations area must be designed so as to permit implementation of a performance confirmation program that meets the requirements of subpart F of this part.

(e) *Retrievability of waste.* (1) The geologic repository operations area must be designed to preserve the option of waste retrieval throughout the period during which wastes are being emplaced and thereafter, until the completion of a performance confirmation program and Commission review of the information obtained from such a program. To satisfy this objective, the geologic repository operations area must be designed so that any or all of the emplaced waste could be retrieved on a reasonable schedule starting at any time up to 50 years after waste emplacement operations are initiated, unless a different time period is approved or specified by the Commission. This different time period may be established on a case-by-case basis consistent with the emplacement schedule and the planned performance confirmation program.

(2) This requirement may not preclude decisions by the Commission to allow backfilling part, or all of, or permanent closure of the geologic repository operations area, before the end of the period of design for retrievability.

(3) For purposes of paragraph (e) of this section, a reasonable schedule for retrieval is one that would permit retrieval in about the same time as that required to construct the geologic repository operations area and emplace waste.

PRECLOSURE SAFETY ANALYSIS

§ 63.112 Requirements for preclosure safety analysis of the geologic repository operations area.

The preclosure safety analysis of the geologic repository operations area must include:

(a) A general description of the structures, systems, components, equipment, and process activities at the geologic repository operations area;

(b) An identification and systematic analysis of naturally occurring and human-induced hazards at the geologic repository operations area, including a comprehensive identification of potential event sequences;

(c) Data pertaining to the Yucca Mountain site, and the surrounding region to the extent necessary, used to identify naturally occurring and human-induced hazards at the geologic repository operations area;

(d) The technical basis for either inclusion or exclusion of specific, naturally occurring and human-induced hazards in the safety analysis;

(e) An analysis of the performance of the structures, systems, and components to identify those that are important to safety. This analysis identifies and describes the controls that are relied on to limit or prevent potential event sequences or mitigate their consequences. This analysis also identifies measures taken to ensure the availability of safety systems. The analysis required in this paragraph must include, but not necessarily be limited to, consideration of—

(1) Means to limit concentration of radioactive material in air;

(2) Means to limit the time required to perform work in the vicinity of radioactive materials;

(3) Suitable shielding;

(4) Means to monitor and control the dispersal of radioactive contamination;

(5) Means to control access to high radiation areas or airborne radioactivity areas;

(6) Means to prevent and control criticality;

(7) Radiation alarm system to warn of significant increases of radiation levels, concentrations of radioactive material in air, and increased radioactivity in effluents;

(8) Ability of structures, systems, and components to perform their intended safety functions, assuming the occurrence of event sequences;

(9) Explosion and fire detection systems and appropriate suppression systems;

(10) Means to control radioactive waste and radioactive effluents, and permit prompt termination of operations and evacuation of personnel during an emergency;

(11) Means to provide reliable and timely emergency power to instruments, utility service systems, and operating systems important to safety if there is a loss of primary electric power;

(12) Means to provide redundant systems necessary to maintain, with adequate capacity, the ability of utility services important to safety; and

(13) Means to inspect, test, and maintain structures, systems, and components important to safety, as necessary, to ensure their continued functioning and readiness.

(f) A description and discussion of the design, both surface and subsurface, of the geologic repository operations area, including—

(1) The relationship between design criteria and the requirements specified at § 63.111(a) and (b); and

(2) The design bases and their relation to the design criteria.

POSTCLOSURE PERFORMANCE OBJECTIVES

§ 63.113 Performance objectives for the geologic repository after permanent closure.

(a) The geologic repository must include multiple barriers, consisting of both natural barriers and an engineered barrier system.

(b) The engineered barrier system must be designed so that, working in combination with natural barriers, radiological exposures to the reasonably maximally exposed individual are within the limits specified at § 63.311 of subpart L of this part. Compliance with this paragraph must be demonstrated through a performance assessment that meets the requirements specified at § 63.114 of this subpart, and §§ 63.303, 63.305, 63.312 and 63.342 of Subpart L of this part.

(c) The engineered barrier system must be designed so that, working in combination with natural barriers, releases of radionuclides into the accessible environment are within the limits specified at § 63.331 of subpart L of this part. Compliance with this paragraph must be demonstrated through a performance assessment that meets the requirements specified at § 63.114 of this subpart and §§ 63.303, 63.332 and 63.342 of subpart L of this part.

(d) The ability of the geologic repository to limit radiological exposures to the reasonably maximally exposed individual, in the event of human intrusion into the engineered barrier system, must be demonstrated through an analysis that meets the requirements at §§ 63.321 and 63.322 of subpart L of this part. Estimating radiological exposures to the reasonably maximally exposed individual requires a performance assessment that meets the requirements specified at § 63.114 of this subpart, and §§ 63.303, 63.305, 63.312 and 63.342 of subpart L of this part.

POSTCLOSURE PERFORMANCE ASSESSMENT

§ 63.114 Requirements for performance assessment.

(a) Any performance assessment used to demonstrate compliance with § 63.113 for 10,000 years after disposal must:

(1) Include data related to the geology, hydrology, and geochemistry (including disruptive processes and events) of the Yucca Mountain site, and the surrounding region to the extent necessary, and information on the design of the engineered barrier system used to define, for 10,000 years after disposal, parameters and conceptual models used in the assessment.

(2) Account for uncertainties and variabilities in parameter values, for 10,000 years after disposal, and provide for the technical basis for parameter ranges, probability distributions, or bounding values used in the performance assessment.

(3) Consider alternative conceptual models of features and processes, for 10,000 years after disposal, that are consistent with available data and current scientific understanding and evaluate the effects that alternative conceptual models have on the performance of the geologic repository.

(4) Consider only features, events, and processes consistent with the limits on performance assessment specified at § 63.342.

(5) Provide the technical basis for either inclusion or exclusion of specific features, events, and processes in the performance assessment. Specific features, events, and processes must be evaluated in detail if the magnitude and time of the resulting radiological exposures to the reasonably maximally exposed individual, or radionuclide releases to the accessible environment, for 10,000 years after disposal, would be significantly changed by their omission.

(6) Provide the technical basis for either inclusion or exclusion of degradation, deterioration, or alteration processes of engineered barriers in the performance assessment, including those processes that would adversely affect the performance of natural barriers. Degradation, deterioration, or alteration processes of engineered barriers must be evaluated in detail if the magnitude and time of the resulting radiological exposures to the reasonably maximally exposed individual, or radionuclide releases to the accessible environment, for 10,000 years after disposal, would be significantly changed by their omission.

(7) Provide the technical basis for models used to represent the 10,000 years after disposal in the performance assessment, such as comparisons made with outputs of detailed process-level models and/or empirical observations (e.g., laboratory testing, field investigations, and natural analogs).

(b) The performance assessment methods used to satisfy the requirements of paragraph (a) of this section are considered sufficient for the performance assessment for the period of time after 10,000 years and through the period of geologic stability.

[74 FR 10828, Mar. 13, 2009]

§ 63.115 Requirements for multiple barriers.

Demonstration of compliance with § 63.113(a) must:

(a) Identify those design features of the engineered barrier system, and natural features of the geologic setting, that are considered barriers important to waste isolation.

(b) Describe the capability of barriers, identified as important to waste isolation, to isolate waste, taking into account uncertainties in characterizing and modeling the behavior of the barriers.

(c) Provide the technical basis for the description of the capability of barriers, identified as important to waste isolation, to isolate waste. The technical basis for each barrier's capability shall be based on and consistent with the technical basis for the performance assessments used to demonstrate compliance with § 63.113(b) and (c).

LAND OWNERSHIP AND CONTROL

§ 63.121 Requirements for ownership and control of interests in land.

(a) *Ownership of land.* (1) The geologic repository operations area must be located in and on lands that are either acquired lands under the jurisdiction and control of DOE, or lands permanently withdrawn and reserved for its use.

(2) These lands must be held free and clear of all encumbrances, if significant, such as:

(i) Rights arising under the general mining laws;

(ii) Easements for right-of-way; and

(iii) All other rights arising under lease, rights of entry, deed, patent, mortgage, appropriation, prescription, or otherwise.

(b) *Additional controls for permanent closure.* Appropriate controls must be established outside of the geologic repository operations area. DOE shall exercise any jurisdiction and control over surface and subsurface estates necessary to prevent adverse human actions that could significantly reduce the geologic repository's ability to achieve isolation. The rights of DOE may take the form of appropriate possessory interests, servitudes, or withdrawals from location or patent under the general mining laws.

(c) *Additional controls through permanent closure.* Appropriate controls must be established outside the geologic repository operations area. DOE shall exercise any jurisdiction or control of activities necessary to ensure the requirements at § 63.111(a) and (b) are met. Control includes the authority to exclude members of the public, if necessary.

(d) *Water rights.* (1) DOE shall also have obtained such water rights as may be needed to accomplish the purpose of the geologic repository operations area.

(2) Water rights are included in the additional controls to be established under paragraph (b) of this section.

Subpart F—Performance Confirmation Program

§ 63.131 General requirements.

(a) The performance confirmation program must provide data that indicate, where practicable, whether:

(1) Actual subsurface conditions encountered and changes in those conditions during construction and waste emplacement operations are within the limits assumed in the licensing review; and

(2) Natural and engineered systems and components required for repository operation, and that are designed or assumed to operate as barriers after permanent closure, are functioning as intended and anticipated.

(b) The program must have been started during site characterization, and it will continue until permanent closure.

(c) The program must include in situ monitoring, laboratory and field testing, and in situ experiments, as may be appropriate to provide the data required by paragraph (a) of this section.

(d) The program must be implemented so that:

(1) It does not adversely affect the ability of the geologic and engineered elements of the geologic repository to meet the performance objectives.

(2) It provides baseline information and analysis of that information on those parameters and natural processes pertaining to the geologic setting that may be changed by site characterization, construction, and operational activities.

(3) It monitors and analyzes changes from the baseline condition of parameters that could affect the performance of a geologic repository.

§ 63.132 Confirmation of geotechnical and design parameters.

(a) During repository construction and operation, a continuing program of surveillance, measurement, testing, and geologic mapping must be conducted to ensure that geotechnical and design parameters are confirmed and to ensure that appropriate action is taken to inform the Commission of design changes needed to accommodate actual field conditions encountered.

(b) Subsurface conditions must be monitored and evaluated against design assumptions.

(c) Specific geotechnical and design parameters to be measured or observed, including any interactions between natural and engineered systems and components, must be identified in the performance confirmation plan.

(d) These measurements and observations must be compared with the original design bases and assumptions. If significant differences exist between the measurements and observations and the original design bases and assumptions, the need for modifications to the design or in construction methods must be determined and these differences, their significance to repository performance, and the recommended changes reported to the Commission.

(e) In situ monitoring of the thermomechanical response of the underground facility must be conducted until permanent closure, to ensure that the performance of the geologic and engineering features is within design limits.

§ 63.133 Design testing.

(a) During the early or developmental stages of construction, a program for testing of engineered systems and components used in the design, such as, for example, borehole and shaft seals, backfill, and drip shields, as well as the thermal interaction effects of the waste packages, backfill, drip shields, rock, and unsaturated zone and saturated zone water, must be conducted.

(b) The testing must be initiated as early as practicable.

(c) If backfill is included in the repository design, a test must be conducted to evaluate the effectiveness of backfill placement and compaction procedures against design requirements before permanent backfill placement is begun.

(d) Tests must be conducted to evaluate the effectiveness of borehole, shaft, and ramp seals before full-scale operation proceeds to seal boreholes, shafts, and ramps.

§ 63.134 Monitoring and testing waste packages.

(a) A program must be established at the geologic repository operations area for monitoring the condition of the waste packages. Waste packages chosen for the program must be representative of those to be emplaced in the underground facility.

(b) Consistent with safe operation at the geologic repository operations area, the environment of the waste packages selected for the waste package monitoring program must be representative of the environment in which the wastes are to be emplaced.

(c) The waste package monitoring program must include laboratory experiments that focus on the internal condition of the waste packages. To the extent practical, the environment experienced by the emplaced waste packages within the underground facility during the waste package monitoring program must be duplicated in the laboratory experiments.

(d) The waste package monitoring program must continue as long as practical up to the time of permanent closure.

Subpart G—Quality Assurance

§ 63.141 Scope.

As used in this part, *quality assurance* comprises all those planned and systematic actions necessary to provide adequate confidence that the geologic repository and its structures, systems, or components will perform satisfactorily in service. Quality assurance includes quality control, which comprises those quality assurance actions related to the physical characteristics of a material, structure, component, or

system that provide a means to control the quality of the material, structure, component, or system to predetermined requirements.

§ 63.142 Quality assurance criteria.

(a) *Introduction and Applicability*. DOE is required by § 63.21(c)(20) to include in its safety analysis report a description of the quality assurance program to be applied to all structures, systems, and components important to safety, to design and characterization of barriers important to waste isolation, and to related activities. These activities include: site characterization; acquisition, control, and analyses of samples and data; tests and experiments; scientific studies; facility and equipment design and construction; facility operation; performance confirmation; permanent closure; and decontamination and dismantling of surface facilities. The description must indicate how the applicable quality assurance requirements will be satisfied. DOE shall include information pertaining to the managerial and administrative controls to be used to ensure safe operation in its safety analysis report. High-level waste repositories include structures, systems, and components that prevent or mitigate the consequences of postulated event sequences or that are important to waste isolation capabilities that could cause undue risk to the health and safety of the public. The pertinent requirements of this subpart apply to all activities that are important to waste isolation and important to safety functions of those structures, systems, and components. These activities include designing, purchasing, fabricating, handling, shipping, storing, cleaning, erecting, installing, inspecting, testing, operating, maintaining, repairing, modifying, site characterization, performance confirmation, permanent closure, decontamination, and dismantling of surface facilities.

(b) *Organization*. DOE shall establish and execute a quality assurance program. DOE may delegate to others, such as contractors, agents, or consultants, the work of establishing and executing the quality assurance program, or any part of it, but DOE retains responsibility for it.

(1) The authority and duties of persons and organizations performing activities affecting the functions of structures, systems, and components that are important to waste isolation and important to safety must be clearly established and delineated in writing. These activities include both the performing functions of attaining quality objectives and the quality assurance functions. The quality assurance functions are those of:

(i) Assuring that an appropriate quality assurance program is established and effectively executed; and

(ii) Verifying that activities important to waste isolation and important to safety functions have been correctly performed by checking, auditing, and inspection of structures, systems, and components.

(2) The persons and organizations performing quality assurance functions shall have sufficient authority and organizational freedom to identify quality problems; to initiate, recommend, or provide solutions; and to verify implementation of solutions. The persons and organizations performing quality assurance functions shall report to a management level so that the required authority and organizational freedom, including sufficient independence from cost and schedule when opposed to safety considerations, are provided.

(3) Because of the many variables involved, such as the number of personnel, the type of activity being performed, and the location or locations where activities are performed, the organizational structure for executing the quality assurance program may take various forms provided that the persons and organizations assigned the quality assurance functions have this required authority and organizational freedom. Irrespective of the organizational structure, the individual(s) assigned the responsibility for assuring effective execution of any portion of the quality assurance program at any location where activities subject to 10 CFR part 63 are being performed must have direct access to the levels of management as may be necessary to perform this function.

(c) *Quality assurance program.* DOE shall establish a quality assurance program that complies with the requirements of this subpart at the earliest practicable time, consistent with the schedule for accomplishing the activities. This program must be documented by written policies, procedures, or instructions and must be carried out throughout facility life in accordance with those policies, procedures, or instructions.

(1) DOE shall identify the structures, systems, and components to be covered by the quality assurance program and the major organizations participating in the program, together with the designated functions of these organizations. The quality assurance program must control activities affecting the quality of the identified structures, systems, and components, to an extent consistent with their importance to safety.

(2) Activities affecting quality must be accomplished under suitably controlled conditions. Controlled conditions include the use of appropriate equipment; suitable environmental conditions for accomplishing the activity, such as adequate cleanness; and assurance that all prerequisites for the given activity have been satisfied.

(3) The program must take into account the need for special controls, processes, test equipment, tools, and skills to attain the required quality, and the need for verification of quality by inspection and test. The program must provide for indoctrination and training of personnel performing activities affecting quality as necessary to assure that suitable proficiency is achieved and maintained.

(4) DOE shall regularly review the status and adequacy of the quality assurance program. Management of other organizations participating in the quality assurance program shall regularly review the status and adequacy of that part of the quality assurance program which they are executing.

(d) *Design control.* (1) DOE shall establish measures to assure that applicable regulatory requirements and the design basis, as defined in § 63.2 and as specified in the license application, for those structures, systems, and components to which this subpart applies, are correctly translated into specifications, drawings, procedures, and instructions. These measures must assure that appropriate quality standards are specified and included in design documents and that deviations from such standards are controlled. Measures must also be established for the selection and review for suitability of application of materials, parts, equipment, and processes that are important to waste isolation and important to safety functions of the structures, systems and components.

(2) DOE shall establish measures to identify and control design interfaces and for coordination among participating design organizations. These measures must include the establishment of procedures among participating design organizations for the review, approval, release, distribution, and revision of documents involving design interfaces.

(i) The design control measures must provide for verifying or checking the adequacy of design, such as by the performance of design reviews, by the use of alternate or simplified calculational methods, or by the performance of a suitable testing program. The verifying or checking process must be performed by individuals or groups other than those who performed the original design. These individuals may be from the same organization. If a test program is used to verify the adequacy of a specific design feature in lieu of other verifying or checking processes, it must include suitable qualifications testing of a prototype unit under the most adverse design conditions. Design control measures must be applied to items such as: criticality physics, stress, thermal, hydraulic, and preclosure and postclosure analyses; compatibility of materials; accessibility for inservice inspection, maintenance and repair; and delineation of acceptance criteria for inspections and tests.

(ii) Design changes, including field changes, must be subject to design control measures commensurate with those applied to the original design and be approved by the organization that performed the original design unless the applicant designates another responsible organization.

(e) *Procurement document control.* DOE shall establish measures to assure that applicable regulatory requirements, design bases, and other requirements necessary to assure adequate quality are suitably included or referenced in the documents for procurement of material, equipment, and services, whether purchased by the licensee or applicant or by its contractors or subcontractors. To the extent necessary, procurement documents must require contractors or subcontractors to provide a quality assurance program consistent with the pertinent provisions of this section.

(f) *Instructions, procedures, and drawings.* Activities affecting quality must be prescribed by documented instructions, procedures, or drawings of a type appropriate to the circumstances and must be accomplished in accordance with these instructions, procedures, or drawings. Instructions, procedures, or drawings must include appropriate quantitative or qualitative acceptance criteria for determining that important activities have been satisfactorily accomplished.

(g) *Document control.* DOE shall establish measures to control the issuance of documents, such as instructions, procedures, and drawings, including changes to them that prescribe all activities affecting quality. These measures must assure that documents, including changes, are reviewed for adequacy and approved for release by authorized personnel and are distributed to and used at the location where the prescribed activity is performed. Changes to documents must be reviewed and approved by the same organizations that performed the original review and approval unless the applicant designates another responsible organization.

(h) *Control of purchased material, equipment, and services.* DOE shall establish measures to assure that purchased material, equipment, and services, whether purchased directly or through contractors and subcontractors, conform to the procurement documents.

(1) These measures must include appropriate provisions for source evaluation and selection, objective evidence of quality furnished by the contractor or subcontractor, inspection at the contractor or subcontractor source, and examination of products upon delivery.

(2) Documentary evidence that material and equipment conform to the procurement requirements must be available at the high-level waste repository site before the material and equipment are installed or used. This documentary evidence must be retained at the high-level waste repository site and be sufficient to identify the specific requirements, such as codes, standards, or specifications, met by the purchased material and equipment.

(3) The effectiveness of the control of quality by contractors and subcontractors must be assessed by the licensee or applicant or designee at intervals consistent with the importance, complexity, and quantity of the product or services.

(i) *Identification and control of materials, parts, and components.* Measures must be established for the identification and control of materials, parts, and components, including partially fabricated assemblies. These measures must assure that identification of the item is maintained by heat number, part number, serial number, or other appropriate means, either on the item or on records traceable to the item, as required throughout fabrication, erection, installation, and use of the item. These identification and control measures must be designed to prevent the use of incorrect or defective material, parts, and components.

(j) *Control of special processes.* DOE shall establish measures to assure that special processes, including welding, heat treating, and nondestructive testing, are controlled and accomplished by qualified personnel using qualified procedures in accordance with applicable codes, standards, specifications, criteria, and other special requirements.

(k) *Inspection.* DOE shall establish and execute a program for inspection of activities affecting quality to verify conformance with the documented instructions, procedures, and drawings for accomplishing the activity. The inspection must be performed by individuals other than those who performed the activity being inspected.

(1) Examinations, measurements, or tests of material or products processed must be performed for each work operation where necessary to assure quality. If inspection of processed material or products is impossible or disadvantageous, indirect control by monitoring processing methods, equipment, and personnel must be provided. Both inspection and process monitoring must be provided when control is inadequate without both.

(2) If mandatory inspection hold points that require witnessing or inspecting by the applicant's designated representative and beyond which work may not proceed without the consent of its designated representative are required, the specific hold points must be indicated in appropriate documents.

(l) *Test control.* DOE shall establish a test program to assure that all testing required to demonstrate that structures, systems, and components important to safety will perform satisfactorily in service is identified and performed in accordance with written test procedures which incorporate the requirements and acceptance limits contained in applicable design documents.

(1) The test program must include, as appropriate, proof tests prior to installation, preoperational tests, and operational tests during repository operation, of structures, systems, and components.

(2) Test procedures must include provisions for assuring that all prerequisites for the given test have been met, that adequate test instrumentation is available and used, and that the test is performed under suitable environmental conditions.

(3) Test results must be documented and evaluated to assure that test requirements have been satisfied.

(m) *Control of measuring and test equipment.* DOE shall establish measures to assure that tools, gages, instruments, and other measuring and testing devices used in activities affecting quality are properly controlled, calibrated, and adjusted at specified periods to maintain accuracy within necessary limits.

(n) *Handling, storage, and shipping.* DOE shall establish measures to control the handling, storage, shipping, cleaning and preservation of material and equipment in accordance with work and inspection instructions to prevent damage or deterioration. When necessary for particular products, special protective environments, such as inert gas atmosphere, specific moisture content levels, and temperature levels, must be specified and provided.

(o) *Inspection, test, and operating status.* DOE shall establish measures to indicate the status of inspections and tests performed on individual items of the high-level waste repository by markings such as stamps, tags, labels, routing cards, or other suitable means. These measures must provide for the identification of items that have satisfactorily passed required inspections and tests, where necessary to preclude inadvertent bypassing of such inspections and tests. Measures must also be established for indicating the operating status of structures, systems, and components of the high-level waste repository, such as by tagging valves and switches, to prevent inadvertent operation.

(p) *Nonconforming materials, parts, or components.* DOE shall establish measures to control materials, parts, or components which do not conform to requirements in order to prevent their inadvertent use or installation. These measures must include, as appropriate, procedures for identification, documentation, segregation, disposition, and notification to affected organizations. Nonconforming items must be reviewed and accepted, rejected, repaired or reworked in accordance with documented procedures.

(q) *Corrective action.* DOE shall establish measures to assure that conditions adverse to quality, such as failures, malfunctions, deficiencies, deviations, defective material and equipment, and nonconformances are promptly identified and corrected. If significant conditions are adverse to quality, the measures must assure that the cause of the condition is determined and corrective action taken to preclude repetition. The identification of the significant condition adverse to quality, the cause of the condition, and the corrective action taken must be documented and reported to appropriate levels of management.

(r) *Quality assurance records.* DOE shall maintain sufficient records to furnish evidence of activities affecting quality.

(1) The records must include at least the following: Operating logs and the results of reviews, inspections, tests, audits, monitoring of work performance, and materials analyses.

(2) The records must also include closely-related data such as qualifications of personnel, procedures, and equipment.

(3) Inspection and test records must, at a minimum, identify the inspector or data recorder, the type of observation, the results, the acceptability, and the action taken in connection with any deficiencies noted.

(4) Records must be identifiable and retrievable. Consistent with applicable regulatory requirements, the applicant shall establish requirements concerning record retention, such as duration, location, and assigned responsibility.

(s) *Audits.* DOE shall carry out a comprehensive system of planned and periodic audits to verify compliance with all aspects of the quality assurance program and to determine the effectiveness of the program. The audits must be performed in accordance with the written procedures or check lists by appropriately trained personnel not having direct responsibilities in the areas being audited. Audit results must be documented and reviewed by management having responsibility in the area audited. Followup action, including reaudit of deficient areas, must be taken where indicated.

§ 63.143 Implementation.

DOE shall implement a quality assurance program based on the criteria required by § 63.142.

§ 63.144 Quality assurance program change.

Changes to DOE's NRC-approved Safety Analysis Report quality assurance program description are processed as follows:

(a) DOE may change a previously accepted quality assurance program description included or referenced in the Safety Analysis Report without prior NRC approval, if the change does not reduce the commitments in the program description previously accepted by the NRC. Changes to the quality assurance program description that do not reduce the commitments must be submitted every 24 months, in accordance with paragraph (b)(1) of this section. In addition to quality assurance program changes involving administrative improvements and clarifications, spelling corrections, punctuation, or editorial items, the following changes are not considered reductions in commitment:

(1) The use of a quality assurance standard approved by the NRC which is more recent than the quality assurance standard in DOE's current quality assurance program at the time of the change;

(2) The use of generic organizational position titles that clearly denote the position function, supplemented as necessary by descriptive text, rather than specific titles;

(3) The use of generic organizational charts to indicate functional relationships, authorities, and responsibilities, or alternatively, the use of descriptive text;

(4) The elimination of quality assurance program information that duplicates language in quality assurance regulatory guides and quality assurance standards to which the licensee is committed; and

(5) Organizational revisions that ensure that persons and organizations performing quality assurance functions continue to have the requisite authority and organizational freedom, including sufficient independence from cost and schedule when opposed to safety considerations.

(b) DOE shall submit changes made to the NRC-accepted Safety Analysis Report quality assurance program description that do reduce the commitments to the NRC and receive NRC approval prior to implementation, as follows:

(1) By an appropriate method listed in § 63.4 of this chapter, the signed document must be submitted to the Nuclear Regulatory Commission, addressed: ATTN: Document Control Desk; Director, Office of Nuclear Material and Safeguards; U.S. Nuclear Regulatory Commission, Washington, DC

20555–0001, and one copy to the appropriate NRC Resident Inspector, if one has been assigned to the site or facility.

(2) The submittal of a change to the Safety Analysis Report quality assurance program description must include all pages affected by that change and must be accompanied by a forwarding letter identifying the change, the reason for the change, and the basis for concluding that the revised program incorporating the change continues to describe how the requirements of § 63.142 will be satisfied and continues to satisfy the criteria of § 63.142 and the Safety Analysis Report quality assurance program description previously accepted by the NRC (the letter need not provide the basis for changes that correct spelling, punctuation, or editorial items).

(3) DOE shall maintain records of quality assurance program changes that do reduce commitments.

[66 FR 55792, Nov. 2, 2001, as amended at 68 FR 58816, Oct. 10, 2003]

Subpart H—Training and Certification of Personnel

§ 63.151 General requirements.

Operations of systems and components that have been identified as important to safety in the Safety Analysis Report and in the license must be performed only by trained and certified personnel or by personnel under the direct visual supervision of an individual with training and certification in such operation. Supervisory personnel who direct operations that are important to safety must also be certified in such operations.

§ 63.152 Training and certification program.

DOE shall establish a program for training, proficiency testing, certification, and requalification of operating and supervisory personnel.

§ 63.153 Physical requirements.

The physical condition and the general health of personnel certified for operations that are important to safety may not be such as might cause operational errors that could endanger the public health and safety. Any condition that might cause impaired judgment or motor coordination must be considered in the selection of personnel for activities that are important to safety. These conditions need not categorically disqualify a person, so long as appropriate provisions are made to accommodate the conditions.

Subpart I—Emergency Planning Criteria

§ 63.161 Emergency plan for the geologic repository operations area through permanent closure.

DOE shall develop and be prepared to implement a plan to cope with radiological accidents that may occur at the geologic repository operations area, at any time before permanent closure and decontamination or decontamination and dismantlement of surface facilities. The emergency plan must be based on the criteria of § 72.32(b) of this chapter.

Subpart J—Violations

§ 63.171 Violations.

(a) The Commission may obtain an injunction or other court order to prevent a violation of the provisions of—

(1) The Atomic Energy Act of 1954, as amended;

(2) Title II of the Energy Reorganization Act of 1974, as amended; or

(3) A regulation or order issued under those Acts.

(b) The Commission may obtain a court order for the payment of a civil penalty imposed under section 234 of the Atomic Energy Act:

(1) For violations of—

(i) Sections 53, 57, 62, 63, 81, 82, 101, 103, 104, 107, or 109 of the Atomic Energy Act of 1954, as amended;

(ii) Section 206 of the Energy Reorganization Act;

(iii) Any rule, regulation, or order issued under the sections specified in paragraph (b)(1)(i) of this section;

(iv) Any term, condition, or limitation of any license issued under the sections specified in paragraph (b)(1)(i) of this section.

(2) For any violation for which a license may be revoked under section 186

of the Atomic Energy Act of 1954, as amended.

§ 63.172 Criminal penalties.

(a) Section 223 of the Atomic Energy Act of 1954, as amended, provides for criminal sanctions for willful violation of, attempted violation of, or conspiracy to violate, any regulation issued under sections 161b, 161i, or 161o of the Act. For purposes of section 223, all the regulations in this part 63 are issued under one or more of sections 161b, 161i, or 161o, except for the sections listed in paragraph (b) of this section.

(b) The regulations in this part 63 that are not issued under sections 161b, 161i, or 161o for the purposes of Section 223 are as follows: §§ 63.1, 63.2, 63.5, 63.6, 63.7, 63.8, 63.15, 63.16, 63.21, 63.22, 63.23, 63.24, 63.31, 63.32, 63.33, 63.41, 63.42, 63.43, 63.45, 63.46, 63.51, 63.52, 63.61, 63.62, 63.63, 63.64, 63.65, 63.101, 63.102, 63.111, 63.112, 63.113, 63.114, 63.115, 63.121, 63.131, 63.132, 63.133, 63.134, 63.141, 63.142, 63.143, 63.153, 63.161, 63.171, 63.172, 63.201, 63.202, 63.203, 63.204, 63.301, 63.302, 63.303, 63.304, 63.305, 63.311, 63.312, 63.321, 63.322, 63.331, 63.332, 63.341, and 63.342.

Subpart K—Preclosure Public Health and Environmental Standards

§ 63.201 Purpose and scope.

This subpart covers the storage of radioactive material by DOE in the Yucca Mountain repository and on the Yucca Mountain site. For the purposes of demonstrating compliance with this subpart, to the extent there may be any conflict with the requirements specified in this subpart and the requirements contained in Subparts A–J of this regulation, including definitions, the requirements in this subpart shall take precedence.

§ 63.202 Definitions for Subpart K.

General environment means everywhere outside the Yucca Mountain site, the Nellis Air Force Range, and the Nevada Test Site.

Member of the public means anyone who is not a radiation worker for purposes of worker protection.

Radioactive material means matter composed of or containing radionuclides subject to the Atomic Energy Act of 1954, as amended (42 U.S.C. sec. 2014 *et seq.*). Radioactive material includes, but is not limited to, high-level radioactive waste and spent nuclear fuel.

Spent nuclear fuel means fuel that has been withdrawn from a nuclear reactor following irradiation, the constituent elements of which have not been separated by reprocessing.

Storage means retention (and any associated activity, operation, or process necessary to carry out successful retention) of radioactive material with the intent or capability to readily access or retrieve such material.

Yucca Mountain repository means the excavated portion of the facility constructed underground within the Yucca Mountain site.

Yucca Mountain site means:

(1) The site recommended by the Secretary of DOE to the President under section 112(b)(1)(B) of the Nuclear Waste Policy Act of 1982 (42 U.S.C. 10132(b)(1)(B)) on May 27, 1986; or

(2) The area under the control of DOE for the use of Yucca Mountain activities at the time of licensing, if the site designated under the Nuclear Waste Policy Act is amended by Congress prior to the time of licensing.

§ 63.203 Implementation of Subpart K.

DOE must demonstrate that normal operations at the Yucca Mountain site will and do occur in compliance with this subpart before the Commission grants or continues a license for DOE to receive and possess radioactive material within the Yucca Mountain site.

§ 63.204 Preclosure standard.

DOE must ensure that no member of the public in the general environment receives more than an annual dose of 0.15 mSv (15 mrem) from the combination of:

(a) Management and storage (as defined in 40 CFR 191.2) of radioactive material that:

(1) Is subject to 40 CFR 191.3(a); and

(2) Occurs outside of the Yucca Mountain repository but within the Yucca Mountain site; and

(b) Storage (as defined in § 63.202) of radioactive material inside the Yucca Mountain repository.

Subpart L—Postclosure Public Health and Environmental Standards

§ 63.301 Purpose and scope.

This subpart covers the disposal of radioactive material in the Yucca Mountain repository by DOE. For the purposes of demonstrating compliance with this subpart, to the extent that there may be any conflict with the requirements specified in this subpart and the requirements contained in Subparts A–J of this part, including definitions, the requirements in this subpart shall take precedence.

§ 63.302 Definitions for Subpart L.

All definitions in subpart K of this part, and the following:

Accessible environment means any point outside of the controlled area, including:

(1) The atmosphere (including the atmosphere above the surface area of the controlled area);

(2) Land surfaces;

(3) Surface waters;

(4) Oceans; and

(5) The lithosphere.

Aquifer means a water-bearing underground geological formation, group of formations, or part of a formation (excluding perched water bodies) that can yield a significant amount of groundwater to a well or spring.

Controlled area means:

(1) The surface area, identified by passive institutional controls, that encompasses no more than 300 square kilometers. It must not extend farther:

(i) South than 36°40′13.6661″ North latitude, in the predominant direction of groundwater flow; and

(ii) Than five kilometers from the repository footprint in any other direction; and

(2) The subsurface underlying the surface area.

Disposal means the emplacement of radioactive material into the Yucca Mountain disposal system with the intent of isolating it for as long as reasonably possible and with no intent of recovery, whether or not the design of the disposal system permits the ready recovery of the material. Disposal of radioactive material in the Yucca Mountain disposal system begins when all of the ramps and other openings into the Yucca Mountain repository are sealed.

Groundwater means water that is below the land surface and in a saturated zone.

Human intrusion means breaching of any portion of the Yucca Mountain disposal system, within the repository footprint, by any human activity.

Passive institutional controls means:

(1) Markers, as permanent as practicable, placed on the Earth's surface;

(2) Public records and archives;

(3) Government ownership and regulations regarding land or resource use; and

(4) Other reasonable methods of preserving knowledge about the location, design, and contents of the Yucca Mountain disposal system.

Peak dose means the highest annual dose projected to be received by the reasonably maximally exposed individual.

Period of geologic stability means the time during which the variability of geologic characteristics and their future behavior in and around the Yucca Mountain site can be bounded, that is, they can be projected within a reasonable range of possibilities. This period is defined to end at 1 million years after disposal.

Plume of contamination means that volume of groundwater in the predominant direction of groundwater flow that contains radioactive contamination from releases from the Yucca Mountain repository. It does not include releases from any other potential sources on or near the Nevada Test Site.

Repository footprint means the outline of the outermost locations of where the waste is emplaced in the Yucca Mountain repository.

Slice of the plume means a cross-section of the plume of contamination with sufficient thickness parallel to the prevalent direction of flow of the plume that it contains the representative volume.

Total dissolved solids means the total dissolved (filterable) solids in water as

determined by use of the method specified in 40 CFR part 136.

Undisturbed performance means that human intrusion or the occurrence of unlikely natural features, events, and processes do not disturb the disposal system.

Undisturbed Yucca Mountain disposal system means that the Yucca Mountain disposal system is not affected by human intrusion.

Waste means any radioactive material emplaced for disposal into the Yucca Mountain repository.

Well-capture zone means the volume from which a well pumping at a defined rate is withdrawing water from an aquifer. The dimensions of the well-capture zone are determined by the pumping rate in combination with aquifer characteristics assumed for calculations, such as hydraulic conductivity, gradient, and the screened interval.

Yucca Mountain disposal system means the combination of underground engineered and natural barriers within the controlled area that prevents or substantially reduces releases from the waste.

[66 FR 55792, Nov. 2, 2001, as amended at 74 FR 10829, Mar. 13, 2009]

§ 63.303 Implementation of Subpart L.

(a) Compliance is based upon the arithmetic mean of the projected doses from DOE's performance assessments for the period within 1 million years after disposal, with:

(1) Sections 63.311(a)(1) and 63.311(a)(2); and

(2) Sections 63.321(b)(1), 63.321(b)(2), and 63.331, if performance assessment is used to demonstrate compliance with either or both of these sections.

(b) [Reserved]

[74 FR 10829, Mar. 13, 2009]

§ 63.304 Reasonable expectation.

Reasonable expectation means that the Commission is satisfied that compliance will be achieved based upon the full record before it. Characteristics of reasonable expectation include that it:

(1) Requires less than absolute proof because absolute proof is impossible to attain for disposal due to the uncertainty of projecting long-term performance;

(2) Accounts for the inherently greater uncertainties in making long-term projections of the performance of the Yucca Mountain disposal system;

(3) Does not exclude important parameters from assessments and analyses simply because they are difficult to precisely quantify to a high degree of confidence; and

(4) Focuses performance assessments and analyses on the full range of defensible and reasonable parameter distributions rather than only upon extreme physical situations and parameter values.

§ 63.305 Required characteristics of the reference biosphere.

(a) Features, events, and processes that describe the reference biosphere must be consistent with present knowledge of the conditions in the region surrounding the Yucca Mountain site.

(b) DOE should not project changes in society, the biosphere (other than climate), human biology, or increases or decreases of human knowledge or technology. In all analyses done to demonstrate compliance with this part, DOE must assume that all of those factors remain constant as they are at the time of submission of the license application.

(c) DOE must vary factors related to the geology, hydrology, and climate based upon cautious, but reasonable assumptions of the changes in these factors that could affect the Yucca Mountain disposal system during the period of geologic stability, consistent with the requirements for performance assessments specified at § 63.342.

(d) Biosphere pathways must be consistent with arid or semi-arid conditions.

[66 FR 55792, Nov. 2, 2001, as amended at 74 FR 10829, Mar. 13, 2009]

POSTCLOSURE INDIVIDUAL PROTECTION STANDARD

§ 63.311 Individual protection standard after permanent closure.

(a) DOE must demonstrate, using performance assessment, that there is a reasonable expectation that the reasonably maximally exposed individual

receives no more than the following annual dose from releases from the undisturbed Yucca Mountain disposal system:

(1) 0.15 mSv (15 mrem) for 10,000 years following disposal; and

(2) 1.0 mSv (100 mrem) after 10,000 years, but within the period of geologic stability.

(b) DOE's performance assessment must include all potential pathways of radionuclide transport and exposure.

[74 FR 10829, Mar. 13, 2009]

§ 63.312 Required characteristics of the reasonably maximally exposed individual.

The reasonably maximally exposed individual is a hypothetical person who meets the following criteria:

(a) Lives in the accessible environment above the highest concentration of radionuclides in the plume of contamination;

(b) Has a diet and living style representative of the people who now reside in the Town of Amargosa Valley, Nevada. DOE must use projections based upon surveys of the people residing in the Town of Amargosa Valley, Nevada, to determine their current diets and living styles and use the mean values of these factors in the assessments conducted for §§ 63.311 and 63.321;

(c) Uses well water with average concentrations of radionuclides based on an annual water demand of 3000 acre-feet;

(d) Drinks 2 liters of water per day from wells drilled into the groundwater at the location specified in paragraph (a) of this section; and

(e) Is an adult with metabolic and physiological considerations consistent with present knowledge of adults.

HUMAN INTRUSION STANDARD

§ 63.321 Individual protection standard for human intrusion.

(a) DOE must determine the earliest time after disposal that the waste package would degrade sufficiently that a human intrusion (see § 63.322) could occur without recognition by the drillers.

(b) DOE must demonstrate that there is a reasonable expectation that the reasonably maximally exposed individual receives, as a result of the human intrusion, no more than the following annual dose:

(1) 0.15 mSv (15 mrem) for 10,000 years following disposal; and

(2) 1.0 mSv (100 mrem) after 10,000 years, but within the period of geologic stability.

(c) DOE's analysis must include all potential environmental pathways of radionuclide transport and exposure, subject to the requirements of § 63.322.

[74 FR 10829, Mar. 13, 2009]

§ 63.322 Human intrusion scenario.

For the purposes of the analysis of human intrusion, DOE must make the following assumptions:

(a) There is a single human intrusion as a result of exploratory drilling for groundwater;

(b) The intruders drill a borehole directly through a degraded waste package into the uppermost aquifer underlying the Yucca Mountain repository;

(c) The drillers use the common techniques and practices that are currently employed in exploratory drilling for groundwater in the region surrounding Yucca Mountain;

(d) Careful sealing of the borehole does not occur, instead natural degradation processes gradually modify the borehole;

(e) No particulate waste material falls into the borehole;

(f) The exposure scenario includes only those radionuclides transported to the saturated zone by water (e.g., water enters the waste package, releases radionuclides, and transports radionuclides by way of the borehole to the saturated zone); and

(g) No releases are included which are caused by unlikely natural processes and events.

GROUNDWATER PROTECTION STANDARDS

§ 63.331 Separate standards for protection of groundwater.

DOE must demonstrate that there is a reasonable expectation that, for 10,000 years of undisturbed performance after disposal, releases of radionuclides

from waste in the Yucca Mountain disposal system into the accessible environment will not cause the level of radioactivity in the representative volume of groundwater to exceed the limits in the following Table 1:

TABLE 1—LIMITS ON RADIONUCLIDES IN THE REPRESENTATIVE VOLUME

Radionuclide or type of radiation emitted	Limit	Is natural background included?
Combined radium-226 and radium-228	5 picocuries per liter	Yes.
Gross alpha activity (including radium-226 but excluding radon and uranium).	15 picocuries per liter	Yes.
Combined beta and photon emitting radionuclides	0.04 mSv (4 mrem) per year to the whole body or any organ, based on drinking 2 liters of water per day from the representative volume.	No.

§ 63.332 Representative volume.

(a) The representative volume is the volume of groundwater that would be withdrawn annually from an aquifer containing less than 10,000 milligrams of total dissolved solids per liter of water to supply a given water demand. DOE must project the concentration of radionuclides released from the Yucca Mountain disposal system that will be in the representative volume. DOE must use the projected concentrations to demonstrate a reasonable expectation that the Yucca Mountain disposal system complies with § 63.331. The DOE must make the following assumptions concerning the representative volume:

(1) It includes the highest concentration level in the plume of contamination in the accessible environment;

(2) Its position and dimensions in the aquifer are determined using average hydrologic characteristics which have cautious, but reasonable, values representative of the aquifers along the radionuclide migration path from the Yucca Mountain repository to the accessible environment as determined by site characterization; and

(3) It contains 3,000 acre-feet of water (about 3,714,450,000 liters or 977,486,000 gallons).

(b) DOE must use one of two alternative methods for determining the dimensions of the representative volume. The DOE must propose its chosen method, and any underlying assumptions, to NRC for approval.

(1) DOE may calculate the dimensions as a well-capture zone. If DOE uses this approach, it must assume that the:

(i) Water supply well(s) has (have) characteristics consistent with public water supply wells in the Town of Amargosa Valley, Nevada, for example, well-bore size and length of the screened intervals;

(ii) Screened interval(s) include(s) the highest concentration in the plume of contamination in the accessible environment; and

(iii) Pumping rates and the placement of the well(s) must be set to produce an annual withdrawal equal to the representative volume and to tap the highest concentration within the plume of contamination.

(2) DOE may calculate the dimensions as a slice of the plume. If DOE uses this approach, it must:

(i) Propose, for approval, where the location of the edge of the plume of contamination occurs. For example, the place where the concentration of radionuclides reaches 0.1% of the level of the highest concentration in the accessible environment;

(ii) Assume that the slice of the plume is perpendicular to the prevalent direction of flow of the aquifer; and

(iii) Assume that the volume of groundwater contained within the slice of the plume equals the representative volume.

ADDITIONAL PROVISIONS

§ 63.342 Limits on performance assessments.

(a) DOE's performance assessments conducted to show compliance with §§ 63.311(a)(1), 63.321(b)(1), and 63.331 shall not include consideration of very unlikely features, events, or processes, *i.e.*, those that are estimated to have less than one chance in 100,000,000 per year of occurring. In addition, DOE's performance assessments need not

evaluate the impacts resulting from any features, events, and processes or sequences of events and processes with a higher chance of occurring if the results of the performance assessments would not be changed significantly in the initial 10,000-year period after disposal.

(b) For performance assessments conducted to show compliance with §§ 63.321(b)(1) and 63.331, DOE's performance assessments shall exclude the unlikely features, events, and processes, or sequences of events and processes, *i.e.*, those that are estimated to have less than one chance in 100,000 per year of occurring and at least one chance in 100,000,000 per year of occurring.

(c) For performance assessments conducted to show compliance with §§ 63.311(a)(2) and 63.321(b)(2), DOE's performance assessments shall project the continued effects of the features, events, and processes included in paragraph (a) of this section beyond the 10,000-year post-disposal period through the period of geologic stability. DOE must evaluate all of the features, events, or processes included in paragraph (a) of this section, and also:

(1) DOE must assess the effects of seismic and igneous activity scenarios, subject to the probability limits in paragraph (a) of this section for very unlikely features, events, and processes, or sequences of events and processes. Performance assessments conducted to show compliance with § 63.321(b)(2) are also subject to the probability limits in paragraph (b) of this section for unlikely features, events, and processes, or sequences of events and processes.

(i) The seismic analysis may be limited to the effects caused by damage to the drifts in the repository, failure of the waste packages, and changes in the elevation of the water table under Yucca Mountain (*i.e.*, the magnitude of the water table rise under Yucca Mountain).

(ii) The igneous activity analysis may be limited to the effects of a volcanic event directly intersecting the repository. The igneous event may be limited to that causing damage to the waste packages directly, causing releases of radionuclides to the biosphere, atmosphere, or groundwater.

(2) DOE must assess the effects of climate change. The climate change analysis may be limited to the effects of increased water flow through the repository as a result of climate change, and the resulting transport and release of radionuclides to the accessible environment. The nature and degree of climate change may be represented by constant-in-time climate conditions. The analysis may commence at 10,000 years after disposal and shall extend through the period of geologic stability. The constant-in-time values to be used to represent climate change are to be the spatial average of the deep percolation rate within the area bounded by the repository footprint. The constant-in-time deep percolation rates to be used to represent climate change shall be based on a lognormal distribution with an arithmetic mean of 41 mm/year (1.6 in./year) and a standard deviation of 33 mm/year (1.3 in./year). The lognormal distribution is to be truncated so that the deep percolation rates vary between 10 and 100 mm/year (0.39 and 3.9 in./year).

(3) DOE must assess the effects of general corrosion on engineered barriers. DOE may use a constant representative corrosion rate throughout the period of geologic stability or a distribution of corrosion rates correlated to other repository parameters.

[74 FR 10829, Mar. 13, 2009]

§ 63.343 Severability of individual protection and groundwater protection standards.

The individual protection and groundwater protection standards are severable.

PART 70—DOMESTIC LICENSING OF SPECIAL NUCLEAR MATERIAL

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APPENDIX A TO PART 70—REPORTABLE SAFETY EVENTS

AUTHORITY: Atomic Energy Act of 1954, secs. 51, 53, 57(d), 108, 122, 161, 182, 183, 184, 186, 187, 193, 223, 234, 274, 1701 (42 U.S.C. 2071, 2073, 2077(d), 2138, 2152, 2201, 2232, 2233, 2234, 2236, 2237, 2243, 2273, 2282, 2021, 2297f); Energy Reorganization Act of 1974, secs. 201, 202, 206, 211 (42 U.S.C. 5841, 5842, 5846, 5851); Nuclear Waste Policy Act of 1982, secs. 135, 141 (42 U.S.C. 10155, 10161); 44 U.S.C. 3504 note.

Sections 70.1(c) and 70.20a(b) also issued under secs. 135, 141, Pub. L. 97–425, 96 Stat. 2232, 2241 (42 U.S.C. 10155, 10161).

Section 70.21(g) also issued under Atomic Energy Act sec. 122 (42 U.S.C. 2152).

Section 70.31 also issued under Atomic Energy Act sec. 57(d) (42 U.S.C. 2077(d)).

Sections 70.36 and 70.44 also issued under Atomic Energy Act sec. 184 (42 U.S.C. 2234).

Section 70.81 also issued under Atomic Energy Act secs. 186, 187 (42 U.S.C. 2236, 2237).

Section 70.82 also issued under Atomic Energy Act sec. 108 (42 U.S.C. 2138).

SOURCE: 21 FR 764, Feb. 3, 1956, unless otherwise noted.

EDITORIAL NOTE: Nomenclature changes to part 70 appear at 81 FR 86910, Dec. 2, 2016.

Subpart A—General Provisions

§ 70.1 Purpose.

(a) Except as provided in paragraphs (c) and (d) of this section, the regulations of this part establish procedures and criteria for the issuance of licenses to receive title to, own, acquire, deliver, receive, possess, use, and transfer special nuclear material; and establish and provide for the terms and conditions upon which the Commission will issue such licenses.

(b) The regulations contained in this part are issued pursuant to the Atomic Energy Act of 1954, as amended (68 Stat. 919) and Title II of the Energy Reorganization Act of 1974 (88 Stat. 1242).

(c) The regulations in part 72 of this chapter establish requirements, procedures, and criteria for the issuance of licenses to possess:

(1) Spent fuel, power reactor-related Greater than Class C (GTCC) waste, and other radioactive materials associated with spent fuel storage in an independent spent fuel storage installation (ISFSI), or

(2) Spent fuel, high-level radioactive waste, power reactor-related GTCC waste, and other radioactive materials associated with the storage in a monitored retrievable storage installation (MRS), and the terms and conditions under which the Commission will issue such licenses.

(d) As provided in part 76 of this chapter, the regulations of this part establish procedures and criteria for physical security and material control and accounting for the issuance of a certificate of compliance or the approval of a compliance plan.

(e) As provided in the Atomic Energy Act of 1954, as amended, the regulations in this part establish requirements, procedures, and criteria for the issuance of licenses to uranium enrichment facilities.

[21 FR 764, Feb. 3, 1956, as amended at 32 FR 4056, Mar. 15, 1967; 40 FR 8791, Mar. 3, 1975; 43 FR 6924, Feb. 17, 1978; 45 FR 74712, Nov. 12, 1980; 53 FR 31682, Aug. 19, 1988; 59 FR 48960, Sept. 23, 1994; 62 FR 6669, Feb. 12, 1997; 66 FR 51838, Oct. 11, 2001]

§ 70.2 Scope.

Except as provided in §§ 70.11 to 70.13, inclusive, the regulations in this part apply to all persons in the United States. This part also gives notice to all persons who knowingly provide to any licensee, applicant, contractor, or subcontractor, components, equipment, materials, or other goods or services, that relate to a licensee's or applicant's activities subject to this part, that they may be individually subject to NRC enforcement action for violation of § 70.10.

[63 FR 1898, Jan. 13, 1998]

§ 70.3 License requirements.

No person subject to the regulations in this part shall receive title to, own, acquire, deliver, receive, possess, use, or transfer special nuclear material except as authorized in a license issued by the Commission pursuant to these regulations.

[32 FR 2562, Feb. 7, 1967, as amended at 43 FR 6924, Feb. 17, 1978]

§ 70.4 Definitions.

Act means the Atomic Energy Act of 1954 (68 Stat 919), including any amendments thereto;

Acute, as used in this part, means a single radiation dose or chemical exposure event or multiple radiation dose or chemical exposure events occurring within a short time (24 hours or less).

Agreement State as designated in part 150 of this chapter means any State with which the Commission has entered into an effective agreement under subsection 274b. of the Act. *Nonagreement State* means any other State.

Alert means events may occur, are in progress, or have occurred that could lead to a release of radioactive material[s] but that the release is not expected to require a response by an offsite response organization to protect persons offsite.

Atomic energy means all forms of energy released in the course of nuclear fission or nuclear transformation;

Atomic weapon means any device utilizing atomic energy, exclusive of the means for transporting or propelling the device (where such means is a separable and divisible part of the device), the principal purpose of which is for use as, or for development of, a weapon, a weapon prototype, or a weapon test device;

Available and reliable to perform their function when needed, as used in subpart H of this part, means that, based on the analyzed, credible conditions in the integrated safety analysis, items relied on for safety will perform their intended safety function when needed, and management measures will be implemented that ensure compliance with the performance requirements of § 70.61 of this part, considering factors such as necessary maintenance, operating limits, common-cause failures, and the likelihood and consequences of failure or degradation of the items and measures.

Commencement of construction means taking any action defined as ''construction'' or any other activity at the site of a facility subject to the regulations in this part that has a reasonable nexus to:

(1) Radiological health and safety; or

(2) Common defense and security.

Commission means the Nuclear Regulatory Commission or its duly authorized representatives;

Common defense and security means the common defense and security of the United States;

Configuration management (CM) means a management measure that provides oversight and control of design information, safety information, and records of modifications (both temporary and permanent) that might impact the ability of items relied on for safety to perform their functions when needed.

Construction means the installation of foundations, or in-place assembly, erection, fabrication, or testing for any structure, system, or component of a facility or activity subject to the regulations in this part that are related to radiological safety or security. The term ''construction'' does not include:

(1) Changes for temporary use of the land for public recreational purposes;

(2) Site exploration, including necessary borings to determine foundation conditions or other preconstruction monitoring to establish background information related to the suitability of the site, the environmental impacts of construction or operation, or the protection of environmental values;

(3) Preparation of the site for construction of the facility, including clearing of the site, grading, installation of drainage, erosion and other environmental mitigation measures, and construction of temporary roads and borrow areas;

(4) Erection of fences and other access control measures that are not related to the safe use of, or security of, radiological materials subject to this part;

(5) Excavation;

(6) Erection of support buildings (e.g., construction equipment storage sheds, warehouse and shop facilities, utilities, concrete mixing plants, docking and unloading facilities, and office buildings) for use in connection with the construction of the facility;

(7) Building of service facilities (e.g., paved roads, parking lots, railroad spurs, exterior utility and lighting systems, potable water systems, sanitary sewerage treatment facilities, and transmission lines);

(8) Procurement or fabrication of components or portions of the proposed facility occurring at other than the final, in-place location at the facility; or

(9) Taking any other action that has no reasonable nexus to:

(i) Radiological health and safety, or

(ii) Common defense and security.

Contiguous sites means licensee controlled locations, deemed by the Commission to be in close enough proximity to each other, that the special nuclear material must be considered in the aggregate for the purpose of physical protection.

Corporation means the United States Enrichment Corporation (USEC), or its successor, a Corporation that is authorized by statute to lease the gaseous diffusion enrichment plants in Paducah, Kentucky, and Piketon, Ohio, from the Department of Energy, or any

person authorized to operate one or both of the gaseous diffusion plants, or other facilities, pursuant to a plan for the privatization of USEC that is approved by the President.

Critical mass of special nuclear material (SNM), as used in Subpart H, means special nuclear material in a quantity exceeding 700 grams of contained uranium-235; 520 grams of uranium-233; 450 grams of plutonium; 1500 grams of contained uranium-235, if no uranium enriched to more than 4 percent by weight of uranium-235 is present; 450 grams of any combination thereof; or one-half such quantities if massive moderators or reflectors made of graphite, heavy water, or beryllium may be present.

Decommission means to remove a facility or site safely from service and reduce residual radioactivity to a level that permits—

(1) Release of the property for unrestricted use and termination of the license; or

(2) Release of the property under restricted conditions and termination of the license.

Department and *Department of Energy* means the Department of Energy Organization Act (Pub. L. 95–91, 91 Stat. 565, 42 U.S.C. 7101 *et seq.*), to the extent that the Department, or its duly authorized representatives, exercises functions formerly vested in the U.S. Atomic Energy Commission, its Chairman, members, officers and components and transferred to the U.S. Energy Research and Development Administration and to the Administrator thereof pursuant to sections 104(b), (c) and (d) of the Energy Reorganization Act of 1974 (Pub. L. 93–438, 88 Stat. 1233 at 1237, 42 U.S.C. 5814) and retransferred to the Secretary of Energy pursuant to section 301(a) of the Department of Energy Organization Act (Pub. L. 95–91, 91 Stat. 565 at 577–578, 42 U.S.C. 7151).

Double contingency principle means that process designs should incorporate sufficient factors of safety to require at least two unlikely, independent, and concurrent changes in process conditions before a criticality accident is possible.

Effective dose equivalent means the sum of the products of the dose equivalent to the body organ or tissue and the weighting factors applicable to each of the body organs or tissues that are irradiated. Weighting factors are: 0.25 for gonads, 0.15 for breast, 0.12 for red bone marrow, 0.12 for lungs, 0.03 for thyroid, 0.03 for bone surface, and 0.06 for each of the other five organs receiving the highest dose equivalent.

Effective kilograms of special nuclear material means: (1) For plutonium and uranium-233 their weight in kilograms; (2) For uranium with an enrichment in the isotope U-235 of 0.01 (1%) and above, its element weight in kilograms multiplied by the square of its enrichment expressed as a decimal weight fraction; and (3) For uranium with an enrichment in the isotope U-235 below 0.01 (1%), by its element weight in kilograms multiplied by 0.0001.

Formula quantity means strategic special nuclear material in any combination in a quantity of 5000 grams or more computed by the formula, grams = (grams contained U–235) + 2.5 (grams U–233 + grams plutonium). This class of material is sometimes referred to as a Category I quantity of material.

Government agency means any executive department, commission, independent establishment, corporation, wholly or partly owned by the United States of America which is an instrumentality of the United States, or any board, bureau, division, service, office, officer, authority, administration, or other establishment in the executive branch of the Government;

Hazardous chemicals produced from licensed materials means substances having licensed material as precursor compound(s) or substances that physically or chemically interact with licensed materials; and that are toxic, explosive, flammable, corrosive, or reactive to the extent that they can endanger life or health if not adequately controlled. These include substances commingled with licensed material, and include substances such as hydrogen fluoride that is produced by the reaction of uranium hexafluoride and water, but do not include substances prior to process addition to licensed material or after process separation from licensed material.

Integrated safety analysis (ISA) means a systematic analysis to identify facility and external hazards and their potential for initiating accident sequences, the potential accident sequences, their likelihood and consequences, and the items relied on for safety. As used here, integrated means joint consideration of, and protection from, all relevant hazards, including radiological, nuclear criticality, fire, and chemical. However, with respect to compliance with the regulations of this part, the NRC requirement is limited to consideration of the effects of all relevant hazards on radiological safety, prevention of nuclear criticality accidents, or chemical hazards directly associated with NRC licensed radioactive material. An ISA can be performed process by process, but all processes must be integrated, and process interactions considered.

Integrated safety analysis summary means a document or documents submitted with the license application, license amendment application, license renewal application, or pursuant to § 70.62(c)(3)(ii) that provides a synopsis of the results of the integrated safety analysis and contains the information specified in § 70.65(b). The ISA Summary can be submitted as one document for the entire facility, or as multiple documents that cover all portions and processes of the facility.

Items relied on for safety mean structures, systems, equipment, components, and activities of personnel that are relied on to prevent potential accidents at a facility that could exceed the performance requirements in § 70.61 or to mitigate their potential consequences. This does not limit the licensee from identifying additional structures, systems, equipment, components, or activities of personnel (*i.e.*, beyond those in the minimum set necessary for compliance with the performance requirements) as items relied on for safety.

License, except where otherwise specified, means a license issued pursuant to the regulations in this part;

Management measures mean the functions performed by the licensee, generally on a continuing basis, that are applied to items relied on for safety, to ensure the items are available and reliable to perform their functions when needed. Management measures include configuration management, maintenance, training and qualifications, procedures, audits and assessments, incident investigations, records management, and other quality assurance elements.

Person means (1) any individual, corporation, partnership, firm, association, trust, estate, public or private institution, group, Government agency other than the Commission or the Department, except that the Department shall be considered a person within the meaning of the regulations in this part to the extent that its facilities and activities are subject to the licensing and related regulatory authority of the Commission pursuant to section 202 of the Energy Reorganization Act of 1974 (88 Stat. 1244), any State or any political subdivision of or any political entity within a State, any foreign government or nation or any political subdivision of any such government or nation, or other entity; and (2) any legal successor, representative, agent, or agency of the foregoing;

Plutonium processing and fuel fabrication plant means a plant in which the following operations or activities are conducted: (1) Operations for manufacture of reactor fuel containing plutonium including any of the following: (i) Preparation of fuel material; (ii) formation of fuel material into desired shapes; (iii) application of protective cladding; (iv) recovery of scrap material; and (v) storage associated with such operations; or (2) Research and development activities involving any of the operations described in paragraph (1) of this definition except for research and development activities utilizing unsubstantial amounts of plutonium.

Principal activities, as used in this part, means activities authorized by the license which are essential to achieving the purpose(s) for which the license was issued or amended. Storage during which no licensed material is accessed for use or disposal and activities incidental to decontamination or decommissioning are not principal activities.

Produce, when used in relation to special nuclear material, means (1) to manufacture, make, produce, or refine

special nuclear material; (2) to separate special nuclear material from other substances in which such material may be contained; or (3) to make or to produce new special nuclear material;

Research and development means (1) theoretical analysis, exploration, or experimentation; or (2) the extension of investigative findings and theories of a scientific or technical nature into practical application for experimental and demonstration purposes, including the experimental production and testing of models, devices, equipment, materials, and processes;

Restricted Data means all data concerning (1) design, manufacture or utilization of atomic weapons; (2) the production of special nuclear material; or (3) the use of special nuclear material in the production of energy, but shall not include data declassified or removed from the Restricted Data category pursuant to section 142 of the Act;

Sealed source means any special nuclear material that is encased in a capsule designed to prevent leakage or escape of the special nuclear material.

Site Area emergency means events may occur, are in progress, or have occurred that could lead to a significant release of radioactive material and that could require a response by offsite response organizations to protect persons offsite.

Source material means source material as defined in section 11z. of the Act and in the regulations contained in part 40 of this chapter;

Special nuclear material means (1) plutonium, uranium 233, uranium enriched in the isotope 233 or in the isotope 235, and any other material which the Commission, pursuant to the provisions of section 51 of the act, determines to be special nuclear material, but does not include source material; or (2) any material artificially enriched by any of the foregoing but does not include source material;

Special nuclear material of low strategic significance means:

(1) Less than an amount of special nuclear material of moderate strategic significance as defined in paragraph (1) of the definition of strategic nuclear material of moderate strategic significance in this section, but more than 15 grams of uranium-235 (contained in uranium enriched to 20 percent or more in U-235 isotope) or 15 grams of uranium-233 or 15 grams of plutonium or the combination of 15 grams when computed by the equation, grams = (grams contained U-235) + (grams plutonium) + (grams U-233); or

(2) Less than 10,000 grams but more than 1,000 grams of uranium-235 (contained in uranium enriched to 10 percent or more but less than 20 percent in the U-235 isotope); or

(3) 10,000 grams or more of uranium-235 (contained in uranium enriched above natural but less than 10 percent in the U-235 isotope).

This class of material is sometimes referred to as a Category III quantity of material.

Special nuclear material of moderate strategic significance means:

(1) Less than a formula quantity of strategic special nuclear material but more than 1,000 grams of uranium-235 (contained in uranium enriched to 20 percent or more in the U-235 isotope) or more than 500 grams of uranium-233 or plutonium, or in a combined quantity of more than 1,000 grams when computed by the equation, grams = (grams contained U-235) + 2 (grams U-233 + grams plutonium); or

(2) 10,000 grams or more of uranium-235 (contained in uranium enriched to 10 percent or more but less than 20 percent in the U-235 isotope).

This class of material is sometimes referred to as a Category II quantity of material.

Special nuclear material scrap means the various forms of special nuclear material generated during chemical and mechanical processing, other than recycle material and normal process intermediates, which are unsuitable for use in their present form, but all or part of which will be used after further processing.

Strategic special nuclear material means uranium-235 (contained in uranium enriched to 20 percent or more in the U^{235} isotope), uranium-233, or plutonium.

Transient shipment means a shipment of nuclear material, originating and terminating in foreign countries, on a

vessel or aircraft which stops at a United States port.

Unacceptable performance deficiencies mean deficiencies in the items relied on for safety or the management measures that need to be corrected to ensure an adequate level of protection as defined in 10 CFR 70.61(b), (c), or (d).

United States, when used in a geographical sense, includes Puerto Rico and all territories and possessions of the United States.

Uranium enrichment facility means:

(1) Any facility used for separating the isotopes of uranium or enriching uranium in the isotope 235, except laboratory scale facilities designed or used for experimental or analytical purposes only; or

(2) Any equipment or device, or important component part especially designed for such equipment or device, capable of separating the isotopes of uranium or enriching uranium in the isotope 235.

Worker, when used in Subpart H of this Part, means an individual who receives an occupational dose as defined in 10 CFR 20.1003.

[21 FR 764, Feb. 3, 1956]

EDITORIAL NOTE: For FEDERAL REGISTER citations affecting § 70.4, see the List of CFR Sections Affected, which appears in the Finding Aids section of the printed volume and at *www.govinfo.gov*.

§ 70.5 Communications.

(a) Unless otherwise specified or covered under the regional licensing program as provided in paragraph (b) of this section, any communication or report concerning the regulations in this part and any application filed under these regulations may be submitted to the Commission as follows:

(1) By mail addressed to: ATTN: Document Control Desk, Director, Office of Nuclear Material Safety and Safeguards or Director, Office of Nuclear Security and Incident Response, U.S. Nuclear Regulatory Commission, Washington, DC 20555–0001.

(2) By hand delivery to the Director, Office of Nuclear Material Safety and Safeguards or Director, Office of Nuclear Security and Incident Response at the NRC's offices at 11555 Rockville Pike, Rockville, Maryland.

(3) Where practicable, by electronic submission, for example, via Electronic Information Exchange, and CD-ROM. Electronic submissions must be made in a manner that enables the NRC to receive, read, authenticate, distribute, and archive the submission, and process and retrieve it a single page at a time. Detailed guidance on making electronic submissions can be obtained by visiting the NRC's Web site at *http://www.nrc.gov/site-help/e-submittals.html*; by e-mail to *MSHD.Resource@nrc.gov*; or by writing the Office of the Chief Information Officer, U.S. Nuclear Regulatory Commission, Washington, DC 20555–0001. The guidance discusses, among other topics, the formats the NRC can accept, the use of electronic signatures, and the treatment of nonpublic information.

(4) Classified communications shall be transmitted to the NRC Headquarters' classified mailing address as specified in appendix A to part 73 of this chapter or delivered by hand in accordance with paragraph (a)(2) of this section.

(b) The Commission has delegated to the four Regional Administrators licensing authority for selected parts of its decentralized licensing program for nuclear materials as described in paragraph (b)(1) of this section. Any communication, report, or application covered under this licensing program must be submitted to the appropriate Regional Administrator. The Administrators' jurisdictions and mailing addresses are listed in paragraph (b)(2) of this section.

(1) The delegated licensing program includes authority to issue, renew, amend, cancel, modify, suspend, or revoke licenses for nuclear materials issued pursuant to 10 CFR parts 30 through 36, 39, 40, and 70 to all persons for academic, medical, and industrial uses, with the following exceptions:

(i) Activities in the fuel cycle and special nuclear material in quantities sufficient to constitute a critical mass in any room or area. This exception does not apply to license modifications relating to termination of special nuclear material licenses that authorize possession of larger quantities when the case is referred for action from

NRC's Headquarters to the Regional Administrators.

(ii) Health and safety design review of sealed sources and devices and approval, for licensing purposes, of sealed sources and devices.

(iii) Processing of source material for extracting of metallic compounds (including Zirconium, Hafnium, Tantalum, Titanium, Niobium, etc.).

(iv) Distribution of products containing radioactive material under §§ 32.11 through 32.30 and 40.52 of this chapter to persons exempt from licensing requirements.

(v) New uses or techniques for use of byproduct, source, or special nuclear material.

(vi) Reviews pursuant to § 70.32(c).

(vii) Uranium enrichment facilities.

(2) *Submissions*—(i) *Region I*. The regional licensing program involves all Federal facilities in the region and non-Federal licensees in the following Region I non-Agreement States and the District of Columbia: Connecticut, Delaware, and Vermont. All mailed or hand-delivered inquiries, communications, and applications for a new license or an amendment or renewal of an existing license specified in paragraph (b)(1) of this section must use the following address: U.S. Nuclear Regulatory Commission, Region I, Nuclear Material Section B, 2100 Renaissance Boulevard, Suite 100, King of Prussia, PA 19406–2713; where email is appropriate it should be addressed to *RidsRgn1MailCenter.Resource@nrc.gov*.

(ii) *Region II*. The regional licensing program involves all Federal facilities in the region and non-Federal licensees in the following Region II non-Agreement States and territories: West Virginia, Puerto Rico, and the Virgin Islands. All mailed or hand-delivered inquiries, communications, and applications for a new license or an amendment, renewal, or termination request of an existing license specified in paragraph (b)(1) of this section must use the following address: U.S. Nuclear Regulatory Commission, Region I, Nuclear Material Section B, 475 Allendale Road, King of Prussia, PA 19406–1415; where e-mail is appropriate it should be addressed to *RidsRgn1MailCenter.Resource@nrc.gov*.

(iii) *Region III*. (A) The regional licensing program for mining and milling involves all Federal facilities in the region, and non-Federal licensees in the Region III non-Agreement States of Indiana, Michigan, Missouri and Region III Agreement States of Minnesota, Wisconsin, and Iowa. All mailed or hand-delivered inquiries, communications, and applications for a new license or an amendment, renewal, or termination request of an existing license specified in paragraph (b)(1) of this section must use the following address: U.S. Nuclear Regulatory Commission, Region III, Material Licensing Section, 2443 Warrenville Road, Suite 210, Lisle, IL 60532–4352; where e-mail is appropriate it should be addressed to *RidsRgn3MailCenter.Resource@nrc.gov*.

(B) Otherwise, the regional licensing program involves all Federal facilities in the region and non-Federal licensees in the following Region III non-Agreement States: Indiana, Michigan, and Missouri. All mailed or hand-delivered inquiries, communications, and applications for a new license or an amendment, or renewal of an existing license specified in paragraph (b)(1) of this section must use the following address: U.S. Nuclear Regulatory Commission, Region III, Material Licensing Section, 2443 Warrenville Road, Suite 210, Lisle, IL 60532–4352; where e-mail is appropriate it should be addressed to *RidsRgn3MailCenter.Resource@nrc.gov*. Outside of this jurisdiction, concerning the licensing program involving mining and milling, the Agreement States of Illinois and Ohio should be contacted.

(iv) *Region IV*. (A) The regional licensing program for mining and milling involves all Federal facilities in the region, and non-Federal licensees in the Region IV non-Agreement States and territory of Alaska, Hawaii, Idaho, Montana, South Dakota, Wyoming and Guam and Region IV Agreement States of Oregon, California, Nevada, New Mexico, Louisiana, Mississippi, Arkansas, Oklahoma, Kansas, Nebraska, and North Dakota. All mailed or hand-delivered inquiries, communications, and applications for a new license or an amendment or renewal of an existing license specified in paragraph (b)(1) of

this section must use the following address: U.S. Nuclear Regulatory Commission, Region IV, Division of Nuclear Materials Safety, 1600 E. Lamar Blvd., Arlington, TX 76011–4511; where email is appropriate, it should be addressed to *RidsRgn4MailCenter@nrc.gov*.

(B) Otherwise, the regional licensing program involves all Federal facilities in the region and non-Federal licensees in the following Region IV non-Agreement States and territory: Alaska, Hawaii, Idaho, Montana, South Dakota, Wyoming, and Guam. All mailed or hand-delivered inquiries, communications, and applications for a new license or an amendment or renewal of an existing license specified in paragraph (b)(1) of this section must use the following address: U.S. Nuclear Regulatory Commission, Region IV, Division of Nuclear Materials Safety, 1600 E. Lamar Blvd., Arlington, TX 76011–4511; where email is appropriate, it should be addressed to *RidsRgn4MailCenter@nrc.gov*. Outside of this jurisdiction, concerning the licensing program involving mining and milling, the Agreement States of Colorado, Utah, Texas and Washington should be contacted.

[48 FR 16032, Apr. 14, 1983]

EDITORIAL NOTE: For FEDERAL REGISTER citations affecting § 70.5, see the List of CFR Sections Affected, which appears in the Finding Aids section of the printed volume and at *www.govinfo.gov*.

§ 70.6 Interpretations.

Except as specifically authorized by the Commission in writing, no interpretation of the meaning of the regulations in this part by any officer or employee of the Commission other than a written interpretation by the General Counsel will be recognized to be binding upon the Commission.

§ 70.7 Employee protection.

(a) Discrimination by a Commission licensee, an applicant for a Commission license, or a contractor or subcontractor of a Commission licensee or applicant against an employee for engaging in certain protected activities is prohibited. Discrimination includes discharge and other actions that relate to compensation, terms, conditions, or privileges of employment. The protected activities are established in section 211 of the Energy Reorganization Act of 1974, as amended, and in general are related to the administration or enforcement of a requirement imposed under the Atomic Energy Act or the Energy Reorganization Act.

(1) The protected activities include but are not limited to:

(i) Providing the Commission or his or her employer information about alleged violations of either of the statutes named in paragraph (a) introductory text of this section or possible violations of requirements imposed under either of those statutes;

(ii) Refusing to engage in any practice made unlawful under either of the statutes named in paragraph (a) introductory text or under these requirements if the employee has identified the alleged illegality to the employer;

(iii) Requesting the Commission to institute action against his or her employer for the administration or enforcement of these requirements;

(iv) Testifying in any Commission proceeding, or before Congress, or at any Federal or State proceeding regarding any provision (or proposed provision) of either of the statutes named in paragraph (a) introductory text.

(v) Assisting or participating in, or is about to assist or participate in, these activities.

(2) These activities are protected even if no formal proceeding is actually initiated as a result of the employee assistance or participation.

(3) This section has no application to any employee alleging discrimination prohibited by this section who, acting without direction from his or her employer (or the employer's agent), deliberately causes a violation of any requirement of the Energy Reorganization Act of 1974, as amended, or the Atomic Energy Act of 1954, as amended.

(b) Any employee who believes that he or she has been discharged or otherwise discriminated against by any person for engaging in protected activities specified in paragraph (a)(1) of this section may seek a remedy for the discharge or discrimination through an administrative proceeding in the Department of Labor. The administrative proceeding must be initiated within 180

days after an alleged violation occurs. The employee may do this by filing a complaint alleging the violation with the Department of Labor, Employment Standards Administration, Wage and Hour Division. The Department of Labor may order reinstatement, back pay, and compensatory damages.

(c) A violation of paragraphs (a), (e), or (f) of this section by a Commission licensee, an applicant for a Commission license, or a contractor or subcontractor of a Commission licensee or applicant may be grounds for—

(1) Denial, revocation, or suspension of the license.

(2) Imposition of a civil penalty on the licensee, applicant, or a contractor or subcontractor of the licensee or applicant.

(3) Other enforcement action.

(d) Actions taken by an employer, or others, which adversely affect an employee may be predicated upon nondiscriminatory grounds. The prohibition applies when the adverse action occurs because the employee has engaged in protected activities. An employee's engagement in protected activities does not automatically render him or her immune from discharge or discipline for legitimate reasons or from adverse action dictated by nonprohibited considerations.

(e)(1) Each specific licensee, each applicant for a specific license, and each general licensee subject to part 19 shall prominently post the revision of NRC Form 3, ''Notice to Employees,'' referenced in 10 CFR 19.11(c).

(2) The posting of NRC Form 3 must be at locations sufficient to permit employees protected by this section to observe a copy on the way to or from their place of work. Premises must be posted not later than 30 days after an application is docketed and remain posted while the application is pending before the Commission, during the term of the license, and for 30 days following license termination.

(3) Copies of NRC Form 3 may be obtained by writing to the Regional Administrator of the appropriate U.S. Nuclear Regulatory Commission Regional Office listed in appendix D to part 20 of this chapter, via email to *Forms.Resource@nrc.gov*, or by visiting the NRC's online library at *http://www.nrc.gov/reading-rm/doc-collections/forms/*.

(f) No agreement affecting the compensation, terms, conditions, or privileges of employment, including an agreement to settle a complaint filed by an employee with the Department of Labor pursuant to section 211 of the Energy Reorganization Act of 1974, as amended, may contain any provision which would prohibit, restrict, or otherwise discourage an employee from participating in protected activity as defined in paragraph (a)(1) of this section including, but not limited to, providing information to the NRC or to his or her employer on potential violations or other matters within NRC's regulatory responsibilities.

[58 FR 52413, Oct. 8, 1993, as amended at 60 FR 24552, May 9, 1995; 61 FR 6765, Feb. 22, 1996; 68 FR 58816, Oct. 10, 2003; 72 FR 63974, Nov. 14, 2007; 73 FR 30459, May 28, 2008; 79 FR 66605, Nov. 10, 2014]

§ 70.8 Information collection requirements: OMB approval.

(a) The Nuclear Regulatory Commission has submitted the information collection requirements contained in this part to the office of Management and Budget (OMB) for approval as required by the Paperwork reduction Act (44 U.S.C. 3501 *et seq.*). The NRC may not conduct or sponsor, and a person is not required to respond to, a collection of information unless it displays a currently valid OMB control number. OMB has approved the information collection requirements contained in this part under control number 3150–0009.

(b) The approved information collection requirements contained in this part appear in §§ 70.9, 70.17, 70.19, 70.20a, 70.20b, 70.21, 70.22, 70.24, 70.25, 70.32, 70.33, 70.34, 70.38, 70.39, 70.42, 70.50, 70.51, 70.52, 70.59, 70.61, 70.62, 70.64, 70.65, 70.72, 70.73, 70.74, and Appendix A.

(c) This part contains information collection requirements in addition to those approved under the control number specified in paragraph (a) of this section. These information collection requirements and the control numbers under which they are approved are as follows:

(1) In § 70.21(g), Form N–71 and associated forms are approved under control number 3150–0056.

(2) In § 70.38, NRC form 314 is approved under control number 3150–0028.

(3) In § 70.21(g), DOC/NRC Forms AP–1, AP–A, and associated forms are approved under control number 0694–0135.

[49 FR 19628, May 9, 1984, as amended at 52 FR 19305, May 22, 1987; 56 FR 40769, Aug. 16, 1991; 57 FR 18392, Apr. 30, 1992; 58 FR 39634, July 26, 1993; 62 FR 52189, Oct. 6, 1997; 65 FR 56225, Sept. 18, 2000; 67 FR 78142, Dec. 23, 2003; 73 FR 78606, Dec. 23, 2008]

§ 70.9 Completeness and accuracy of information.

(a) Information provided to the Commission by an applicant for a license or by a licensee or information required by statute or by the Commission's regulations, orders, or license conditions to be maintained by the applicant or the licensee shall be complete and accurate in all material respects.

(b) Each applicant or licensee shall notify the Commission of information identified by the applicant or licensee as having for the regulated activity a significant implication for public health and safety or common defense and security. An applicant or licensee violates this paragraph only if the applicant or licensee fails to notify the Commission of information that the applicant or licensee has identified as having a significant implication for public health and safety or common defense and security. Notification shall be provided to the Administrator of the appropriate Regional Office within two working days of identifying the information. This requirement is not applicable to information which is already required to be provided to the Commission by other reporting or updating requirements.

[52 FR 49373, Dec. 31, 1987]

§ 70.10 Deliberate misconduct.

(a) Any licensee, applicant for a license, employee of a licensee or applicant; or any contractor (including a supplier or consultant), subcontractor, employee of a contractor or subcontractor of any licensee or applicant for a license, who knowingly provides to any licensee, applicant, contractor, or subcontractor, any components, equipment, materials, or other goods or services that relate to a licensee's or applicant's activities in this part, may not:

(1) Engage in deliberate misconduct that causes or would have caused, if not detected, a licensee or applicant to be in violation of any rule, regulation, or order; or any term, condition, or limitation of any license issued by the Commission; or

(2) Deliberately submit to the NRC, a licensee, an applicant, or a licensee's or applicant's contractor or subcontractor, information that the person submitting the information knows to be incomplete or inaccurate in some respect material to the NRC.

(b) A person who violates paragraph (a)(1) or (a)(2) of this section may be subject to enforcement action in accordance with the procedures in 10 CFR part 2, subpart B.

(c) For the purposes of paragraph (a)(1) of this section, deliberate misconduct by a person means an intentional act or omission that the person knows:

(1) Would cause a licensee or applicant to be in violation of any rule, regulation, or order; or any term, condition, or limitation, of any license issued by the Commission; or

(2) Constitutes a violation of a requirement, procedure, instruction, contract, purchase order, or policy of a licensee, applicant, contractor, or subcontractor.

[63 FR 1899, Jan. 13, 1998]

Subpart B—Exemptions

§ 70.11 Persons using special nuclear material under certain Department of Energy and Nuclear Regulatory Commission contracts.

Except to the extent that Department facilities or activities of the types subject to licensing pursuant to section 202 of the Energy Reorganization Act of 1974 are involved, any prime contractor of the Department is exempt from the requirements for a license set forth in section 53 of the Act and from the regulations in this part to the extent that such contractor, under his prime contract with the Department receives title to, owns, acquires, delivers, receives, possesses, uses, or transfers special nuclear material for:

(a) The performance of work for the Department at a United States Government-owned or controlled site, including the transportation of special nuclear material to or from such site and the performance of contract services during temporary interruptions of such transportation; (b) research in, or development, manufacture, storage, testing or transportation of, atomic weapons or components thereof; or (c) the use or operation of nuclear reactors or other nuclear devices in a United States Government-owned vehicle or vessel. In addition to the foregoing exemptions, and subject to the requirement for licensing of Department facilities and activities pursuant to section 202 of the Energy Reorganization Act of 1974, any prime contractor or subcontractor of the Department or the Commission is exempt from the requirements for a license set forth in section 53 of the Act and from the regulations in this part to the extent that such prime contractor or subcontractor receives title to, owns, acquires, delivers, receives, possesses, uses, or transfers special nuclear material under his prime contract or subcontract when the Commission determines that the exemption of the prime contractor or subcontractor is authorized by law; and that, under the terms of the contract or subcontract there is adequate assurance that the work thereunder can be accomplished without undue risk to the public health and safety.

[40 FR 14085, Mar. 28, 1975; 40 FR 16047, Apr. 9, 1975, as amended at 43 FR 6924, Feb. 17, 1978; 65 FR 54950, Sept. 12, 2000]

§ 70.12 Carriers.

Common and contract carriers, freight forwarders, warehousemen, and the U.S. Postal Service are exempt from the regulations in this part to the extent that they transport special nuclear material in the regular course of carriage for another or storage incident thereto. This exemption does not apply to the storage in transit or transport of material by persons covered by the general license issued under § 70.20a and § 70.20b.

[46 FR 12696, Feb. 18, 1981]

§ 70.13 Department of Defense.

The regulations in this part do not apply to the Department of Defense to the extent that the Department receives, possesses and uses special nuclear material in accordance with the direction of the President pursuant to section 91 of the Act.

§ 70.14 Foreign military aircraft.

The regulations in this part do not apply to persons who carry special nuclear material (other than plutonium) in aircraft of the armed forces of foreign nations subject to 49 U.S.C. 40103(d).

[71 FR 15012, Mar. 27, 2006]

§ 70.17 Specific exemptions.

(a) The Commission may, upon application of any interested person or upon its own initiative, grant such exemptions from the requirements of the regulations in this part as it determines are authorized by law and will not endanger life or property or the common defense and security and are otherwise in the public interest.

(b) [Reserved]

(c) The DOE is exempt from the requirements of the regulations in this part to the extent that its activities are subject to the requirements of part 60 or part 63 of this chapter.

(d) Except as specifically provided in part 61 of this chapter, any licensee is exempt from the requirements of the regulations in this part to the extent that its activities are subject to the requirements of part 61 of this chapter.

[37 FR 5749, Mar. 21, 1972, as amended at 45 FR 65536, Oct. 3, 1980; 46 FR 13987, Feb. 25, 1981; 47 FR 57481, Dec. 27, 1982; Redesignated at 65 FR 56225, Sept. 18, 2000, as amended at 66 FR 55815, Nov. 2, 2001]

Subpart C—General Licenses

§ 70.18 Types of licenses.

Licenses for special nuclear material are of two types: general and specific. Any general license provided in this part is effective without the filing of applications with the Commission or the issuance of licensing documents to particular persons. Specific licenses

are issued to named persons upon applications filed pursuant to the regulations in this part.

[29 FR 5884, May 5, 1964]

§ 70.19 General license for calibration or reference sources.

(a) A general license is hereby issued to those persons listed below to receive title to, own, acquire, deliver, receive, possess, use and transfer in accordance with the provisions of paragraphs (b) and (c) of this section, plutonium in the form of calibration or reference sources:

(1) Any person in a non-agreement State who holds a specific license issued by the Commission or the Atomic Energy Commission which authorizes him to receive, possess, use and transfer byproduct material, source material, or special nuclear material;

(2) Any Government agency as defined in § 70.4 that holds a specific license issued by the Commission that authorizes it to receive, possess, use, or transfer byproduct material, source material, or special nuclear material; and

(3) Any person in an agreement State who holds a specific license issued by the Commission or the Atomic Energy Commission which authorizes him to receive, possess, use and transfer special nuclear material.

(b) The general license in paragraph (a) of this section applies only to calibration or reference sources which have been manufactured or initially transferred in accordance with the specifications contained in a specific license issued pursuant to § 70.39 or in accordance with the specifications contained in a specific license issued by an agreement State which authorizes manufacture of the sources for distribution to persons generally licensed by the agreement State.

(c) The general license in paragraph (a) of this section is subject to the provisions of §§ 70.32, 70.50, 70.55, 70.56, 70.91, 70.81, and 70.82; the provisions of §§ 74.11 and 74.19 of this chapter; and to the provisions of parts 19, 20, and 21 of this chapter. In addition, persons who receive title to own, acquire, deliver, receive, possess, use or transfer one or more calibration or reference sources under this general license:

(1) Shall not possess at any one time, at any one location of storage or use, more than 5 microcuries of plutonium in such sources;

(2) Shall not receive, possess, use or transfer such source unless the source, or the storage container, bears a label which includes the following statement or a substantially similar statement which contains the information called for in the following statement:[1]

The receipt, possession, use and transfer of this source, Model _____, Serial No. _____, are subject to a general license and the regulations of the United States Nuclear Regulatory Commission or of a State with which the Commission has entered into an agreement for the exercise of regulatory authority. Do not remove this label.

CAUTION—RADIOACTIVE MATERIAL—THIS SOURCE CONTAINS PLUTONIUM. DO NOT TOUCH RADIOACTIVE PORTION OF THIS SOURCE.

(Name of Manufacturer or Initial Transferor)

(3) Shall not transfer, abandon, or dispose of such source except by transfer to a person authorized by a license from the Commission or the Atomic Energy Commission or an Agreement State to receive the source.

(4) Shall store such source, except when the source is being used, in a closed container adequately designed and constructed to contain plutonium which might otherwise escape during storage.

(5) Shall not use such source for any purpose other than the calibration of radiation detectors or the standardization of other sources.

(d) The general license in paragraph (a) of this section does not authorize the manufacture, import, or export of calibration or reference sources containing plutonium.

[29 FR 5884, May 5, 1964, as amended at 32 FR 8124, June 7, 1967; 38 FR 22221, Aug. 17, 1973; 40 FR 8792, Mar. 3, 1975; 42 FR 28896, June 6, 1977; 43 FR 6924, Feb. 17, 1978; 48 FR 32329, July 15, 1983; 56 FR 40769, Aug. 16, 1991; 57 FR 33428, July 29, 1992; 67 FR 78142, Dec. 23, 2002; 72 FR 35145, June 27, 2007]

[1] Sources generally licensed under this section prior to January 19, 1975 may bear labels authorized by the regulations in effect on January 1, 1975.

§ 70.20 General license to own special nuclear material.

A general license is hereby issued to receive title to and own special nuclear material without regard to quantity. Notwithstanding any other provision of this chapter, a general licensee under this section is not authorized to acquire, deliver, receive, possess, use, transfer, import, or export special nuclear material, except as authorized in a specific license.

[33 FR 9810, July 9, 1968]

§ 70.20a General license to possess special nuclear material for transport.

(a) A general license is issued to any person to possess formula quantities of strategic special nuclear material of the types and quantities subject to the requirements of §§ 73.20, 73.25, 73.26 and 73.27 of this chapter, and irradiated reactor fuel containing material of the types and quantities subject to the requirements of § 73.37 of this chapter, in the regular course of carriage for another or storage incident. Carriers generally licensed under § 70.20b are exempt from the requirements of this section. Carriers of irradiated reactor fuel for the United States Department of Energy are also exempt from the requirements of this section. The general license is subject to the applicable provisions of §§ 70.7 (a) through (e), 70.32 (a) and (b), and §§ 70.42, 70.52, 70.55, 70.91, 70.81, 70.82 and 10 CFR 74.11.

(b) Notwithstanding any other provision of this chapter, the general license issued under this section does not authorize any person to conduct any activity that would be authorized by a license issued pursuant to parts 30 through 36, 39, 40, 50, 72, 110, or other sections of this part.

(c) Notwithstanding any other provision of this chapter, the duties of a general licensee under this section while in possession of formula quantities of strategic special nuclear material or irradiated reactor fuel in the regular course of carriage for another or storage incident thereto shall be limited to providing for the physical protection of such material against theft or sabotage. Unless otherwise provided by this section, a general license under this section is not subject to the requirements of parts 19, 20, 70 and 73.

(d) Any person who possesses formula quantities of strategic special nuclear material under this general license:

(1) Shall have submitted and received approval of a transportation security plan. The security plan shall outline the procedures that will be used to meet the requirements of §§ 73.20, 73.25, 73.26, 73.27 and 73.70(g) of this chapter including a plan for the selection, qualification, and training of armed escorts, or the specification and design of a specially designed truck or trailer as appropriate.

(2) Shall assure that the transportation is in accordance with the applicable physical protection requirements of §§ 73.20, 73.25, 73.26, 73.27 and 73.70(g) of this chapter and the applicable approved transportation security plan.

(3) Shall be subject to part 26 and § 73.80 of this chapter.

(e) Any person who possesses irradiated reactor fuel under this general license shall:

(1) Assure or receive certification from the shipper that the transportation is in accordance with the applicable physical protection requirements of § 73.37 of this chapter; and

(2) Comply with the reporting requirements of § 73.71 of this chapter.

[44 FR 26851, May 8, 1979, as amended at 44 FR 68186, Nov. 28, 1979; 46 FR 12696, Feb. 18, 1981; 47 FR 30458, July 14, 1982; 53 FR 31682, Aug. 19, 1988; 58 FR 7737, Feb. 9, 1993; 58 FR 31471, June 3, 1993; 67 FR 78142, Dec. 23, 2002; 72 FR 35145, June 27, 2007]

§ 70.20b General license for carriers of transient shipments of formula quantities of strategic special nuclear material, special nuclear material of moderate strategic significance, special nuclear material of low strategic significance, and irradiated reactor fuel.

(a) A general license is hereby issued to any person to possess transient shipments of the following kinds and quantities of special nuclear material:

(1) A formula quantity of special nuclear material of the types and quantities subject to the requirements of §§ 73.20, 73.25, 73.26, and 73.27 of this chapter.

(2) Special nuclear material of moderate and low strategic significance of

the types and quantities subject to the requirements of § 73.67 of this chapter.

(3) Irradiated reactor fuel of the type and quantity subject to the requirements of § 73.37 of this chapter.

(b) Persons generally licensed under this section are exempt from the requirements of parts 19 and 20 of this chapter and the requirements of this part, except §§ 70.32 (a) and (b), 70.52, 70.55, 70.91, 70.81, and 70.82.

(c) Persons generally licensed under this section to possess a transient shipment of special nuclear material of the kind and quantity specified in paragraph (a)(1) of this section shall provide physical protection for that shipment in accordance with or equivalent to §§ 73.20(a), 73.20(b), 73.25, and 73.71(b) of this chapter from the time a shipment enters a United States port until it exits that or another United States port.

(d) Persons generally licensed under this section to possess a transient shipment of special nuclear material of moderate or low strategic significance of the kind and quantity specified in paragraph (a)(2) of this section shall provide physical protection for that shipment in accordance with or equivalent to § 73.67 of this chapter and shall comply with the requirements of § 73.71(b) of this chapter.

(e) Persons generally licensed under this section to possess a transient shipment of irradiated reactor fuel of the kind and quantity specified in paragraph (a)(3) of this section shall provide physical protection for that shipment in accordance with or equivalent to § 73.37 of this chapter and shall comply with the requirements of § 73.71(b) of this chapter.

(f)(1) Persons generally licensed under this section, who plan to carry transient shipments with scheduled stops at United States ports, shall notify in writing the Director, Office of Nuclear Security and Incident Response, using an appropriate method listed in § 70.5(a). Classified notifications shall be sent to the NRC headquarters classified mailing address listed in appendix A to part 73 of this chapter.

(2) A person generally licensed under this section shall assure that:

(i) The notification will be received at least 10 days before transport of the shipment commences at the shipping facility;

(ii) The NRC Headquarters Operations Center shall be notified by telephone at least 2 days before commencement of the shipment at the numbers listed in appendix A to part 73 of this chapter. Classified notifications shall be made by secure telephone.

(iii) The NRC Headquarters Operations Center shall be notified by telephone of schedule changes greater than ±6 hours at the numbers listed in appendix A to part 73 of this chapter. Classified notifications shall be made by secure telephone.

(3) Persons who are generally licensed under paragraph (a)(1) of this section must include the information listed in paragraphs (f)(3)(i) through (ix) of this section. Persons who are generally licensed under § 70.20b(a)(2) and § 70.20b(a)(3) must include the information listed in paragraphs (f)(3) (i) through (viii) of this section.

(i) Location of all scheduled stops in United States territory;

(ii) Arrival and departure times for all scheduled stops in United States territory;

(iii) The type of transport vehicle;

(iv) A physical description of the shipment (elements, isotopes, and enrichments);

(v) The number and types of containers;

(vi) The name and telephone number of the carrier's representative at each stopover location in United States territory;

(vii) The estimated time and date that shipment will commence and that each country (other than the United States) along the route is scheduled to be entered;

(viii) For shipments between countries that are not party to the Convention on the Physical Protection of Nuclear Material, provide assurances, as far as is practicable, that this nuclear material will be protected during international transport at levels described in Annex I to that Convention (see appendices E and F of part 73 of this chapter); and

(ix) A physical protection plan for implementing the requirement of

§ 70.20b(c), which will include the use of armed personnel to protect the shipment during the time the shipment is in a United States port.

(g) Persons generally licensed under this section making unscheduled stops at United States ports, immediately after the decision to make an unscheduled stop, shall:

(1) Provide to the Director, Office of Security Policy and Incident Response, the information required under paragraph (f) of this section.

(2) In the case of persons generally licensed under paragraph (a)(1) of this section, arrange for local law enforcement authorities or trained and qualified private guards to protect the shipment during the stop.

(3) In the case of persons generally licensed under paragraph (a)(2) of this section, arrange for the shipment to be protected as required in § 73.67(e) of this chapter.

(4) In the case of persons generally licensed under paragraph (a)(3) of this section, arrange for the shipment to be protected as required in § 73.37(e) of this chapter.

(5) Implement these arrangements within a reasonable time after the arrival of the shipment at a United States port to remain in effect until the shipment exits that or another United States port.

[52 FR 9652, Mar. 26, 1987, as amended at 60 FR 24552, May 9, 1995; 67 FR 3585, Jan. 25, 2002; 68 FR 14529, Mar. 26, 2003; 68 FR 23575, May 5, 2003; 68 FR 58817, Oct. 10, 2003; 72 FR 35145, June 27, 2007; 74 FR 62683, Dec. 1, 2009; 83 FR 58723, Nov. 21, 2018]

Subpart D—License Applications

§ 70.21 Filing.

(a)(1) A person may apply for a license to possess and use special nuclear material in a plutonium processing or fuel fabrication plant, or for a uranium enrichment facility license, by filing the application with the Director of the NRC's Office of Nuclear Material Safety and Safeguards in accordance with the instructions in § 70.5(a). If the application is on paper or CD-ROM, only one copy need be provided. If the application is to be submitted electronically, see guidance for electronic submissions to the Commission.

(2) A person may apply for any other license issued under this part, by filing the application in accordance with the instructions in § 70.5(a). If the application is on paper, only one copy need be provided. If the application is to be submitted electronically, see guidance for electronic submissions to the Commission.

(3) Information contained in previous applications, statements, or reports filed with the Commission may be incorporated by reference if the references are clear and specific.

(b) An application for license filed pursuant to the regulations in this part will be considered also as an application for licenses authorizing other activities for which licenses are required by the Act, provided the application specifies the additional activities for which licenses are requested and complies with regulations of the Commission as to applications for such licenses.

(c) Any application which contains Restricted Data shall be prepared in such manner that all Restricted Data are separated from the unclassified information.

(d) Applications and documents submitted to the Commission in connection with applications may be made available for public inspection in accordance with the provisions of the regulations contained in part 2 of this chapter.

(e) Each application for a special nuclear material license, other than a license exempted from part 170 of this chapter, shall be accompanied by the fee prescribed in § 170.31 of this chapter. No fee will be required to accompany an application for renewal or amendment of a license, except as provided in § 170.31 of this chapter.

(f) An application for a license to possess and use special nuclear material for processing and fuel fabrication, scrap recovery or conversion of uranium hexafluoride, or for the conduct of any other activity which the Commission has determined pursuant to subpart A of part 51 of this chapter will significantly affect the quality of the environment shall be filed at least 9 months prior to commencement of construction of the plant or facility in which the activity will be conducted,

and shall be accompanied by an Environmental Report required under subpart A of part 51 of this chapter.

(g)(1) In response to a written request by the Commission, each applicant for a construction authorization or license and each recipient of a construction authorization or a license to possess and use special nuclear material shall submit facility information, as described in § 75.10 of this chapter, on IAEA Design Information Questionnaire forms and site information on DOC/NRC Form AP–A and associated forms;

(2) As required by the Additional Protocol, applicants and licensees specified in paragraph (a) of this section shall submit location information described in § 75.11 of this chapter on DOC/NRC Form AP–1 and associated forms; and

(3) Shall permit verification thereof by the International Atomic Energy Agency (IAEA) and take other action as necessary to implement the US/IAEA Safeguards Agreement, as described in Part 75 of this chapter.

(h) A license application for a uranium enrichment facility must be accompanied by an Environmental Report required under subpart A of part 51 of this chapter.

[21 FR 764, Feb. 3, 1956, as amended at 23 FR 1122, Feb. 21, 1958; 31 FR 4670, Mar. 19, 1966; 34 FR 19546, Dec. 11, 1969; 36 FR 146, Jan. 6, 1971; 37 FR 5749, Mar. 21, 1972; 49 FR 9406, Mar. 12, 1984; 49 FR 19628, 19632, May 9, 1984; 49 FR 21699, May 23, 1984; 57 FR 18392, Apr. 30, 1992; 68 FR 58817, Oct. 10, 2003; 73 FR 78606, Dec. 23, 2008; 85 FR 65663, Oct. 16, 2020]

§ 70.22 Contents of applications.

(a) Each application for a license shall contain the following information:

(1) The full name, address, age (if an individual), and citizenship of the applicant and the names and addresses of three personal references. If the applicant is a corporation or other entity, it shall indicate the State where it was incorporated or organized, the location of the principal office, the names, addresses, and citizenship of its principal officers, and shall include information known to the applicant concerning the control or ownership, if any, exercised over the applicant by any alien, foreign corporation, or foreign government;

(2) The activity for which the special nuclear material is requested, or in which special nuclear material will be produced, the place at which the activity is to be performed and the general plan for carrying out the activity;

(3) The period of time for which the license is requested;

(4) The name, amount, and specifications (including the chemical and physical form and, where applicable, isotopic content) of the special nuclear material the applicant proposes to use or produce;

(5) [Reserved]

(6) The technical qualifications, including training and experience of the applicant and members of his staff to engage in the proposed activities in accordance with the regulations in this chapter;

(7) A description of equipment and facilities which will be used by the applicant to protect health and minimize danger to life or property (such as handling devices, working areas, shields, measuring and monitoring instruments, devices for the disposal of radioactive effluents and wastes, storage facilities, criticality accident alarm systems, etc.);

(8) Proposed procedures to protect health and minimize danger to life or property (such as procedures to avoid accidental criticality, procedures for personnel monitoring and waste disposal, post-criticality accident emergency procedures, etc.).

NOTE: Where the nature of the proposed activities is such as to require consideration of the applicant's financial qualifications to engage in the proposed activities in accordance with the regulations in this chapter, the Commission may request the applicant to submit information with respect to his financial qualifications.

(9) As provided by § 70.25, certain applications for specific licenses filed under this part must contain a proposed decommissioning funding plan or a certification of financial assurance for decommissioning. In the case of renewal applications submitted on or before July 27, 1990, this submittal may follow the renewal application but must be submitted on or before July 27, 1990.

(b) Each application for a license to possess special nuclear material, to possess equipment capable of enriching uranium, to operate an uranium enrichment facility, to possess and use at any one time and location special nuclear material in a quantity exceeding one effective kilogram, except for applications for use as sealed sources and for those uses involved in the operation of a nuclear reactor licensed pursuant to part 50 of this chapter and those involved in a waste disposal operation, must contain a full description of the applicant's program for control and accounting of such special nuclear material or enrichment equipment that will be in the applicant's possession under license to show how compliance with the requirements of §§ 74.31, 74.33, 74.41, or 74.51 of this chapter, as applicable, will be accomplished.

(c) [Reserved]

(d) The Commission may at any time after the filing of the original application, and before the expiration of the license, require further statements in order to enable the Commission to determine whether the application should be granted or denied or whether a license should be modified or revoked. All applications and statements shall be signed by the applicant or licensee or a corporate officer thereof.

(e) Each application and statement shall contain complete and accurate disclosure as to all matters and things required to be disclosed.

(f) Each application for a license to possess and use special nuclear material in a plutonium processing and fuel fabrication plant shall contain, in addition to the other information required by this section, a description of the plantsite, a description and safety assessment of the design bases of the principal structure, systems, and components of the plant, including provisions for protection against natural phenomena, and a description of the quality assurance program to be applied to the design, fabrication, construction, testing and operation of the structures, systems, and components of the plant.[2]

(g)(1) Each application for a license that would authorize the transport or delivery to a carrier for transport of special nuclear material in an amount specified in § 73.1(b)(2) of this chapter must include (i) a description of the plan for physical protection of special nuclear material in transit in accordance with §§ 73.20, 73.25, 73.26, 73.27, and 73.67 (a), (e), and (g) for 10 kg or more of special nuclear material of low strategic significance, and § 73.70(g) of this chapter including, as appropriate, a plan for the selection, qualification, and training of armed escorts, or the specification and design of a specially designed truck or trailer, and (ii) a licensee safeguards contingency plan or response procedures, as appropriate, for dealing with threats, thefts, and radiological sabotage relating to the special nuclear material in transit.

(2) Each application for such a license involving formula quantities of strategic special nuclear material must include the first four categories of information contained in the applicant's safeguards contingency plan. (The first four categories of information, as set forth in appendix C to part 73 of this chapter, are Background, Generic Planning Base, Licensee Planning Base, and Responsibility Matrix. The fifth category of information, Procedures, does not have to be submitted for approval.)

(3) The licensee shall retain this description of the plan for physical protection of special nuclear material in transit and the safeguards contingency plan or safeguards response procedures and each change to the plan or procedures as a record for a period of three years following the date on which the licensee last possessed the appropriate type and quantity of special nuclear material requiring this record under each license.

(h)(1) Each application for a license to possess or use, at any site or contiguous sites subject to licensee control, a formula quantity of strategic special nuclear material, as defined in § 70.4, other than a license for possession or use of this material in the operation of a nuclear reactor licensed pursuant to part 50 of this chapter, must include a

[2] The description of the quality assurance program should include a discussion of how the criteria in appendix B of part 50 of this chapter will be met.

physical security plan. The plan must describe how the applicant will meet the applicable requirements of part 73 of this chapter in the conduct of the activity to be licensed, including the identification and description of jobs as required by 10 CFR 11.11(a). The plan must list tests, inspections, audits, and other means to be used to demonstrate compliance with the requirements of 10 CFR parts 11 and 73, if applicable.

(2) The licensee shall retain a copy of this physical security plan and each change to the plan as a record for a period of three years following the date on which the licensee last possessed the appropriate type and quantity of special nuclear material requiring this record under each license.

(i)(1) Each application to possess enriched uranium or plutonium for which a criticality accident alarm system is required, uranium hexafluoride in excess of 50 kilograms in a single container or 1000 kilograms total, or in excess of 2 curies of plutonium in unsealed form or on foils or plated sources, must contain either:

(i) An evaluation showing that the maximum dose to a member of the public offsite due to a release of radioactive materials would not exceed 1 rem effective dose equivalent or an intake of 2 milligrams of soluble uranium, or

(ii) An emergency plan for responding to the radiological hazards of an accidental release of special nuclear material and to any associated chemical hazards directly incident thereto.

(2) One or more of the following factors may be used to support an evaluation submitted under paragraph (i)(1)(i) of this section:

(i) The radioactive material is physically separated so that only a portion could be involved in an accident;

(ii) All or part of the radioactive material is not subject to release during an accident or to criticality because of the way it is stored or packaged;

(iii) In the case of fires or explosions, the release fraction would be lower than 0.001 due to the chemical or physical form of the material;

(iv) The solubility of the material released would reduce the dose received;

(v) The facility design or engineered safety features in the facility would cause the release fraction to be lower than 0.001;

(vi) Operating restrictions or procedures would prevent a release large enough to cause a member of the public offsite to receive a dose exceeding 1 rem effective dose equivalent; or

(vii) Other factors appropriate for the specific facility.

(3) Emergency plans submitted under paragraph (i)(1)(ii) of this section must include the following information:

(i) *Facility description*. A brief description of the licensee's facility and area near the site.

(ii) *Types of accidents*. An identification of each type of radioactive materials accident for which protective actions may be needed.

(iii) *Classification of accidents*. A classification system for classifying accidents as alerts or site area emergencies.

(iv) *Detection of accidents*. Identification of the means of detecting each type of accident in a timely manner.

(v) *Mitigation of consequences*. A brief description of the means and equipment for mitigating the consequences of each type of accident, including those provided to protect workers onsite, and a description of the program for maintaining the equipment.

(vi) *Assessment of releases*. A brief description of the methods and equipment to assess releases of radioactive materials.

(vii) *Responsibilities*. A brief description of the responsibilities of licensee personnel should an accident occur, including identification of personnel responsible for promptly notifying offsite response organizations and the NRC; also responsibilities for developing, maintaining, and updating the plan.

(viii) *Notification and coordination*. A commitment to and a brief description of the means to promptly notify offsite response organizations and request offsite assistance, including medical assistance for the treatment of contaminated injured onsite workers when appropriate. A control point must be established. The notification and coordination must be planned so that unavailability of some personnel, parts of the facility, and some equipment will not prevent the notification and coordination. The licensee shall also

commit to notify the NRC operations center immediately after notification of the appropriate offsite response organizations and not later than one hour after the licensee declares an emergency.[1]

(ix) Information to be communicated. A brief description of the types of information on facility status, radioactive releases, and recommended protective actions, if necessary, to be given to offsite response organizations and to the NRC.

(x) Training. A brief description of the frequency, performance objectives and plans for the training that the licensee will provide workers on how to respond to an emergency including any special instructions and orientation tours the licensee would offer to fire, police, medical and other emergency personnel. The training shall familiarize personnel with site-specific emergency procedures. Also, the training shall thoroughly prepare site personnel for their responsibilities in the event of accident scenarios postulated as most probable for the specific site, including the use of team training for such scenarios.

(xi) Safe shutdown. A brief description of the means of restoring the facility to a safe condition after an accident.

(xii) Exercises. Provisions for conducting quarterly communications checks with offsite response organizations and biennial onsite exercises to test response to simulated emergencies. Quarterly communications checks with offsite response organizations must include the check and update of all necessary telephone numbers. The licensee shall invite offsite response organizations to participate in the biennial exercises. Participation of offsite response organizations in biennial exercises although recommended is not required. Exercises must use accident scenarios postulated as most probable for the specific site and the scenarios shall not be known to most exercise participants. The licensee shall critique each exercise using individuals not having direct implementation responsibility for the plan. Critiques of exercises must evaluate the appropriateness of the plan, emergency procedures, facilities, equipment, training of personnel, and overall effectiveness of the response. Deficiencies found by the critiques must be corrected.

(xiii) Hazardous chemicals. A certification that the applicant has met its responsibilities under the Emergency Planning and Community Right-to-Know Act of 1986, Title III, Pub. L. 99–499, if applicable to the applicant's activities at the proposed place of use of the special nuclear material.

(4) The licensee shall allow the offsite response organizations expected to respond in case of an accident 60 days to comment on the licensee's emergency plan before submitting it to NRC. The licensee shall provide any comments received within the 60 days to the NRC with the emergency plan.

(j)(1) Each application for a license to possess or use at any site or contiguous sites subject to control by the licensee uranium-235 (contained in uranium enriched to 20 percent or more in the uranium-235 isotope), uranium-233, or plutonium alone or in any combination in a quantity of 5,000 grams or more computed by the formula, grams = (grams contained U–235) + 2.5 (grams U–233 + grams plutonium) other than a license for possession or use of this material in the operation of a nuclear reactor licensed pursuant to part 50 of this chapter, must include a licensee safeguards contingency plan for dealing with threats, thefts, and radiological sabotage, as defined in part 73 of this chapter, relating to nuclear facilities licensed under part 50 of this chapter or to the possession of special nuclear material licensed under this part.

(2) Each application for such a license must include the first four categories of information contained in the applicant's safeguards contingency plan. (The first four categories of information, as set forth in appendix C to

[1] These reporting requirements do not superceed or release licensees of complying with the requirements under the Emergency Planning and Community Right-to-Know Act of 1986, Title III, Pub. L. 99–499 or other state or federal reporting requirements.

part 73 of this chapter, are Background, Generic Planning Base, Licensee Planning Base, and Responsibility Matrix.) The fifth category of information, Procedures, does not have to be submitted for approval.

(3) The licensee shall retain a copy of this safeguards contingency plan as a record until the Commission terminates each license obtained by this application or any application for renewal of a license and retain each change to the plan as a record for three years after the date of the change.

(k) Each application for a license to possess or use at any site or contiguous sites subject to licensee control, special nuclear material of moderate strategic significance or 10 kg or more of special nuclear material of low strategic significance as defined under § 70.4, other than a license for possession or use of this material in the operation of a nuclear power reactor licensed pursuant to part 50 of this chapter, must include a physical security plan that demonstrates how the applicant plans to meet the requirements of paragraphs (d), (e), (f), and (g) of § 73.67 of this chapter, as appropriate. The licensee shall retain a copy of this physical security plan as a record for the period during which the licensee possesses the appropriate type and quantity of special nuclear material under each license, and if any portion of the plan is superseded, retain that superseded portion of the plan for 3 years after the effective date of the change.

(l) Each applicant for a license shall protect Safeguards Information against unauthorized disclosure in accordance with the requirements in § 73.21 and the requirements of § 73.22, or 73.23 of this chapter, as applicable, and shall protect classified information in accordance with the requirements of parts 25 and 95 of this chapter, as applicable.

(m) Each application for a license to possess equipment capable of enriching uranium or operate an enrichment facility, and produce, possess, or use more than one effective kilogram of special nuclear material at any site or contiguous sites subject to control by the applicant, must contain a full description of the applicant's security program to protect against theft, and to protect against unauthorized viewing of classified enrichment equipment, and unauthorized disclosure of classified matter in accordance with the requirements of 10 CFR parts 25 and 95.

(n) A license application that involves the use of special nuclear material in a uranium enrichment facility must include the applicant's provisions for liability insurance.

[21 FR 764, Feb. 3, 1956]

EDITORIAL NOTE: For FEDERAL REGISTER citations affecting § 70.22, see the List of CFR Sections Affected, which appears in the Finding Aids section of the printed volume and at *www.govinfo.gov*.

§ 70.23 Requirements for the approval of applications.

(a) An application for a license will be approved if the Commission determines that:

(1) The special nuclear material is to be used for the conduct of research or development activities of a type specified in section 31 of the Act,[1] in activities licensed by the Commission under section 103 or 104 of the Act, or for such other uses as the Commission determines to be appropriate to carry out the purposes of the Act;

(2) The applicant is qualified by reason of training and experience to use the material for the purpose requested in accordance with the regulations in this chapter;

(3) The applicant's proposed equipment and facilities are adequate to

[1] The types of research and development activities specified in section 31 are those relating to:

(1) Nuclear processes;

(2) The theory and production of atomic energy, including processes, materials, and devices related to such production;

(3) Utilization of special nuclear material and radioactive material for medical, biological, agricultural, health or military purposes;

(4) Utilization of special nuclear material, atomic energy, and radioactive material and processes entailed in the utilization or production of atomic energy or such material for all other purposes, including industrial use, the generation of usable energy, and the demonstration of the practical value of utilization or production facilities for industrial or commercial purposes; and

(5) The protection of health and the promotion of safety during research and production activities.

protect health and minimize danger to life or property;

(4) The applicant's proposed procedures to protect health and to minimize danger to life or property are adequate;

(5) Where the nature of the proposed activities is such as to require consideration by the Commission, that the applicant appears to be financially qualified to engage in the proposed activities in accordance with the regulations in this part;

(6) Where the applicant is required to submit a summary description of the fundamental material controls provided in his procedures for the control of and accounting for special nuclear material pursuant to § 70.22 (b), the applicant's proposed controls are adequate;

(7) Where the proposed activity is processing and fuel fabrication, scrap recovery, conversion of uranium hexafluoride, uranium enrichment facility construction and operation, or any other activity which the NRC determines will significantly affect the quality of the environment, the Director of Nuclear Material Safety and Safeguards or his/her designee, before commencement of construction of the plant or facility in which the activity will be conducted, on the basis of information filed and evaluations made pursuant to subpart A of part 51 of this chapter, has concluded, after weighing the environmental, economic, technical, and other benefits against environmental costs and considering available alternatives, that the action called for is the issuance of the proposed license, with any appropriate conditions to protect environmental values. Commencement of construction prior to this conclusion is grounds for denial to possess and use special nuclear material in the plant or facility. Commencement of construction as defined in section 70.4 may include nonconstruction activities if the activity has a reasonable nexus to radiological safety and security.

(8) Where the proposed activity is the operation of a plutonium processing and fuel fabrication plant, construction of the principal structures, systems, and components approved pursuant to paragraph (b) of this section has been completed in accordance with the application;

(9) Where the applicant is required to submit a plan for physical protection of special nuclear material in transit pursuant to § 70.22(g), of this chapter, the applicant's plan is adequate;

(10) Where the applicant is required to submit a physical security plan pursuant to § 70.22(h), the applicant's proposed plan is adequate;

(11) Where the proposed activity is processing and fuel fabrication, scrap recovery, conversion of uranium hexafluoride, or involves the use of special nuclear material in a uranium enrichment facility, the applicant's proposed emergency plan is adequate.

(12) Where the proposed activity is use of special nuclear material in a uranium enrichment facility, the applicable provisions of part 140 of this chapter have been satisfied.

(b) The Commission will approve construction of the principal structures, systems, and components of a plutonium processing and fuel fabrication plant on the basis of information filed pursuant to § 70.22(f) when the Commission has determined that the design bases of the principal structures, systems, and components, and the quality assurance program provide reasonable assurance of protection against natural phenomena and the consequences of potential accidents.[3] Failure to obtain Commission approval prior to beginning of such construction may be grounds for denial of a license to possess and use special nuclear material in a plutonium processing and fuel fabrication plant.

[36 FR 17574, Sept. 2, 1971, as amended at 37 FR 5749, Mar. 21, 1972; 38 FR 30534, 30538, Nov. 6, 1973; 39 FR 26286, July 18, 1974; 42 FR 17126, Mar. 31, 1977; 43 FR 6924, Feb. 17, 1978; 49 FR 9406, Mar. 12, 1984; 54 FR 14064, Apr. 7, 1989; 57 FR 18392, Apr. 30, 1992; 67 FR 78142, Dec. 23, 2002; 76 FR 56966, Sept. 15, 2011]

§ 70.23a Hearing required for uranium enrichment facility.

The Commission will hold a hearing under 10 CFR part 2, subparts A, C, G, and I, on each application for issuance

[3] The criteria in appendix B of part 50 of this chapter will be used by the Commission in determining the adequacy of the quality assurance program.

of a license for construction and operation of a uranium enrichment facility. The Commission will publish public notice of the hearing in the FEDERAL REGISTER at least thirty (30) days before the hearing.

[69 FR 2280, Jan. 14, 2004]

§ 70.24 Criticality accident requirements.

(a) Each licensee authorized to possess special nuclear material in a quantity exceeding 700 grams of contained uranium–235, 520 grams of uranium–233, 450 grams of plutonium, 1,500 grams of contained uranium–235 if no uranium enriched to more than 4 percent by weight of uranium–235 is present, 450 grams of any combination thereof, or one-half such quantities if massive moderators or reflectors made of graphite, heavy water or beryllium may be present, shall maintain in each area in which such licensed special nuclear material is handled, used, or stored, a monitoring system meeting the requirements of either paragraph (a)(1) or (a)(2), as appropriate, and using gamma- or neutron-sensitive radiation detectors which will energize clearly audible alarm signals if accidental criticality occurs. This section is not intended to require underwater monitoring when special nuclear material is handled or stored beneath water shielding or to require monitoring systems when special nuclear material is being transported when packaged in accordance with the requirements of part 71 of this chapter.

(1) The monitoring system shall be capable of detecting a criticality that produces an absorbed dose in soft tissue of 20 rads of combined neutron and gamma radiation at an unshielded distance of 2 meters from the reacting material within one minute. Coverage of all areas shall be provided by two detectors.

(2) Persons licensed prior to December 6, 1974, to possess special nuclear material subject to this section may maintain a monitoring system capable of detecting a criticality which generates radiation levels of 300 rems per hour one foot from the source of the radiation. The monitoring devices in the system shall have a preset alarm point of not less than 5 millirems per hour (in order to avoid false alarms) nor more than 20 millirems per hour. In no event may any such device be farther than 120 feet from the special nuclear material being handled, used, or stored; lesser distances may be necessary to meet the requirements of this paragraph (a)(2) on account of intervening shielding or other pertinent factors.

(3) The licensee shall maintain emergency procedures for each area in which this licensed special nuclear material is handled, used, or stored to ensure that all personnel withdraw to an area of safety upon the sounding of the alarm. These procedures must include the conduct of drills to familiarize personnel with the evacuation plan, and designation of responsible individuals for determining the cause of the alarm, and placement of radiation survey instruments in accessible locations for use in such an emergency. The licensee shall retain a copy of current procedures for each area as a record for as long as licensed special nuclear material is handled, used, or stored in the area. The licensee shall retain any superseded portion of the procedures for three years after the portion is superseded.

(b) Each licensee authorized to possess special nuclear material in quantities in excess of those specified in paragraph (a) shall:

(1) Provide the means for identifying quickly which individuals have received doses of 10 rads or more.

(2) Maintain facilities and supplies at the site for decontamination of personnel, arrangements for the services of a physician and other medical personnel qualified to handle radiation emergencies, arrangements for transportation of injured or contaminated individuals to treatment facilities, and arrangements for treatment of individuals at treatment facilities outside the site boundary.

(c) Holders of licenses for construction or operation of a nuclear reactor issued pursuant to part 50 of this chapter, except critical assembly reactors, are exempt for the requirements of paragraph (b) of this section with respect to special nuclear material used or to be used in the reactor.

(d)(1) The requirements in paragraphs (a) through (c) of this section do not

apply to a holder of a construction permit or operating license for a nuclear power reactor issued under part 50 of this chapter or a combined license issued under part 52 of this chapter, if the holder complies with the requirements of paragraph (b) of 10 CFR 50.68.

(2) An exemption from § 70.24 held by a licensee who thereafter elects to comply with requirements of paragraph (b) of 10 CFR 50.68 does not exempt that licensee from complying with any of the requirements in § 50.68, but shall be ineffective so long as the licensee elects to comply with § 50.68.

[39 FR 39021, Nov. 5, 1974, as amended at 41 FR 31522, July 29, 1976; 53 FR 19252, May 27, 1988; 62 FR 63828, Dec. 3, 1997; 63 FR 9403, Feb. 25, 1998; 63 FR 63130, Nov. 12, 1998]

§ 70.25 Financial assurance and recordkeeping for decommissioning.

(a) Each applicant for a specific license of the types described in paragraphs (a) (1) and (2) of this section shall submit a decommissioning funding plan as described in paragraph (e) of this section.

(1) A specific license for a uranium enrichment facility;

(2) A specific license authorizing the possession and use of unsealed special nuclear material in quantities exceeding 10^5 times the applicable quantities set forth in appendix B to part 30. A decommissioning funding plan must also be submitted when a combination of isotopes is involved if R divided by 10^5 is greater than 1 (unity rule), where R is the sum of the ratios of the quantity of each isotope to the applicable value in appendix B to part 30.

(b) Each applicant for a specific license authorizing possession and use of unsealed special nuclear material in quantities specified in paragraph (d) of this section shall either—

(1) Submit a decommissioning funding plan as described in paragraph (e) of this section; or

(2) Submit a certification that financial assurance for decommissioning has been provided in the amount prescribed by paragraph (d) of this section using one of the methods described in paragraph (f) of this section. For an applicant, this certification may state that the appropriate assurance will be obtained after the application has been approved and the license issued but before the receipt of licensed material. If the applicant defers execution of the financial instrument until after the license has been issued, a signed original of the financial instrument obtained to satisfy the requirements of paragraph (f) of this section must be submitted to NRC before receipt of licensed material. If the applicant does not defer execution of the financial instrument, the applicant shall submit to NRC, as part of the certification, a signed original of the financial instrument obtained to satisfy the requirements of paragraph (f) of this section.

(c)(1) Each holder of a specific license issued on or after July 27, 1990, which is of a type described in paragraph (a) or (b) of this section, shall provide financial assurance for decommissioning in accordance with the criteria set forth in this section.

(2) Each holder of a specific license issued before July 27, 1990, and of a type described in paragraph (a) of this section shall submit a decommissioning funding plan as described in paragraph (e) of this section or a certification of financial assurance for decommissioning in an amount at least equal to $1,125,000 in accordance with the criteria set forth in this section. If the licensee submits the certification of financial assurance rather than a decommissioning funding plan, the licensee shall include a decommissioning funding plan in any application for license renewal.

(3) Each holder of a specific license issued before July 27, 1990, and of a type described in paragraph (b) of this section shall submit, on or before July 27, 1990, a decommissioning funding plan, described in paragraph (e) of this section, or a certification of financial assurance for decommissioning in accordance with the criteria set forth in this section.

(4) Any licensee who has submitted an application before July 27, 1990, for renewal of license in accordance with § 70.33 shall provide financial assurance for decommissioning in accordance with paragraphs (a) and (b) of this section. This assurance must be submitted when this rule becomes effective November 24, 1995.

(5) If, in surveys made under 10 CFR 20.1501(a), residual radioactivity in the facility and environment, including the subsurface, is detected at levels that would, if left uncorrected, prevent the site from meeting the 10 CFR 20.1402 criteria for unrestricted use, the licensee must submit a decommissioning funding plan within one year of when the survey is completed.

(d) Table of required amounts of financial assurance for decommissioning by quantity of material. Licensees required to submit the $1,125,000 amount must do so by December 2, 2004. Licensees required to submit the $225,000 amount must do so by June 2, 2005. Licensees having possession limits exceeding the upper bounds of this table must base financial assurance on a decommissioning funding plan.

Greater than 10^4 but less than or equal to 10^5 times the applicable quantities of appendix B to part 30. (For a combination of isotopes, if R, as defined in § 70.25(a), divided by 10^4 is greater than 1 but R divided by 10^5 is less than or equal to 1.)	$1,125,000
Greater than 10^3 but less than or equal to 10^4 times the applicable quantities of appendix B to part 30. (For a combination of isotopes, if R, as defined in § 70.25(a), divided by 10^3 is greater than 1 but R divided by 10^4 is less than or equal to 1.)	$225,000

(e)(1) Each decommissioning funding plan must be submitted for review and approval and must contain—

(i) A detailed cost estimate for decommissioning, in an amount reflecting:

(A) The cost of an independent contractor to perform all decommissioning activities;

(B) The cost of meeting the 10 CFR 20.1402 criteria for unrestricted use, provided that, if the applicant or licensee can demonstrate its ability to meet the provisions of 10 CFR 20.1403, the cost estimate may be based on meeting the 10 CFR 20.1403 criteria;

(C) The volume of onsite subsurface material containing residual radioactivity that will require remediation; and

(D) An adequate contingency factor.

(ii) Identification of and justification for using the key assumptions contained in the DCE;

(iii) A description of the method of assuring funds for decommissioning from paragraph (f) of this section, including means for adjusting cost estimates and associated funding levels periodically over the life of the facility;

(iv) A certification by the licensee that financial assurance for decommissioning has been provided in the amount of the cost estimate for decommissioning; and

(v) A signed original, or, if permitted, a copy, of the financial instrument obtained to satisfy the requirements of paragraph (f) of this section (unless a previously submitted and accepted financial instrument continues to cover the cost estimate for decommissioning).

(2) At the time of license renewal and at intervals not to exceed 3 years, the decommissioning funding plan must be resubmitted with adjustments as necessary to account for changes in costs and the extent of contamination. If the amount of financial assurance will be adjusted downward, this can not be done until the updated decommissioning funding plan is approved. The decommissioning funding plan must update the information submitted with the original or prior approved plan, and must specifically consider the effect of the following events on decommissioning costs:

(i) Spills of radioactive material producing additional residual radioactivity in onsite subsurface material;

(ii) Waste inventory increasing above the amount previously estimated;

(iii) Waste disposal costs increasing above the amount previously estimated;

(iv) Facility modifications;

(v) Changes in authorized possession limits;

(vi) Actual remediation costs that exceed the previous cost estimate;

(vii) Onsite disposal; and

(viii) Use of a settling pond.

(f) The financial instrument must include the licensee's name, license number, and docket number; and the name,

address, and other contact information of the issuer, and, if a trust is used, the trustee. When any of the foregoing information changes, the licensee must, within 30 days, submit financial instruments reflecting such changes. Financial assurance for decommissioning must be provided by one or more of the following methods:

(1) *Prepayment*. Prepayment is the deposit before the start of operation into an account segregated from licensee assets and outside the licensee's administrative control of cash or liquid assets such that the amount of funds would be sufficient to pay decommissioning costs. Prepayment must be made into a trust account, and the trustee and the trust must be acceptable to the Commission.

(2) *A surety method, insurance, or other guarantee method*. These methods guarantee that decommissioning costs will be paid. A surety method may be in the form of a surety bond, or letter of credit. A parent company guarantee of funds for decommissioning costs based on a financial test may be used if the guarantee and test are as contained in appendix A to part 30 of this chapter. For commercial corporations that issue bonds, a guarantee of funds by the applicant or licensee for decommissioning costs based on a financial test may be used if the guarantee and test are as contained in appendix C to part 30 of this chapter. For commercial companies that do not issue bonds, a guarantee of funds by the applicant or licensee for decommissioning costs may be used if the guarantee and test are as contained in appendix D to part 30 of this chapter. For nonprofit entities, such as colleges, universities, and nonprofit hospitals, a guarantee of funds by the applicant or licensee may be used if the guarantee and test are as contained in appendix E to part 30 of this chapter. Except for an external sinking fund, a parent company guarantee or a guarantee by the applicant or licensee may not be used in combination with any other financial methods used to satisfy the requirements of this section. A guarantee by the applicant or licensee may not be used in any situation where the applicant or licensee has a parent company holding majority control of the voting stock of the company. Any surety method or insurance used to provide financial assurance for decommissioning must contain the following conditions:

(i) The surety method or insurance must be open-ended or, if written for a specified term, such as five years, must be renewed automatically unless 90 days or more prior to the renewal date, the issurer notifies the Commission, the beneficiary, and the licensee of its intention not to renew. The surety method or insurance must also provide that the full face amount be paid to the beneficiary automatically prior to the expiration without proof of forfeiture if the licensee fails to provide a replacement acceptable to the Commission within 30 days after receipt of notification of cancellation.

(ii) The surety method or insurance must be payable to a trust established for decommissioning costs. The trustee and trust must be acceptable to the Commission. An acceptable trustee includes an appropriate State or Federal government agency or an entity which has the authority to act as a trustee and whose trust operations are regulated and examined by a Federal or State agency.

(iii) The surety method or insurance must remain in effect until the Commission has terminated the license.

(3) *An external sinking fund in which deposits are made at least annually, coupled with a surety method, insurance, or other guarantee method, the value of which may decrease by the amount being accumulated in the sinking fund*. An external sinking fund is a fund established and maintained by setting aside funds periodically in an account segregated from licensee assets and outside the licensee's administrative control in which the total amount of funds would be sufficient to pay decommissioning costs at the time termination of operation is expected. An external sinking fund must be in the form of a trust. If the other guarantee method is used, no surety or insurance may be combined with the external sinking fund. The surety, insurance, or other guarantee provisions must be as stated in paragraph (f)(2) of this section.

(4) In the case of Federal, State, or local government licensees, a statement of intent containing a cost estimate for decommissioning or an amount based on the Table in paragraph (d) of this section, and indicating that funds for decommissioning will be obtained when necessary.

(5) When a governmental entity is assuming custody and ownership of a site, an arrangement that is deemed acceptable by such governmental entity.

(g) Each person licensed under this part shall keep records of information important to the decommissioning of a facility in an identified location until the site is released for unrestricted use. If records important to the decommissioning of a facility are kept for other purposes, reference to these records and their locations may be used. Information the Commission considers important to decommissioning consists of—

(1) Records of spills or other unusual occurrences involving the spread of contamination in and around the facility, equipment, or site. These records may be limited to instances when contamination remains after any cleanup procedures or when there is reasonable likelihood that contaminants may have spread to inaccessible areas as in the case of possible seepage into porous materials such as concrete. These records must include any known information on identification of involved nuclides, quantities, forms, and concentrations.

(2) As-built drawings and modifications of structures and equipment in restricted areas where radioactive materials are used and/or stored and of locations of possible inaccessible contamination such as buried pipes which may be subject to contamination. If required drawings are referenced, each relevant document need not be indexed individually. If drawings are not available, the licensee shall substitute appropriate records of available information concerning these areas and locations.

(3) Except for areas containing only sealed sources (provided the sources have not leaked or no contamination remains after cleanup of any leak), a list contained in a single document and updated every 2 years, of the following:

(i) All areas designated and formerly designated as restricted areas as defined under 10 CFR 20.1003 (For requirements prior to January 1, 1994, see 10 CFR 20.3 as contained in the CFR edition revised as of January 1, 1993.);

(ii) All areas outside of restricted areas that require documentation under § 70.25(g)(1);

(iii) All areas outside of restricted areas where current and previous wastes have been buried as documented under 10 CFR 20.2108; and

(iv) All areas outside of restricted areas that contain material such that, if the license expired, the licensee would be required to either decontaminate the area to meet the criteria for decommissioning in 10 CFR part 20, subpart E, or apply for approval for disposal under 10 CFR 20.2002.

(4) Records of the cost estimate performed for the decommissioning funding plan or of the amount certified for decommissioning, and records of the funding method used for assuring funds if either a funding plan or certification is used.

(h) In providing financial assurance under this section, each licensee must use the financial assurance funds only for decommissioning activities and each licensee must monitor the balance of funds held to account for market variations. The licensee must replenish the funds, and report such actions to the NRC, as follows:

(1) If, at the end of a calendar quarter, the fund balance is below the amount necessary to cover the cost of decommissioning, but is not below 75 percent of the cost, the licensee must increase the balance to cover the cost, and must do so within 30 days after the end of the calendar quarter.

(2) If, at any time, the fund balance falls below 75 percent of the amount necessary to cover the cost of decommissioning, the licensee must increase the balance to cover the cost, and must do so within 30 days of the occurrence.

(3) Within 30 days of taking the actions required by paragraph (h)(1) or (h)(2) of this section, the licensee must provide a written report of such actions to the Director, Office of Nuclear

Material Safety and Safeguards, and state the new balance of the fund.

[53 FR 24053, June 27, 1988, as amended at 56 FR 23474, May 21, 1991; 57 FR 18393, Apr. 30, 1992; 58 FR 39634, July 26, 1993; 58 FR 67662, Dec. 22, 1993; 58 FR 68731, Dec. 29, 1993; 59 FR 1618, Jan. 12, 1994; 60 FR 38239, July 26, 1995; 61 FR 24675, May 16, 1996; 62 FR 39091, July 21, 1997; 63 FR 29544, June 1, 1998; 68 FR 57337, Oct. 3, 2003; 76 FR 35572, June 17, 2011; 78 FR 34250, June 7, 2013; 78 FR 75450, Dec. 12, 2013; 79 FR 75740, Dec. 19, 2014]

Subpart E—Licenses

§ 70.31 Issuance of licenses.

(a) Upon a determination that an application meets the requirements of the act and of the regulations of the Commission, the Commission will issue a license in such form and containing such conditions and limitations as it deems appropriate or necessary to effectuate the purposes of the act.

(b) [Reserved]

(c) Each license issued to a person for use of special nuclear material in activities in which special nuclear material will be produced shall (subject to the provisions of § 70.41(b)) be deemed to authorize such person to receive title to, own, acquire, receive, possess, use, and transfer the special nuclear material produced in the course of such authorized activities.

(d) No license will be issued by the Commission to any person within the United States if the Commission finds that the issuance of such license would be inimical to the common defense and security or would constitute an unreasonable risk to the health and safety of the public.

(e) No license to construct and operate a uranium enrichment facility may be issued until a hearing pursuant to 10 CFR part 2, subparts G and I, is completed and decision issued on the application.

[21 FR 764, Feb. 3, 1956, as amended at 32 FR 2563, Feb. 7, 1967; 32 FR 4056, Mar. 15, 1967; 43 FR 6925, Feb. 17, 1978; 57 FR 18393, Apr. 30, 1992]

§ 70.32 Conditions of licenses.

(a) Each license shall contain and be subject to the following conditions:

(1) [Reserved]

(2) No right to the special nuclear material shall be conferred by the license except as defined by the license;

(3) Neither the license nor any right under the license shall be assigned or otherwise transferred in violation of the provisions of the Act;

(4) All special nuclear material shall be subject to the right of recapture or control reserved by section 108 and to all other provisions of the Act;

(5) No special nuclear material may be used in any utilization or production facility except in accordance with the provisions of the Act;

(6) The licensee shall not use the special nuclear material to construct an atomic weapon or any component of an atomic weapon;

(7) Except to the extent that the indemnification and limitation of liability provisions of part 140 of this chapter apply, the licensee will hold the United States and the Department harmless from any damages resulting from the use or possession of special nuclear material leased from the Department by the licensee;

(8) The license shall be subject to and the licensee shall observe, all applicable rules, regulations and orders of the Commission.

(9)(i) Each licensee shall notify the appropriate NRC Regional Administrator, in writing, immediately following the filing of a voluntary or involuntary petition for bankruptcy under any Chapter of Title 11 (Bankruptcy) of the United States Code by or against:

(A) The licensee;

(B) An entity (as that term is defined in 11 U.S.C. 101(15)) controlling the licensee or listing the license or licensee as property of the estate; or

(C) An affiliate (as that term is defined in 11 U.S.C. 101(2)) of the licensee.

(ii) This notification must indicate:

(A) The bankruptcy court in which the petition for bankruptcy was filed; and

(B) The date of the filing of the petition.

(b) The Commission may incorporate in any license such additional conditions and requirements with respect to

the licensee's ownership, receipt, possession, use, and transfer of special nuclear material as it deems appropriate or necessary in order to:

(1) Promote the common defense and security;

(2) Protect health or to minimize danger to life or property;

(3) Protect restricted data;

(4) Guard against the loss or diversion of special nuclear material;

(5) Require such reports and the keeping of such records, and to provide for such inspections, of activities under the license as may be necessary or appropriate to effectuate the purposes of the act and regulations thereunder.

(c)(1) Each license authorizing the possession and use at any one time and location of uranium source material at an uranium enrichment facility or special nuclear material in a quantity exceeding one effective kilogram, except for use as sealed sources and those uses involved in the operation of a nuclear reactor licensed pursuant to part 50 of this chapter and those involved in a waste disposal operation, shall contain and be subject to a condition requiring the licensee to maintain and follow:

(i) The program for control and accounting of uranium source material at an uranium enrichment facility and special nuclear material at all applicable facilities as implemented pursuant to §70.22(b), or §§74.31(b), 74.33(b), 74.41(b), or 74.51(c) of this chapter, as appropriate;

(ii) The measurement control program for uranium source material at an uranium enrichment facility and for special nuclear material at all applicable facilities as implemented pursuant to §§74.31(b), 74.33(b), 74.45(c), or 74.59(e) of this chapter, as appropriate; and

(iii) Other material control procedures as the Commission determines to be essential for the safeguarding of uranium source material at an uranium enrichment facility or of special nuclear material and providing that the licensee shall make no change that would decrease the effectiveness of the material control and accounting program implemented pursuant to §70.22(b), or §§74.31(b), 74.33(b), 74.41(b), or 74.51(c) of this chapter, and the measurement control program implemented pursuant to §§74.31(b), 74.33(b), 74.41(b), or 74.59(e) of this chapter without the prior approval of the Commission. A licensee desiring to make changes that would decrease the effectiveness of its material control and accounting program or its measurement control program shall submit an application for amendment to its license pursuant to §70.34.

(2) The licensee shall maintain records of changes to the material control and accounting program made without prior Commission approval for a period of 5 years from the date of the change. Licensees located in all four Regions as indicated in appendix A of part 73 of this chapter shall furnish to the Director, Office of Nuclear Material Safety and Safeguards, using an appropriate method listed in §70.5(a), a report containing a description of each change within:

(i) Two months of the change if it pertains to uranium-233, uranium-235 contained in uranium enriched 20 percent or more in the uranium-235 isotope, or plutonium, except plutonium containing 80 percent or more by weight of the isotope Pu-238, and

(ii) Six months of the change if it pertains to uranium enriched less than 20 percent in the uranium-235 isotope, or plutonium containing 80 percent or more by weight of the isotope Pu-238.

(d) The licensee shall make no change which would decrease the effectiveness of the plan for physical protection of special nuclear material in transit prepared pursuant to §70.22(g) or §73.20(c) of this chapter without the prior approval of the Commission. A licensee desiring to make such changes shall submit an application for a change in the technical specifications incorporated in his or her license, if any, or for an amendment to the license pursuant to §50.90 or §70.34 of this chapter, as appropriate. The licensee may make changes to the plan for physical protection of special nuclear material without prior Commission approval if these changes do not decrease the effectiveness of the plan. The licensee shall retain a copy of the plan as a record for the period during which the licensee possesses a formula quantity of special nuclear material requiring this record under each license and each change to the plan for three

years from the effective date of the change. Within two months after each change, a report containing a description of the change must be furnished to the Director of the NRC's Office of Nuclear Material Safety and Safeguards, using an appropriate method listed in § 70.5(a); and a copy must be sent to the appropriate NRC Regional Office shown in appendix A to part 73 of this chapter.

(e) The licensee shall make no change which would decrease the effectiveness of a security plan prepared pursuant to §§ 70.22(h), 70.22(k), or 73.20(c) without the prior approval of the Commission. A licensee desiring to make such a change shall submit an application for an amendment to its license pursuant to § 70.34. The licensee shall maintain records of changes to the plan made without prior Commission approval, for three years from the effective date of the change, and shall, within two months after the change is made, furnish a report containing a description of each change to the Director, Office of Nuclear Material Safety and Safeguards; the report may be sent using an appropriate method listed in § 70.5(a), and a copy of the report must be sent to the appropriate NRC Regional Office shown in appendix A to part 73 of this chapter.

(f) [Reserved]

(g) The licensee shall prepare and maintain safeguards contingency plan procedures in accordance with appendix C to part 73 of this chapter for bringing about the actions and decisions contained in the Responsibility Matrix of its safeguards contingency plan. The licensee shall retain the current safeguards contingency plan procedures as a record for the entire period during which the licensee possesses the appropriate type and quantity of special nuclear material under each license for which the procedures were developed and, if any portion of the plan is superseded, retain that superseded portion for 3 years after the effective date of the change. The licensee shall not make a change that would decrease the safeguards effectiveness of the first four categories of information (*i.e.*, Background, Generic Planning Base, Licensee Planning Base, and Responsibility Matrix) contained in any licensee safeguards contingency plan prepared pursuant to §§ 70.22(g), 70.22(j), 72.184, 73.20(c), 73.26(e)(1), 73.46(h)(1), or 73.50(g)(1) of this chapter without the prior approval of the NRC. A licensee desiring to make such a change shall submit an application for an amendment to its license pursuant to § 70.34. The licensee may make changes to the licensee safeguards contingency plan without prior NRC approval if the changes do not decrease the safeguards effectiveness of the plan. The licensee shall maintain each change to the plan made without prior approval as a record during the period for which possession of a formula quantity of special nuclear material is authorized under a license and retain the superseded portion for 3 years after the effective date of the change, and shall, within 60 days after the change is made, furnish a report containing a description of each change to the Director of Nuclear Material Safety and Safeguards; the report may be sent using an appropriate method listed in § 70.5(a), and a copy of the report must be sent to the Regional Administrator of the appropriate NRC Regional Office as specified in appendix A to part 73 of this chapter.

(h) [Reserved]

(i) Licensees required to submit emergency plans in accordance with § 70.22(i) shall follow the emergency plan approved by the Commission. The licensee may change the approved plan without Commission approval if the changes do not decrease the effectiveness of the plan. Within six months after each change is made, the licensee shall, using an appropriate method listed in § 70.5(a), furnish the Director, Office of Nuclear Material Safety and Safeguards, a copy of each change, with copies to the appropriate NRC Regional Office specified in appendix D to part 20 of this chapter and to affected offsite response organizations. Proposed changes that decrease the effectiveness of the approved emergency plan may not be implemented without prior application to and prior approval by the Commission.

(j) Each licensee who possesses special nuclear material, or who transports, or delivers to a carrier for transport, a formula quantity of strategic

special nuclear material, special nuclear material of moderate strategic significance, or special nuclear material of low strategic significance, or more than 100 grams of irradiated reactor fuel shall ensure that Safeguards Information is protected against unauthorized disclosure in accordance with the requirements in § 73.21 and the requirements of § 73.22 or § 73.23 of this chapter, as applicable, and shall protect classified information in accordance with the requirements of parts 25 and 95 of this chapter, as applicable.

(k) No person may commence operation of a uranium enrichment facility until the Commission verifies through inspection that the facility has been constructed in accordance with the requirements of the license. The Commission shall publish notice of the inspection results in the FEDERAL REGISTER.

[21 FR 764, Feb. 3, 1956]

EDITORIAL NOTE: For FEDERAL REGISTER citations affecting § 70.32, see the List of CFR Sections Affected, which appears in the Finding Aids section of the printed volume and at *www.govinfo.gov*.

§ 70.33 Applications for renewal of licenses.

Applications for renewal of a license should be filed in accordance with §§ 70.21 and 70.22. Information contained in previous applications, statements or reports filed with the Commission under the license may be incorporated by reference, provided that such references are clear and specific.

[75 FR 73944, Nov. 30, 2010]

§ 70.34 Amendment of licenses.

Applications for amendment of a license shall be filed in accordance with § 70.21(a) and shall specify the respects in which the licensee desires his license to be amended and the grounds for such amendment.

§ 70.35 Commission action on applications to renew or amend.

In considering an application by a licensee to renew or amend his license, the Commission will apply the criteria set forth in § 70.23.

§ 70.36 Inalienability of licenses.

(a) No license granted under the regulations in this part and no right to possess or utilize special nuclear material granted by any license issued pursuant to the regulations in this part shall be transferred, assigned or in any manner disposed of, either voluntarily or involuntarily, directly or indirectly, through transfer of control of any license to any person unless the Commission shall after securing full information, find that the transfer is in accordance with the provisions of the Act, and shall give its consent in writing.

(b) An application for transfer of license must include:

(1) The identity, technical and financial qualifications of the proposed transferee; and

(2) Financial assurance for decommissioning information required by § 70.25.

[21 FR 764, Feb. 3, 1956, as amended at 35 FR 11461, July 17, 1970; 76 FR 35573, June 17, 2011]

§ 70.37 Disclaimer of warranties.

Neither the Government nor the Commission makes any warranty or other representation that special nuclear material (a) will not result in injury or damage when used for purposes approved by the Commission, (b) will accomplish the results for which it is requested and approved by the Commission, or (c) is safe for any other use.

§ 70.38 Expiration and termination of licenses and decommissioning of sites and separate buildings or outdoor areas.

(a) Each specific license expires at the end of the day on the expiration date stated in the license unless the licensee has filed an application for renewal under § 70.33 not less than 30 days before the expiration date stated in the existing license. If an application for renewal has been filed at least 30 days before the expiration date stated in the existing license, the existing license expires at the end of the day on which the Commission makes a final determination to deny the renewal application or, if the determination states an expiration date, the expiration date stated in the determination.

(b) Each specific license revoked by the Commission expires at the end of the day on the date of the Commission's final determination to revoke the license, or on the expiration date stated in the determination, or as otherwise provided by Commission Order.

(c) Each specific license continues in effect, beyond the expiration date if necessary, with respect to possession of special nuclear material until the Commission notifies the licensee in writing that the license is terminated. During this time, the licensee shall—

(1) Limit actions involving special nuclear material to those related to decommissioning; and

(2) Continue to control entry to restricted areas until they are suitable for release in accordance with NRC requirements.

(d) Within 60 days of the occurrence of any of the following, consistent with the administrative directions in § 70.5, each licensee shall provide notification to the NRC in writing and either begin decommissioning its site, or any separate building or outdoor area that contains residual radioactivity, so that the building or outdoor area is suitable for release in accordance with NRC requirements, or submit within 12 months of notification a decommissioning plan, if required by paragraph (g)(1) of this section, and begin decommissioning upon approval of that plan if—

(1) The license has expired pursuant to paragraph (a) or (b) of this section; or

(2) The licensee has decided to permanently cease principal activities, as defined in this part, at the entire site or in any separate building or outdoor area; or

(3) No principal activities under the license have been conducted for a period of 24 months; or

(4) No principal activities have been conducted for a period of 24 months in any separate building or outdoor area that contains residual radioactivity such that the building or outdoor area is unsuitable for release in accordance with NRC requirements.

(e) Coincident with the notification required by paragraph (d) of this section, the licensee shall maintain in effect all decommissioning financial assurances established by the licensee pursuant to § 70.25 in conjunction with a license issuance or renewal or as required by this section. The amount of the financial assurance must be increased, or may be decreased, as appropriate, to cover the detailed cost estimate for decommissioning established pursuant to paragraph (g)(4)(v) of this section.

(1) Any licensee who has not provided financial assurance to cover the detailed cost estimate submitted with the decommissioning plan shall do so when this rule becomes effective November 24, 1995.

(2) Following approval of the decommissioning plan, a licensee may reduce the amount of the financial assurance as decommissioning proceeds and radiological contamination is reduced at the site with the approval of the Commission.

(f) The Commission may grant a request to delay or postpone initiation of the decommissioning process if the Commission determines that this relief is not detrimental to the public health and safety and is otherwise in the public interest. The request must be submitted no later than 30 days before notification pursuant to paragraph (d) of this section. The schedule for decommissioning set forth in paragraph (d) of this section may not commence until the Commission has made a determination on the request.

(g)(1) A decommissioning plan must be submitted if required by license condition or if the procedures and activities necessary to carry out decommissioning of the site or separate building or outdoor area have not been previously approved by the Commission and these procedures could increase potential health and safety impacts to workers or to the public, such as in any of the following cases:

(i) Procedures would involve techniques not applied routinely during cleanup or maintenance operations;

(ii) Workers would be entering areas not normally occupied where surface contamination and radiation levels are significantly higher than routinely encountered during operation;

(iii) Procedures could result in significantly greater airborne concentrations of radioactive materials than are present during operation; or

(iv) Procedures could result in significantly greater releases of radioactive material to the environment than those associated with operation.

(2) The Commission may approve an alternate schedule for submittal of a decommissioning plan required pursuant to paragraph (d) of this section if the Commission determines that the alternative schedule is necessary to the effective conduct of decommissioning operations and presents no undue risk from radiation to the public health and safety and is otherwise in the public interest.

(3) The procedures listed in paragraph (g)(1) of this section may not be carried out prior to approval of the decommissioning plan.

(4) The proposed decommissioning plan for the site or separate building or outdoor area must include:

(i) A description of the conditions of the site or separate building or outdoor area sufficient to evaluate the acceptability of the plan;

(ii) A description of planned decommissioning activities;

(iii) A description of methods used to ensure protection of workers and the environment against radiation hazards during decommissioning;

(iv) A description of the planned final radiation survey; and

(v) An updated detailed cost estimate for decommissioning, comparison of that estimate with present funds set aside for decommissioning, and a plan for assuring the availability of adequate funds for completion of decommissioning.

(vi) A description of the physical security plan and material control and accounting plan provisions in place during decommissioning.

(vii) For decommissioning plans calling for completion of decommissioning later than 24 months after plan approval, a justification for the delay based on the criteria in paragraph (i) of this section.

(5) The proposed decommissioning plan will be approved by the Commission if the information therein demonstrates that the decommissioning will be completed as soon as practical and that the health and safety of workers and the public will be adequately protected.

(h)(1) Except as provided in paragraph (i) of this section, licensees shall complete decommissioning of the site or separate building or outdoor area as soon as practicable but no later than 24 months following the initiation of decommissioning.

(2) Except as provided in paragraph (i) of this section, when decommissioning involves the entire site, the licensee shall request license termination as soon as practicable but no later than 24 months following the initiation of decommissioning.

(i) The Commission may approve a request for an alternate schedule for completion of decommissioning of the site or separate building or outdoor area, and license termination if appropriate, if the Commission determines that the alternative is warranted by consideration of the following:

(1) Whether it is technically feasible to complete decommissioning within the allotted 24-month period;

(2) Whether sufficient waste disposal capacity is available to allow completion of decommissioning within the allotted 24-month period;

(3) Whether a significant volume reduction in wastes requiring disposal will be achieved by allowing short-lived radionuclides to decay;

(4) Whether a significant reduction in radiation exposure to workers can be achieved by allowing short-lived radionuclides to decay; and

(5) Other site-specific factors which the Commission may consider appropriate on a case-by-case basis, such as regulatory requirements of other government agencies, lawsuits, groundwater treatment activities, monitored natural groundwater restoration, actions that could result in more environmental harm than deferred cleanup, and other factors beyond the control of the licensee.

(j) As the final step in decommissioning, the licensee shall—

(1) Certify the disposition of all licensed material, including accumulated wastes, by submitting a completed NRC Form 314 or equivalent information; and

(2) Conduct a radiation survey of the premises where the licensed activities were carried out and submit a report of the results of this survey, unless the licensee demonstrates in some other manner that the premises are suitable for release in accordance with the criteria for decommissioning in 10 CFR part 20, subpart E. The licensee shall, as appropriate—

(i) Report levels of gamma radiation in units of millisieverts (microroentgen) per hour at one meter from surfaces, and report levels of radioactivity, including alpha and beta, in units of megabecquerels (disintegrations per minute or microcuries) per 100 square centimeters removable and fixed for surfaces, megabecquerels (microcuries) per milliliter for water, and becquerels (picocuries) per gram for solids such as soils or concrete; and

(ii) Specify the survey instrument(s) used and certify that each instrument is properly calibrated and tested.

(k) Specific licenses, including expired licenses, will be terminated by written notice to the licensee when the Commission determines that:

(1) Special nuclear material has been properly disposed;

(2) Reasonable effort has been made to eliminate residual radioactive contamination, if present; and

(3)(i) A radiation survey has been performed which demonstrates that the premises are suitable for release in accordance with the criteria for decommissioning in 10 CFR part 20, subpart E; or

(ii) Other information submitted by the licensee is sufficient to demonstrate that the premises are suitable for release in accordance with the criteria for decommissioning in 10 CFR part 20, subpart E.

(4) Records required by § 70.51(a) have been received.

[59 FR 36037, July 15, 1994, as amended at 60 FR 38240, July 26, 1995; 61 FR 1115, Jan. 16, 1996; 61 FR 24675, May 16, 1996; 61 FR 29637, 29638, June 12, 1996; 62 FR 39091, July 21, 1997; 66 FR 24049, May 11, 2001; 73 FR 42675, July 23, 2008; 83 FR 58465, Nov. 20, 2018]

§ 70.39 Specific licenses for the manufacture or initial transfer of calibration or reference sources.

(a) An application for a specific license to manufacture or initially transfer calibration or reference sources containing plutonium, for distribution to persons generally licensed under § 70.19, will be approved if:

(1) The applicant satisfies the general requirements of § 70.23.

(2) The applicant submits sufficient information regarding each type of calibration or reference source pertinent to evaluation of the potential radiation exposure, including:

(i) Chemical and physical form and maximum quantity of plutonium in the source;

(ii) Details of construction and design;

(iii) Details of the method of incorporation and binding of the plutonium in the source;

(iv) Procedures for and results of prototype testing of sources, which are designed to contain more than 0.005 microcurie of plutonium, to demonstrate that the plutonium contained in each source will not be released or be removed from the source under normal conditions of use;

(v) Details of quality control procedures to be followed in manufacture of the source;

(vi) Description of labeling to be affixed to the source or the storage container for the source;

(vii) Any additional information, including experimental studies and tests, required by the Commission to facilitate a determination of the safety of the source.

(3) Each source will contain no more than 5 microcuries of plutonium.

(4) The Commission determines, with respect to any type of source containing more than 0.005 microcurie of plutonium, that:

(i) The method of incorporation and binding of the plutonium in the source is such that the plutonium will not be released or be removed from the source under normal conditions of use and handling of the source; and

(ii) The source has been subjected to and has satisfactorily passed the prototype tests prescribed by paragraph (a)(5) of this section.

(5) For any type of source which is designed to contain more than 0.005 microcurie of plutonium, the applicant has conducted prototype tests, in the order listed, on each of five prototypes of such source, which contains more than 0.005 microcurie of plutonium, as follows:

(i) *Initial measurement*. The quantity of radioactive material deposited on the source shall be measured by direct counting of the source.

(ii) *Dry wipe test*. The entire radioactive surface of the source shall be wiped with filter paper with the application of moderate finger pressure. Removal of radioactive material from the source shall be determined by measuring the radioactivity on the filter paper or by direct measurement of the radioactivity on the source following the dry wipe.

(iii) *Wet wipe test*. The entire radioactive surface of the source shall be wiped with filter paper, moistened with water, with the application of moderate finger pressure. Removal of radioactive material from the source shall be determined by measuring the radioactivity on the filter paper after it has dried or by direct measurement of the radioactivity on the source following the wet wipe.

(iv) *Water soak test*. The source shall be immersed in water at room temperature for a period of 24 consecutive hours. The source shall then be removed from the water. Removal of radioactive material from the source shall be determined by direct measurement of the radioactivity on the source after it has dried or by measuring the radioactivity in the residue obtained by evaporation of the water in which the source was immersed.

(v) *Dry wipe test*. On completion of the preceding tests in paragraphs (a)(5)(i) through (iv) of this section, the dry wipe test described in paragraph (a)(5)(ii) of this section shall be repeated.

(vi) *Observations*. Removal of more than 0.005 microcurie of radioactivity in any test prescribed by this paragraph shall be cause for rejection of the source design. Results of prototype tests submitted to the Commission shall be given in terms of radioactivity in microcuries and percent of removal from the total amount of radioactive material deposited on the source.

(b) Each person licensed under this section shall affix to each source, or storage container for the source, a label which shall contain sufficient information relative to safe use and storage of the source and shall include the following statement or a substantially similar statement which contains the information called for in the following statement.[1]

The receipt, possession, use and transfer of this source, Model _____, Serial No. _____, are subject to a general license and the regulations of the United States Nuclear Regulatory Commission or of a State with which the Commission has entered into an agreement for the exercise of regulatory authority. Do not remove this label.

CAUTION—RADIOACTIVE MATERIAL—THIS SOURCE CONTAINS PLUTONIUM. DO NOT TOUCH RADIOACTIVE PORTION OF THIS SOURCE.

(Name of Manufacturer or Initial Transferor)

(c) Each person licensed under this section shall perform a dry wipe test upon each source containing more than 0.1 microcurie of plutonium prior to transferring the source to a general licensee under § 70.19. This test shall be performed by wiping the entire radioactive surface of the source with a filter paper with the application of moderate finger pressure. The radioactivity on the paper shall be measured by using radiation detection instrumentation capable of detecting 0.005 microcurie of plutonium. If any such test discloses more than 0.005 microcurie of radioactive material, the source shall be deemed to be leaking or losing plutonium and shall not be transferred to a general licensee under § 70.19.

[29 FR 5884, May 5, 1964, as amended at 32 FR 2563, Feb. 7, 1967; 38 FR 1272, Jan. 11, 1973; 40 FR 8792, Mar. 3, 1975; 42 FR 43966, Sept. 1, 1977; 43 FR 6925, Feb. 17, 1978]

[1] Sources generally licensed under this section prior to January 19, 1975 may bear labels authorized by the regulations in effect on January 1, 1975.

§ 70.40 Ineligibility of certain applicants.

A license may not be issued to the Corporation if the Commission determines that:

(a) The Corporation is owned, controlled, or dominated by an alien, a foreign corporation, or a foreign government; or

(b) The issuance of such a license would be inimical to—

(1) The common defense and security of the United States; or

(2) The maintenance of a reliable and economical domestic source of enrichment services.

[62 FR 6669, Feb. 12, 1997]

Subpart F—Acquisition, Use and Transfer of Special Nuclear Material, Creditors' Rights

§ 70.41 Authorized use of special nuclear material.

(a) Each licensee shall confine his possession and use of special nuclear material to the locations and purposes authorized in his license. Except as otherwise provided in the license, each license issued pursuant to the regulations in this part shall carry with it the right to receive title to, own, acquire, receive, possess and use special nuclear material. Preparation for shipment and transport of special nuclear material shall be in accordance with the provisions of part 71 of this chapter.

(b) The possession, use and transfer of any special nuclear material produced by a licensee, in connection with or as a result of use of special nuclear material received under his license, shall be subject to the provisions of the license and the regulations in this part.

[21 FR 764, Feb. 3, 1956, as amended at 38 FR 33970, Dec. 10, 1973; 43 FR 6925, Feb. 17, 1978]

§ 70.42 Transfer of special nuclear material.

(a) No licensee shall transfer special nuclear material except as authorized pursuant to this section.

(b) Except as otherwise provided in his license and subject to the provisions of paragraphs (c) and (d) of this section, any licensee may transfer special nuclear material:

(1) To the Department;

(2) To the agency in any Agreement State which regulates radioactive materials pursuant to an agreement with the Commission or the Atomic Energy Commission under section 274 of the Act, if the quantity transferred is not sufficient to form a critical mass;

(3) To any person exempt from the licensing requirements of the Act and regulations in this part, to the extent permitted under such exemption;

(4) To any person in an Agreement State, subject to the jurisdiction of that State, who has been exempted from the licensing requirements and regulations of that State, to the extent permitted under such exemption;

(5) To any person authorized to receive such special nuclear material under terms of a specific license or a general license or their equivalents issued by the Commission or an Agreement State;

(6) To any person abroad pursuant to an export license issued under part 110 of this chapter; or

(7) As otherwise authorized by the Commission in writing.

(c) Before transferring special nuclear material to a specific licensee of the Commission or an Agreement State or to a general licensee who is required to register with the Commission or with an Agreement State prior to receipt of the special nuclear material, the licensee transferring the material shall verify that the transferee's license authorizes receipt of the type, form, and quantity of special nuclear material to be transferred.

(d) The following methods for the verification required by paragraph (c) of this section are acceptable:

(1) The transferor may have in his or her possession, and read, a current copy of the transferee's specific license or registration certificate. The transferor shall retain a copy of each license or certificate for three years from the date that it was obtained.

(2) The transferor may have in its possession a written certification by the transferee that the transferee is authorized by license or registration certificate to receive the type, form,

and quantity of special nuclear material to be transferred, specifying the license or registration certificate number, issuing agency, and expiration date. The transferor shall retain the written certification as a record for three years from the date of receipt of the certification;

(3) For emergency shipments the transferor may accept oral certification by the transferee that he or she is authorized by license or registration certification to receive the type, form, and quantity of special nuclear material to be transferred, specifying the license or registration certificate number, issuing agency, and expiration date, provided that the oral certification is confirmed in writing within ten days. The transferor shall retain the written confirmation of the oral certification for three years from the date of receipt of the confirmation;

(4) The transferor may obtain other sources of information compiled by a reporting service from official records of the Commission or the licensing agency of an Agreement State as to the identity of licensees and the scope and expiration dates of licenses and registrations. The transferor shall retain the compilation of information as a record for three years from the date that it was obtained; or

(5) When none of the methods of verification described in paragraphs (d)(1) to (4) of this section are readily available or when a transferor desires to verify that information received by one of these methods is correct or up-to-date, the transferor may obtain and record confirmation from the Commission or the licensing agency of an Agreement State that the transferee is licensed to receive the special nuclear material. The transferor shall retain the record of confirmation for three years from the date the record is made.

[38 FR 33970, Dec. 10, 1973, as amended at 40 FR 8792, Mar. 3, 1975; 43 FR 6925, Feb. 21, 1978; 53 FR 19253, May 27, 1988]

§ 70.44 Creditor regulations.

(a) Pursuant to section 184 of the Act, the Commission consents, without individual application, to the creation of any mortgage, pledge, or other lien upon any special nuclear material, not owned by the United States, which is subject to licensing: *Provided:*

(1) That the rights of any creditor so secured may be exercised only in compliance with and subject to the same requirements and restrictions as would apply to the licensee pursuant to the provisions of the license, the Atomic Energy Act of 1954, as amended, and regulations issued by the Commission pursuant to said Act; and

(2) That no creditor so secured may take possession of the special nuclear material pursuant to the provisions of this section prior to either the issuance of a license by the Commission authorizing such possession or the transfer of a license pursuant to § 70.36.

(b) Nothing contained in this section shall be deemed to affect the means of acquiring, or the priority of, any tax lien or other lien provided by law.

(c) As used in this section, *creditor* includes, without implied limitation, the trustee under any mortgage, pledge, or lien on special nuclear material made to secure any creditor, any trustee or receiver of the special nuclear material appointed by a court of competent jurisdiction in any action brought for the benefit of any creditor secured by such mortgage, pledge, or lien, any purchaser of such special nuclear material at the sale thereof upon foreclosure of such mortgage, pledge, or lien or upon exercise of any power of sale contained therein, or any assignee of any such purchaser.

[32 FR 2563, Feb. 7, 1967, as amended at 35 FR 11461, July 17, 1970]

Subpart G—Special Nuclear Material Control, Records, Reports and Inspections

§ 70.50 Reporting requirements.

(a) *Immediate report.* Each licensee shall notify the NRC as soon as possible but not later than 4 hours after the discovery of an event that prevents immediate protective actions necessary to avoid exposures to radiation or radioactive materials that could exceed regulatory limits or releases of licensed material that could exceed regulatory limits (events may include fires, explosions, toxic gas releases, etc.).

(b) *Twenty-four hour report.* Each licensee shall notify the NRC within 24 hours after the discovery of any of the following events involving licensed material:

(1) An unplanned contamination event that:

(i) Requires access to the contaminated area, by workers or the public, to be restricted for more than 24 hours by imposing additional radiological controls or by prohibiting entry into the area;

(ii) Involves a quantity of material greater than five times the lowest annual limit on intake specified in Appendix B of §§ 20.1001–20.2401 of 10 CFR part 20 for the material; and

(iii) Has access to the area restricted for a reason other than to allow isotopes with a half-life of less than 24 hours to decay prior to decontamination.

(2) An event in which equipment is disabled or fails to function as designed when:

(i) The equipment is required by regulation or licensee condition to prevent releases exceeding regulatory limits, to prevent exposures to radiation and radioactive materials exceeding regulatory limits, or to mitigate the consequences of an accident;

(ii) The equipment is required to be available and operable when it is disabled or fails to function; and

(iii) No redundant equipment is available and operable to perform the required safety function.

(3) An event that requires unplanned medical treatment at a medical facility of an individual with spreadable radioactive contamination on the individual's clothing or body.

(4) An unplanned fire or explosion damaging any licensed material or any device, container, or equipment containing licensed material when:

(i) The quantity of material involved is greater than five times the lowest annual limit on intake specified in appendix B of §§ 20.1001–20.2401 of 10 CFR part 20 for the material; and

(ii) The damage affects the integrity of the licensed material or its container.

(c) *Preparation and submission of reports.* Reports made by licensees in response to the requirements of this section must be made as follows:

(1) Licensees shall make reports required by paragraphs (a) and (b) of this section, and by § 70.74 and appendix A of this part, if applicable, by telephone to the NRC Headquarters Operations Center at the numbers specified in appendix A to part 73 of this chapter. To the extent that the information is available at the time of notification, the information provided in these reports must include:

(i) Caller's name, position title, and call-back telephone number;

(ii) Date, time, and exact location of the event;

(iii) Description of the event, including:

(A) Radiological or chemical hazards involved, including isotopes, quantities, and chemical and physical form of any material released;

(B) Actual or potential health and safety consequences to the workers, the public, and the environment, including relevant chemical and radiation data for actual personnel exposures to radiation or radioactive materials or hazardous chemicals produced from licensed materials (e.g., level of radiation exposure, concentration of chemicals, and duration of exposure);

(C) The sequence of occurrences leading to the event, including degradation or failure of structures, systems, equipment, components, and activities of personnel relied on to prevent potential accidents or mitigate their consequences; and

(D) Whether the remaining structures, systems, equipment, components, and activities of personnel relied on to prevent potential accidents or mitigate their consequences are available and reliable to perform their function;

(iv) External conditions affecting the event;

(v) Additional actions taken by the licensee in response to the event;

(vi) Status of the event (e.g., whether the event is on-going or was terminated);

(vii) Current and planned site status, including any declared emergency class;

(viii) Notifications, related to the event, that were made or are planned

to any local, State, or other Federal agencies;

(ix) Status of any press releases, related to the event, that were made or are planned.

(2) *Written report.* Each licensee that makes a report required by paragraph (a) or (b) of this section shall submit a written follow-up report within 30 days of the initial report. Written reports prepared pursuant to other regulations may be submitted to fulfill this requirement if the report contains all the necessary information, and the appropriate distribution is made. These written reports must be sent to the NRC's Document Control Desk, using an appropriate method listed in § 70.5(a), with a copy to the appropriate NRC regional office listed in appendix D to part 20 of this chapter. The reports must include the following:

(i) Complete applicable information required by § 70.50(c)(1);

(ii) The probable cause of the event, including all factors that contributed to the event and the manufacturer and model number (if applicable) of any equipment that failed or malfunctioned;

(iii) Corrective actions taken or planned to prevent occurrence of similar or identical events in the future and the results of any evaluations or assessments; and

(iv) For licensees subject to Subpart H of this part, whether the event was identified and evaluated in the Integrated Safety Analysis.

(d) The provisions of § 70.50 do not apply to licensees subject to § 50.72. They do apply to those Part 50 licensees possessing material licensed under Part 70 that are not subject to the notification requirements in § 50.72.

[56 FR 40769, Aug. 16, 1991; 56 FR 64980, Dec. 13, 1991, as amended at 59 FR 14087, Mar. 25, 1994; 65 FR 56226, Sept. 18, 2000; 68 FR 58817, Oct. 10, 2003; 79 FR 57725, Sept. 26, 2014; 85 FR 65663, Oct. 16, 2020]

§ 70.51 Records requirements.

(a) Before license termination, licensees shall forward the following records to the appropriate NRC Regional Office:

(1) Records of disposal of licensed material made under 10 CFR 20.2002 (including burials authorized before January 28, 1981[1]), 20.2003, 20.2004, 20.2005;

(2) Records required by 10 CFR 20.2103(b)(4); and

(3) Records required by § 70.25(g).

(b) If licensed activities are transferred or assigned in accordance with § 70.32(a)(3), the licensee shall transfer the following records to the new licensee and the new licensee will be responsible for maintaining these records until the license is terminated:

(1) Records of disposal of licensed material made under 10 CFR 20.2002 (including burials authorized before January 28, 1981[1]), 20.2003, 20.2004, 20.2005;

(2) Records required by 10 CFR 20.2103(b)(4); and

(3) Records required by § 70.25(g).

(c)(1) Records which must be maintained pursuant to this part may be the original or a reproduced copy, or microform if the reproduced copy or microform is duly authenticated by authorized personnel, and the microform is capable of producing a clear and legible copy after storage for the period specified by Commission regulations. The record may also be stored in electronic media with the capability for producing legible, accurate, and complete records during the required retention period. Records such as letters, drawings, and specifications, must include all pertinent information such as stamps, initials, and signatures. The licensee shall maintain adequate safeguards against tampering with and loss of records.

(2) If there is a conflict between the Commission's regulations in this part, license condition, or other written Commission approval or authorization pertaining to the retention period for the same type of record, the retention period specified in the regulations in this part for these records shall apply unless the Commission, under § 70.17 has granted a specific exemption from the record retention requirements

[1] A previous § 20.304 permitted burial of small quantities of licensed materials in soil before January 28, 1981, without specific Commission authorization. *See* § 20.304 contained in the 10 CFR, parts 0 to 199, edition revised as of January 1, 1981.

specified in the regulations in this part.

[67 FR 78142, Dec. 23, 2002, as amended at 72 FR 35145, June 27, 2007]

§ 70.52 Reports of accidental criticality.

(a) Each licensee shall notify the NRC Headquarters Operations Center by telephone at the numbers specified in appendix A to part 73 of this chapter within 1 hour after discovery of any case of accidental criticality.

(b) This notification must be made to the NRC Operations Center via the Emergency Notification System if the licensee is party to that system. If the Emergency Notification System is inoperative or unavailable, the licensee shall make the required notification via commercial telephonic service or other dedicated telephonic system or any other method that will ensure that a report is received by the NRC Operations Center within one hour.

[67 FR 78143, Dec. 23, 2002, as amended at 85 FR 65663, Oct. 16, 2020]

§ 70.55 Inspections.

(a) Each licensee shall afford to the Commission at all reasonable times opportunity to inspect special nuclear material and the premises and facilities wherein special nuclear material is used, produced, or stored.

(b) Each licensee shall make available to the Commission for inspection, upon reasonable notice, records kept by the licensee pertaining to his receipt, possession, use, acquisition, import, export, or transfer of special nuclear material.

(c)(1) In the case of fuel cycle facilities where nuclear reactor fuel is fabricated or processed each licensee shall upon request by the Director, Office of Nuclear Material Safety and Safeguards or the appropriate NRC Regional Administrator, provide rent-free office space for the exclusive use of Commission inspection personnel. Heat, air conditioning, light, electrical outlets and janitorial services shall be furnished by each licensee. The office shall be convenient to and have full access to the facility and, shall provide the inspector both visual and acoustic privacy.

(2) For a site with a single fuel facility licensed pursuant to part 70, the space provided shall be adequate to accommodate a full-time inspector, a part-time secretary and transient NRC personnel and will be generally commensurate with other office facilities at the site. A space of 250 square feet either within the site's office complex or in an office trailer or other on site space is suggested as a guide. For sites containing multiple fuel facilities, additional space may be requested to accommodate additional full-time inspector(s). The office space that is provided shall be subject to the approval of the Director, Office of Nuclear Material Safety and Safeguards or the appropriate NRC Regional Administrator. All furniture, supplies and communication equipment will be furnished by the Commission.

(3) The licensee shall afford any NRC resident inspector assigned to that site or other NRC inspectors identified by the Director, Office of Nuclear Material Safety and Safeguards, as likely to inspect the facility, immediate unfettered access, equivalent to access provided regular plant employees, following proper identification and compliance with applicable access control measures for security, radiological protection, and personal safety.

[21 FR 764, Feb. 3, 1956. Redesignated at 25 FR 1607, Feb. 25, 1960, and 25 FR 12730, Dec. 13, 1960, and amended at 32 FR 2563, Feb. 7, 1967; 44 FR 47919, Aug. 16, 1979; 52 FR 31612, Aug. 21, 1987; 54 FR 6877, Feb. 15, 1989; 55 FR 5979, Feb. 21, 1990]

§ 70.56 Tests.

Each licensee shall perform, or permit the Commission to perform, such tests as the Commission deems appropriate or necessary for the administration of the regulations in this part, including tests of (a) special nuclear material, (b) facilities wherein special nuclear material is utilized, produced or stored, (c) radiation detection and monitoring instruments, and (d) other equipment and devices used in connection with the production, utilization or storage of special nuclear material.

[21 FR 764, Feb. 3, 1956. Redesignated at 25 FR 1607, Feb. 25, 1960, and 25 FR 12730, Dec. 13, 1960]

§ 70.59 Effluent monitoring reporting requirements.

Within 60 days after January 1 and July 1 of each year, and using an appropriate method listed in § 70.5(a), each licensee authorized to possess and use special nuclear material for processing and fuel fabrication, scrap recovery, conversion of uranium hexafluoride, or in a uranium enrichment facility shall submit a report addressed: ATTN: Document Control Desk, Director, Office of Nuclear Material Safety and Safeguards, U.S. Nuclear Regulatory Commission, Washington, DC 20555–0001, with a copy to the appropriate NRC Regional Office shown in appendix D to part 20 of this chapter. The report must specify the quantity of each of the principal radionuclides released to unrestricted areas in liquid and gaseous effluents during the previous six months of operation, and such other information as the Commission may require to estimate maximum potential annual radiation doses to the public resulting from effluent releases. If quantities of radioactive materials released during the reporting periods are significantly above the licensee's design objectives previously reviewed as part of the licensing action, the report must cover this specifically. On the basis of these reports and any additional information the Commission may obtain from the licensee or others, the Commission may from time to time require the licensee to take such action as the Commission deems appropriate.

[68 FR 58817, Oct. 10, 2003]

Subpart H—Additional Requirements for Certain Licensees Authorized To Possess a Critical Mass of Special Nuclear Material

SOURCE: 65 FR 56226, Sept. 18, 2000, unless otherwise noted.

§ 70.60 Applicability.

The regulations in § 70.61 through § 70.76 apply, in addition to other applicable Commission regulations, to each applicant or licensee that is or plans to be authorized to possess greater than a critical mass of special nuclear material, and engaged in enriched uranium processing, fabrication of uranium fuel or fuel assemblies, uranium enrichment, enriched uranium hexafluoride conversion, plutonium processing, fabrication of mixed-oxide fuel or fuel assemblies, scrap recovery of special nuclear material, or any other activity that the Commission determines could significantly affect public health and safety. The regulations in § 70.61 through § 70.76 do not apply to decommissioning activities performed pursuant to other applicable Commission regulations including § 70.25 and § 70.38 of this part. Also, the regulations in § 70.61 through § 70.76 do not apply to activities that are certified by the Commission pursuant to part 76 of this chapter or licensed by the Commission pursuant to other parts of this chapter. Unless specifically addressed in § 70.61 through § 70.76, implementation by current licensees of the Subpart H requirements shall be completed no later than the time of the ISA Summary submittal required in § 70.62(c)(3)(ii).

§ 70.61 Performance requirements.

(a) Each applicant or licensee shall evaluate, in the integrated safety analysis performed in accordance with § 70.62, its compliance with the performance requirements in paragraphs (b), (c), and (d) of this section.

(b) The risk of each credible high-consequence event must be limited. Engineered controls, administrative controls, or both, shall be applied to the extent needed to reduce the likelihood of occurrence of the event so that, upon implementation of such controls, the event is highly unlikely or its consequences are less severe than those in paragrahs (b)(1)–(4) of this section. High consequence events are those internally or externally initiated events that result in:

(1) An acute worker dose of 1 Sv (100 rem) or greater total effective dose equivalent;

(2) An acute dose of 0.25 Sv (25 rem) or greater total effective dose equivalent to any individual located outside the controlled area identified pursuant to paragraph (f) of this section;

(3) An intake of 30 mg or greater of uranium in soluble form by any individual located outside the controlled

area identified pursuant to paragraph (f) of this section; or

(4) An acute chemical exposure to an individual from licensed material or hazardous chemicals produced from licensed material that:

(i) Could endanger the life of a worker, or

(ii) Could lead to irreversible or other serious, long-lasting health effects to any individual located outside the controlled area identified pursuant to paragraph (f) of this section. If an applicant possesses or plans to possess quantities of material capable of such chemical exposures, then the applicant shall propose appropriate quantitative standards for these health effects, as part of the information submitted pursuant to § 70.65 of this subpart.

(c) The risk of each credible intermediate-consequence event must be limited. Engineered controls, administrative controls, or both shall be applied to the extent needed so that, upon implementation of such controls, the event is unlikely or its consequences are less than those in paragraphs (c)(1)–(4) of this section. Intermediate consequence events are those internally or externally initiated events that are not high consequence events, that result in:

(1) An acute worker dose of 0.25 Sv (25 rem) or greater total effective dose equivalent;

(2) An acute dose of 0.05 Sv (5 rem) or greater total effective dose equivalent to any individual located outside the controlled area identified pursuant to paragraph (f) of this section;

(3) A 24-hour averaged release of radioactive material outside the restricted area in concentrations exceeding 5000 times the values in Table 2 of Appendix B to Part 20; or

(4) An acute chemical exposure to an individual from licensed material or hazardous chemicals produced from licensed material that:

(i) Could lead to irreversible or other serious, long-lasting health effects to a worker, or

(ii) Could cause mild transient health effects to any individual located outside the controlled area as specified in paragraph (f) of this section. If an applicant possesses or plans to possess quantities of material capable of such chemical exposures, then the applicant shall propose appropriate quantitative standards for these health effects, as part of the information submitted pursuant to § 70.65 of this subpart.

(d) In addition to complying with paragraphs (b) and (c) of this section, the risk of nuclear criticality accidents must be limited by assuring that under normal and credible abnormal conditions, all nuclear processes are subcritical, including use of an approved margin of subcriticality for safety. Preventive controls and measures must be the primary means of protection against nuclear criticality accidents.

(e) Each engineered or administrative control or control system necessary to comply with paragraphs (b), (c), or (d) of this section shall be designated as an item relied on for safety. The safety program, established and maintained pursuant to § 70.62 of this subpart, shall ensure that each item relied on for safety will be available and reliable to perform its intended function when needed and in the context of the performance requirements of this section.

(f) Each licensee must establish a controlled area, as defined in § 20.1003. In addition, the licensee must retain the authority to exclude or remove personnel and property from the area. For the purpose of complying with the performance requirements of this section, individuals who are not workers, as defined in § 70.4, may be permitted to perform ongoing activities (e.g., at a facility not related to the licensed activities) in the controlled area, if the licensee:

(1) Demonstrates and documents, in the integrated safety analysis, that the risk for those individuals at the location of their activities does not exceed the performance requirements of paragraphs (b)(2), (b)(3), (b)(4)(ii), (c)(2), and (c)(4)(ii) of this section; or

(2) Provides training that satisfies 10 CFR 19.12(a)(1)–(5) to these individuals and ensures that they are aware of the risks associated with accidents involving the licensed activities as determined by the integrated safety analysis, and conspicuously posts and maintains notices stating where the information in 10 CFR 19.11(a) may be examined by these individuals. Under

these conditions, the performance requirements for workers specified in paragraphs (b) and (c) of this section may be applied to these individuals.

§ 70.62 Safety program and integrated safety analysis.

(a) *Safety program.* (1) Each licensee or applicant shall establish and maintain a safety program that demonstrates compliance with the performance requirements of § 70.61. The safety program may be graded such that management measures applied are graded commensurate with the reduction of the risk attributable to that item. Three elements of this safety program; namely, process safety information, integrated safety analysis, and management measures, are described in paragraphs (b) through (d) of this section.

(2) Each licensee or applicant shall establish and maintain records that demonstrate compliance with the requirements of paragraphs (b) through (d) of this section.

(3) Each licensee or applicant shall maintain records of failures readily retrievable and available for NRC inspection, documenting each discovery that an item relied on for safety or management measure has failed to perform its function upon demand or has degraded such that the performance requirements of § 70.61 are not satisfied. These records must identify the item relied on for safety or management measure that has failed and the safety function affected, the date of discovery, date (or estimated date) of the failure, duration (or estimated duration) of the time that the item was unable to perform its function, any other affected items relied on for safety or management measures and their safety function, affected processes, cause of the failure, whether the failure was in the context of the performance requirements or upon demand or both, and any corrective or compensatory action that was taken. A failure must be recorded at the time of discovery and the record of that failure updated promptly upon the conclusion of each failure investigation of an item relied on for safety or management measure.

(b) *Process safety information.* Each licensee or applicant shall maintain process safety information to enable the performance and maintenance of an integrated safety analysis. This process safety information must include information pertaining to the hazards of the materials used or produced in the process, information pertaining to the technology of the process, and information pertaining to the equipment in the process.

(c) *Integrated safety analysis.* (1) Each licensee or applicant shall conduct and maintain an integrated safety analysis, that is of appropriate detail for the complexity of the process, that identifies:

(i) Radiological hazards related to possessing or processing licensed material at its facility;

(ii) Chemical hazards of licensed material and hazardous chemicals produced from licensed material;

(iii) Facility hazards that could affect the safety of licensed materials and thus present an increased radiological risk;

(iv) Potential accident sequences caused by process deviations or other events internal to the facility and credible external events, including natural phenomena;

(v) The consequence and the likelihood of occurrence of each potential accident sequence identified pursuant to paragraph (c)(1)(iv) of this section, and the methods used to determine the consequences and likelihoods; and

(vi) Each item relied on for safety identified pursuant to § 70.61(e) of this subpart, the characteristics of its preventive, mitigative, or other safety function, and the assumptions and conditions under which the item is relied upon to support compliance with the performance requirements of § 70.61.

(2) Integrated safety analysis team qualifications. To assure the adequacy of the integrated safety analysis, the analysis must be performed by a team with expertise in engineering and process operations. The team shall include at least one person who has experience and knowledge specific to each process being evaluated, and persons who have experience in nuclear criticality safety, radiation safety, fire safety, and chemical process safety. One member of the team must be knowledgeable in the specific integrated safety analysis methodology being used.

(3) Requirements for existing licensees. Individuals holding an NRC license on September 18, 2000 shall, with regard to existing licensed activities:

(i) By April 18, 2001, submit for NRC approval, a plan that describes the integrated safety analysis approach that will be used, the processes that will be analyzed, and the schedule for completing the analysis of each process.

(ii) By October 18, 2004, or in accordance with the approved plan submitted under § 70.62(c)(3)(i), complete an integrated safety analysis, correct all unacceptable performance deficiencies, and submit, for NRC approval, an integrated safety analysis summary, including a description of the management measures, in accordance with § 70.65. The Commission may approve a request for an alternative schedule for completing the correction of unacceptable performance deficiencies if the Commission determines that the alternative is warranted by consideration of the following:

(A) Adequate compensatory measures have been established;

(B) Whether it is technically feasible to complete the correction of the unacceptable performance deficiency within the allotted 4-year period;

(C) Other site-specific factors which the Commission may consider appropriate on a case-by-case basis and that are beyond the control of the licensee.

(iii) Pending the correction of unacceptable performance deficiencies identified during the conduct of the integrated safety analysis, the licensee shall implement appropriate compensatory measures to ensure adequate protection.

(d) *Management measures.* Each applicant or licensee shall establish management measures to ensure compliance with the performance requirements of § 70.61. The measures applied to a particular engineered or administrative control or control system may be graded commensurate with the reduction of the risk attributable to that control or control system. The management measures shall ensure that engineered and administrative controls and control systems that are identified as items relied on for safety pursuant to § 70.61(e) of this subpart are designed, implemented, and maintained, as necessary, to ensure they are available and reliable to perform their function when needed, to comply with the performance requirements of § 70.61 of this subpart.

§ 70.64 Requirements for new facilities or new processes at existing facilities.

(a) *Baseline design criteria.* Each prospective applicant or licensee shall address the following baseline design criteria in the design of new facilities. Each existing licensee shall address the following baseline design criteria in the design of new processes at existing facilities that require a license amendment under § 70.72. The baseline design criteria must be applied to the design of new facilities and new processes, but do not require retrofits to existing facilities or existing processes (e.g., those housing or adjacent to the new process); however, all facilities and processes must comply with the performance requirements in § 70.61. Licensees shall maintain the application of these criteria unless the analysis performed pursuant to § 70.62(c) demonstrates that a given item is not relied on for safety or does not require adherence to the specified criteria.

(1) *Quality standards and records.* The design must be developed and implemented in accordance with management measures, to provide adequate assurance that items relied on for safety will be available and reliable to perform their function when needed. Appropriate records of these items must be maintained by or under the control of the licensee throughout the life of the facility.

(2) *Natural phenomena hazards.* The design must provide for adequate protection against natural phenomena with consideration of the most severe documented historical events for the site.

(3) *Fire protection.* The design must provide for adequate protection against fires and explosions.

(4) *Environmental and dynamic effects.* The design must provide for adequate protection from environmental conditions and dynamic effects associated with normal operations, maintenance, testing, and postulated accidents that could lead to loss of safety functions.

(5) *Chemical protection*. The design must provide for adequate protection against chemical risks produced from licensed material, facility conditions which affect the safety of licensed material, and hazardous chemicals produced from licensed material.

(6) *Emergency capability*. The design must provide for emergency capability to maintain control of:

(i) Licensed material and hazardous chemicals produced from licensed material;

(ii) Evacuation of on-site personnel; and

(iii) Onsite emergency facilities and services that facilitate the use of available offsite services.

(7) *Utility services*. The design must provide for continued operation of essential utility services.

(8) *Inspection, testing, and maintenance*. The design of items relied on for safety must provide for adequate inspection, testing, and maintenance, to ensure their availability and reliability to perform their function when needed.

(9) *Criticality control*. The design must provide for criticality control including adherence to the double contingency principle.

(10) *Instrumentation and controls*. The design must provide for inclusion of instrumentation and control systems to monitor and control the behavior of items relied on for safety.

(b) Facility and system design and facility layout must be based on defense-in-depth practices.[1] The design must incorporate, to the extent practicable:

(1) Preference for the selection of engineered controls over administrative controls to increase overall system reliability; and

(2) Features that enhance safety by reducing challenges to items relied on for safety.

§ 70.65 Additional content of applications.

(a) In addition to the contents required by § 70.22, each application must include a description of the applicant's safety program established under § 70.62.

(b) The integrated safety analysis summary must be submitted with the license or renewal application (and amendment application as necessary), but shall not be incorporated in the license. However, changes to the integrated safety analysis summary shall meet the conditions of § 70.72. The integrated safety analysis summary must contain:

(1) A general description of the site with emphasis on those factors that could affect safety (*i.e.*, meteorology, seismology);

(2) A general description of the facility with emphasis on those areas that could affect safety, including an identification of the controlled area boundaries;

(3) A description of each process (defined as a single reasonably simple integrated unit operation within an overall production line) analyzed in the integrated safety analysis in sufficient detail to understand the theory of operation; and, for each process, the hazards that were identified in the integrated safety analysis pursuant to § 70.62(c)(1)(i)–(iii) and a general description of the types of accident sequences;

(4) Information that demonstrates the licensee's compliance with the performance requirements of § 70.61, including a description of the management measures; the requirements for criticality monitoring and alarms in § 70.24; and, if applicable, the requirements of § 70.64;

(5) A description of the team, qualifications, and the methods used to perform the integrated safety analysis;

(6) A list briefly describing each item relied on for safety which is identified

[1] As used in § 70.64, Requirements for new facilities or new processes at existing facilities, defense-in-depth practices means a design philosophy, applied from the outset and through completion of the design, that is based on providing successive levels of protection such that health and safety will not be wholly dependent upon any single element of the design, construction, maintenance, or operation of the facility. The net effect of incorporating defense-in-depth practices is a conservatively designed facility and system that will exhibit greater tolerance to failures and external challenges. The risk insights obtained through performance of the integrated safety analysis can be then used to supplement the final design by focusing attention on the prevention and mitigation of the higher-risk potential accidents.

pursuant to § 70.61(e) in sufficient detail to understand their functions in relation to the performance requirements of § 70.61;

(7) A description of the proposed quantitative standards used to assess the consequences to an individual from acute chemical exposure to licensed material or chemicals produced from licensed materials which are on-site, or expected to be on-site as described in § 70.61(b)(4) and (c)(4);

(8) A descriptive list that identifies all items relied on for safety that are the sole item preventing or mitigating an accident sequence that exceeds the performance requirements of § 70.61; and

(9) A description of the definitions of unlikely, highly unlikely, and credible as used in the evaluations in the integrated safety analysis.

§ 70.66 Additional requirements for approval of license application.

(a) An application for a license from an applicant subject to subpart H will be approved if the Commission determines that the applicant has complied with the requirements of §§ 70.21, 70.22, 70.23, and 70.60 through 70.65.

(b) Submittals by existing licensees in accordance with § 70.62(c)(3)(i) will be approved if the Commission determines that:

(1) The integrated safety analysis approach is in accordance with the requirements of §§ 70.61, 70.62(c)(1), and 70.62(c)(2); and

(2) The schedule is in compliance with § 70.62(c)(3)(ii).

(c) Submittals by existing licensees in accordance with § 70.62(c)(3)(ii) will be approved if the Commission determines that:

(1) The requirements of § 70.65(b) are satisfied; and

(2) The performance requirements in § 70.61 (b), (c) and (d) are satisfied, based on the information in the ISA Summary, together with other information submitted to NRC or available to NRC at the licensee's site.

§ 70.72 Facility changes and change process.

(a) The licensee shall establish a configuration management system to evaluate, implement, and track each change to the site, structures, processes, systems, equipment, components, computer programs, and activities of personnel. This system must be documented in written procedures and must assure that the following are addressed prior to implementing any change:

(1) The technical basis for the change;

(2) Impact of the change on safety and health or control of licensed material;

(3) Modifications to existing operating procedures including any necessary training or retraining before operation;

(4) Authorization requirements for the change;

(5) For temporary changes, the approved duration (e.g., expiration date) of the change; and

(6) The impacts or modifications to the integrated safety analysis, integrated safety analysis summary, or other safety program information, developed in accordance with § 70.62.

(b) Any change to site, structures, processes, systems, equipment, components, computer programs, and activities of personnel must be evaluated by the licensee as specified in paragraph (a) of this section, before the change is implemented. The evaluation of the change must determine, before the change is implemented, if an amendment to the license is required to be submitted in accordance with § 70.34.

(c) The licensee may make changes to the site, structures, processes, systems, equipment, components, computer programs, and activities of personnel, without prior Commission approval, if the change:

(1) Does not:

(i) Create new types of accident sequences that, unless mitigated or prevented, would exceed the performance requirements of § 70.61 and that have not previously been described in the integrated safety analysis summary; or

(ii) Use new processes, technologies, or control systems for which the licensee has no prior experience;

(2) Does not remove, without at least an equivalent replacement of the safety function, an item relied on for safety that is listed in the integrated safety analysis summary and is necessary

for compliance with the performance requirements of § 70.61;

(3) Does not alter any item relied on for safety, listed in the integrated safety analysis summary, that is the sole item preventing or mitigating an accident sequence that exceeds the performance requirements of § 70.61; and

(4) Is not otherwise prohibited by this section, license condition, or order.

(d)(1) For changes that require pre-approval under § 70.72, the licensee shall submit an amendment request to the NRC in accordance with § 70.34 and § 70.65 of this chapter.

(2) For changes that do not require pre-approval under § 70.72, the licensee shall submit to NRC annually, within 30 days after the end of the calendar year during which the changes occurred, a brief summary of all changes to the records required by § 70.62(a)(2) of this subpart.

(3) For all changes that affect the integrated safety analysis summary, the licensee shall submit to NRC annually, within 30 days after the end of the calendar year during which the changes occurred, revised integrated safety analysis summary pages.

(e) If a change covered by § 70.72 is made, the affected on-site documentation must be updated promptly.

(f) The licensee shall maintain records of changes to its facility carried out under this section. These records must include a written evaluation that provides the bases for the determination that the changes do not require prior Commission approval under paragraph (c) or (d) of this section. These records must be maintained until termination of the license.

[65 FR 56226, Sept. 18, 2000, as amended at 71 FR 56346, Sept. 27, 2006]

§ 70.73 Renewal of licenses.

Applications for renewal of a license must be filed in accordance with §§ 2.109, 70.21, 70.22, 70.33, 70.38, and 70.65 of this chapter. Information contained in previous applications, statements, or reports filed with the Commission under the license may be incorporated by reference, provided that these references are clear and specific.

§ 70.74 Additional reporting requirements.

(a) *Reports to NRC Operations Center.* (1) Each licensee shall report to the NRC Operations Center the events described in Appendix A to Part 70.

(2) Reports must be made by a knowledgeable licensee representative and by any method that will ensure compliance with the required time period for reporting.

(3) The information provided must include a description of the event and other related information as described in § 70.50(c)(1).

(4) Follow-up information to the reports must be provided until all information required to be reported in § 70.50(c)(1) of this subpart is complete.

(5) Each licensee shall provide reasonable assurance that reliable communication with the NRC Operations Center is available during each event.

(b) *Written reports.* Each licensee that makes a report required by paragraph (a)(1) of this section shall submit a written follow-up report within 60 days of the initial report. The written report must be sent to the NRC's Document Control Desk, using an appropriate method listed in § 70.5(a), with a copy to the appropriate NRC regional office listed in appendix D to part 20 of this chapter. The reports must include the information as described in § 70.50(c)(2)(i) through (iv).

[65 FR 56226, Sept. 18, 2000, as amended at 79 FR 57725, Sept. 26, 2014]

§ 70.76 Backfitting.

(a) For each licensee, this provision shall apply to Subpart H requirements as soon as the NRC approves that licensee's ISA Summary pursuant to § 70.66. For requirements other than Subpart H, this provision applies regardless of the status of the approval of a licensee's ISA Summary.

(1) Backfitting is defined as the modification of, or addition to, systems, structures, or components of a facility; or to the procedures or organization required to operate a facility; any of which may result from a new or amended provision in the Commission rules or the imposition of a regulatory

staff position interpreting the Commission rules that is either new or different from a previous NRC staff position.

(2) Except as provided in paragraph (a)(4) of this section, the Commission shall require a systematic and documented analysis pursuant to paragraph (b) of this section for backfits which it seeks to impose.

(3) Except as provided in paragraph (a)(4) of this section, the Commission shall require the backfitting of a facility only when it determines, based on the analysis described in paragraph (b) of this section, that there is a substantial increase in the overall protection of the public health and safety or the common defense and security to be derived from the backfit and that the direct and indirect costs of implementation for that facility are justified in view of this increased protection.

(4) The provisions of paragraphs (a)(2) and (a)(3) of this section are inapplicable and, therefore, backfit analysis is not required and the standards in paragraph (a)(3) of this section do not apply where the Commission finds and declares, with appropriately documented evaluation for its finding, any of the following:

(i) That a modification is necessary to bring a facility into compliance with Subpart H of this part;

(ii) That a modification is necessary to bring a facility into compliance with a license or the rules or orders of the Commission, or into conformance with written commitments by the licensee;

(iii) That regulatory action is necessary to ensure that the facility provides adequate protection to the health and safety of the public and is in accord with the common defense and security; or

(iv) That the regulatory action involves defining or redefining what level of protection to the public health and safety or common defense and security should be regarded as adequate.

(5) The Commission shall always require the backfitting of a facility if it determines that the regulatory action is necessary to ensure that the facility provides adequate protection to the health and safety of the public and is in accord with the common defense and security.

(6) The documented evaluation required by paragraph (a)(4) of this section must include a statement of the objectives of and reasons for the modification and the basis for invoking the exception. If immediate effective regulatory action is required, then the documented evaluation may follow, rather than precede, the regulatory action.

(7) If there are two or more ways to achieve compliance with a license or the rules or orders of the Commission, or with written license commitments, or there are two or more ways to reach an adequate level of protection, then ordinarily the licensee is free to choose the way that best suits its purposes. However, should it be necessary or appropriate for the Commission to prescribe a specific way to comply with its requirements or to achieve adequate protection, then cost may be a factor in selecting the way, provided that the objective of compliance or adequate protection is met.

(b) In reaching the determination required by paragraph (a)(3) of this section, the Commission will consider how the backfit should be scheduled in light of other ongoing regulatory activities at the facility and, in addition, will consider information available concerning any of the following factors as may be appropriate and any other information relevant and material to the proposed backfit:

(1) Statement of the specific objectives that the proposed backfit is designed to achieve;

(2) General description of the activity that would be required by the licensee in order to complete the backfit;

(3) Potential change in the risk to the public from the accidental release of radioactive material and hazardous chemicals produced from licensed material;

(4) Potential impact on radiological exposure or exposure to hazardous chemicals produced from licensed material of facility employees;

(5) Installation and continuing costs associated with the backfit, including the cost of facility downtime;

(6) The potential safety impact of changes in facility or operational complexity, including the relationship to

proposed and existing regulatory requirements;

(7) The estimated resource burden on the NRC associated with the proposed backfit and the availability of such resources;

(8) The potential impact of differences in facility type, design, or age on the relevancy and practicality of the proposed backfit; and

(9) Whether the proposed backfit is interim or final and, if interim, the justification for imposing the proposed backfit on an interim basis.

(c) No license will be withheld during the pendency of backfit analyses required by the Commission's rules.

(d) The Executive Director for Operations shall be responsible for implementation of this section, and all analyses required by this section shall be approved by the Executive Director for Operations or his or her designee.

[65 FR 56226, Sept. 18, 2000]

Subpart I—Modification and Revocation of Licenses

§ 70.81 Modification and revocation of licenses.

(a) The terms and conditions of all licenses shall be subject to amendment, revision, or modification by reason of amendments to the Atomic Energy Act of 1954, or by reason of rules, regulations or orders issued in accordance with the Act or any amendments thereto;

(b) Any license may be revoked, suspended or modified for any material false statements in the application or any statement of fact required under section 182 of the Act or because of conditions revealed by such application or statement of fact or any report, record, or inspection or other means which would warrant the Commission to refuse to grant a license on an original application, or for failure to construct or operate a facility in accordance with the terms of the construction permit or license, the technical specifications in the application, or for violation of, or failure to observe any of the terms and conditions of the Act, or of any regulation of the Commission.

(c) Upon revocation, suspension or modification of a license, the Commission may immediately retake possession of all special nuclear material held by the licensee. In cases found by the Commission to be of extreme importance to the national defense or security, or to the health and safety of the public, the Commission may recapture any special nuclear material held by the licensee prior to any of the procedures provided under section 551–558 of title 5 of the United States Code.

(d) Except in cases of willfulness or those in which the public health, interest or safety requires otherwise, no license shall be modified, suspended or revoked unless, prior to the institution of proceedings therefor, facts or conduct which may warrant such action shall have been called to the attention of the licensee in writing and the licensee shall have been accorded opportunity to demonstrate or achieve compliance with all lawful requirements.

[21 FR 764, Feb. 3, 1956, as amended at 35 FR 11461, July 17, 1970. Redesignated at 65 FR 56226, Sept. 18, 2000]

§ 70.82 Suspension and operation in war or national emergency.

Whenever Congress declares that a state of war or national emergency exists, the Commission, if it finds it necessary to the common defense and security may,

(a) Suspend any license it has issued.

(b) Order the recapture of special nuclear material.

(c) Order the operation of any licensed facility.

(d) Order entry into any plant or facility in order to recapture special nuclear material or to operate the facility. Just compensation shall be paid for any damages caused by recapture of special nuclear material or by operation of any facility, pursuant to this section.

[21 FR 764, Feb. 3, 1956, as amended at 32 FR 4056, Mar. 15, 1967; 35 FR 11461, July 17, 1970. Redesignated at 65 FR 56226, Sept. 18, 2000]

Subpart J—Enforcement

§ 70.91 Violations.

(a) The Commission may obtain an injunction or other court order to prevent a violation of the provisions of—

(1) The Atomic Energy Act of 1954, as amended;

(2) Title II of the Energy Reorganization Act of 1974, as amended; or

(3) A regulation or order issued pursuant to those Acts.

(b) The Commission may obtain a court order for the payment of a civil penalty imposed under section 234 of the Atomic Energy Act:

(1) For violations of—

(i) Sections 53, 57, 62, 63, 81, 82, 101, 103, 104, 107, or 109 of the Atomic Energy Act of 1954, as amended;

(ii) Section 206 of the Energy Reorganization Act;

(iii) Any rule, regulation, or order issued pursuant to the sections specified in paragraph (b)(1)(i) of this section;

(iv) Any term, condition, or limitation of any license issued under the sections specified in paragraph (b)(1)(i) of this section.

(2) For any violation for which a license may be revoked under section 186 of the Atomic Energy Act of 1954, as amended.

[57 FR 55077, Nov. 24, 1992. Redesignated at 65 FR 56226, Sept. 18, 2000]

§ 70.92 Criminal penalties.

(a) Section 223 of the Atomic Energy Act of 1954, as amended, provides for criminal sanctions for willful violation of, attempted violation of, or conspiracy to violate, any regulation issued under sections 161b, 161i, or 161o of the Act. For purposes of section 223, all the regulations in part 70 are issued under one or more of sections 161b, 161i, or 161o, except for the sections listed in paragraph (b) of this section.

(b) The regulations in part 70 that are not issued under sections 161b, 161i, or 161o, for the purposes of section 223 are as follows: §§ 70.1, 70.2, 70.4, 70.5, 70.6, 70.8, 70.11, 70.12, 70.13, 70.14, 70.17, 70.18, 70.23, 70.31, 70.33, 70.34, 70.35, 70.37, 70.66, 70.73, 70.76, 70.81, 70.82, 70.63, 70.91, and 70.92.

[57 FR 55077, Nov. 24, 1992. Redesignated and amended at 65 FR 56226, Sept. 18, 2000]

Appendix A to Part 70—Reportable Safety Events

Licensees must comply with reporting requirements in this appendix. As required by 10 CFR 70.74, licensees subject to the requirements in subpart H of part 70, shall report:

(a) *One hour reports.* Events to be reported to the NRC Operations Center within 1 hour of discovery, supplemented with the information in 10 CFR 70.50(c)(1) as it becomes available, followed by a written report within 60 days:

(1) An inadvertent nuclear criticality.

(2) An acute intake by an individual of 30 mg or greater of uranium in a soluble form.

(3) An acute chemical exposure to an individual from licensed material or hazardous chemicals produced from licensed material that exceeds the quantitative standards established to satisfy the requirements in § 70.61(b)(4).

(4) An event or condition such that no items relied on for safety, as documented in the Integrated Safety Analysis summary, remain available and reliable, in an accident sequence evaluated in the Integrated Safety Analysis, to perform their function:

(i) In the context of the performance requirements in § 70.61(b) and § 70.61(c), or

(ii) Prevent a nuclear criticality accident (*i.e.,* loss of all controls in a particular sequence).

(b) *Twenty-four hour reports.* Events to be reported to the NRC Operations Center within 24 hours of discovery, supplemented with the information in 10 CFR 70.50(c)(1) as it becomes available, followed by a written report within 60 days:

(1) Any event or condition that results in the facility being in a state that was not analyzed, was improperly analyzed, or is different from that analyzed in the Integrated Safety Analysis, and which results in failure to meet the performance requirements of § 70.61.

(2) Loss or degradation of items relied on for safety that results in failure to meet the performance requirement of § 70.61.

(3) An acute chemical exposure to an individual from licensed material or hazardous chemicals produced from licensed materials that exceeds the quantitative standards that satisfy the requirements of § 70.61(c)(4).

(4) Any natural phenomenon or other external event, including fires internal and external to the facility, that has affected or may have affected the intended safety function or availability or reliability of one or more items relied on for safety.

(c) *Concurrent Reports*. Any event or situation, related to the health and safety of the public or onsite personnel, or protection of the environment, for which a news release is planned or notification to other government agencies has been or will be made, shall be reported to the NRC Operations Center concurrent to the news release or other notification.

[65 FR 56231, Sept. 18, 2000, as amended at 75 FR 73944, Nov. 30, 2010; 79 FR 57725, Sept. 26, 2014]

PART 71—PACKAGING AND TRANSPORTATION OF RADIOACTIVE MATERIAL

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APPENDIX A TO PART 71—DETERMINATION OF A_1 AND A_2

AUTHORITY: Atomic Energy Act of 1954, secs. 53, 57, 62, 63, 81, 161, 182, 183, 223, 234, 1701 (42 U.S.C. 2073, 2077, 2092, 2093, 2111, 2201, 2232, 2233, 2273, 2282, 2297f); Energy Reorganization Act of 1974, secs. 201, 202, 206, 211 (42 U.S.C. 5841, 5842, 5846, 5851); Nuclear Waste Policy Act of 1982, sec. 180 (42 U.S.C. 10175); 44 U.S.C. 3504 note.

Section 71.97 also issued under Sec. 301, Pub. L. 96–295, 94 Stat. 789 (42 U.S.C. 5841 note).

SOURCE: 60 FR 50264, Sept. 28, 1995, unless otherwise noted.

Subpart A—General Provisions

SOURCE: 69 FR 3786, Jan. 26, 2004, unless otherwise noted.

§ 71.0 Purpose and scope.

(a) This part establishes—

(1) Requirements for packaging, preparation for shipment, and transportation of licensed material; and

(2) Procedures and standards for NRC approval of packaging and shipping procedures for fissile material and for a quantity of other licensed material in excess of a Type A quantity.

(b) The packaging and transport of licensed material are also subject to other parts of this chapter (e.g., 10 CFR parts 20, 21, 30, 40, 70, and 73) and to the regulations of other agencies (e.g., the U.S. Department of Transportation (DOT) and the U.S. Postal Service)[1] having jurisdiction over means of transport. The requirements of this part are in addition to, and not in substitution for, other requirements.

(c) The regulations in this part apply to any licensee authorized by specific or general license issued by the Commission to receive, possess, use, or transfer licensed material, if the licensee delivers that material to a carrier for transport, transports the material outside the site of usage as specified in the NRC license, or transports that material on public highways. No provision of this part authorizes possession of licensed material.

(d)(1) Exemptions from the requirement for license in § 71.3 are specified in § 71.14. General licenses for which no NRC package approval is required are issued in §§ 71.21 through 71.23. The general license in § 71.17 requires that an NRC certificate of compliance or other package approval be issued for the package to be used under this general license.

(2) Application for package approval must be completed in accordance with subpart D of this part, demonstrating that the design of the package to be used satisfies the package approval standards contained in subpart E of this part, as related to the tests of subpart F of this part.

(3) A licensee transporting licensed material, or delivering licensed material to a carrier for transport, shall comply with the operating control requirements of subpart G of this part; the quality assurance requirements of subpart H of this part; and the general provisions of subpart A of this part, including DOT regulations referenced in § 71.5.

(e) The regulations of this part apply to any person holding, or applying for, a certificate of compliance, issued pursuant to this part, for a package intended for the transportation of radioactive material, outside the confines of a licensee's facility or authorized place of use.

(f) The regulations in this part apply to any person required to obtain a certificate of compliance, or an approved compliance plan, pursuant to part 76 of this chapter, if the person delivers radioactive material to a common or

[1] Postal Service manual (Domestic Mail Manual), Section 124, which is incorporated by reference at 39 CFR 111.1.

contract carrier for transport or transports the material outside the confines of the person's plant or other authorized place of use.

(g) This part also gives notice to all persons who knowingly provide to any licensee, certificate holder, quality assurance program approval holder, applicant for a license, certificate, or quality assurance program approval, or to a contractor, or subcontractor of any of them, components, equipment, materials, or other goods or services, that relate to a licensee's, certificate holder's, quality assurance program approval holder's, or applicant's activities subject to this part, that they may be individually subject to NRC enforcement action for violation of §71.8.

[69 FR 3786, Jan. 26, 2004, as amended at 80 FR 34011, June 12, 2015]

§71.1 Communications and records.

(a) Except where otherwise specified, all communications and reports concerning the regulations in this part and applications filed under them should be sent by mail addressed: ATTN: Document Control Desk, Director, Division of Fuel Management, Office of Nuclear Material Safety and Safeguards, U.S. Nuclear Regulatory Commission, Washington, DC 20555–0001, by hand delivery to the NRC's offices at 11555 Rockville Pike, Rockville, Maryland; or, where practicable, by electronic submission, for example, via Electronic Information Exchange, or CD-ROM. Electronic submissions must be made in a manner that enables the NRC to receive, read, authenticate, distribute, and archive the submission, and process and retrieve it a single page at a time. Detailed guidance on making electronic submissions can be obtained by visiting the NRC's Web site at *http://www.nrc.gov/site-help/e-submittals.html*; by e-mail to *MSHD.Resource@nrc.gov*; or by writing the Office of the Chief Information Officer, U.S. Nuclear Regulatory Commission, Washington, DC 20555–0001. The guidance discusses, among other topics, the formats the NRC can accept, the use of electronic signatures, and the treatment of nonpublic information. If the submission date falls on a Saturday, Sunday, or a Federal holiday, the next Federal working day becomes the official due date.

(b) Each record required by this part must be legible throughout the retention period specified by each Commission regulation. The record may be the original or a reproduced copy or a microform provided that the copy or microform is authenticated by authorized personnel and that the microform is capable of producing a clear copy throughout the required retention period. The record may also be stored in electronic media with the capability for producing legible, accurate, and complete records during the required retention period. Records such as letters, drawings, and specifications must include all pertinent information such as stamps, initials, and signatures. The licensee shall maintain adequate safeguards against tampering with and loss of records.

[69 FR 3786, Jan. 26, 2004; 69 FR 58038, Sept. 29, 2004, as amended at 74 FR 62683, Dec. 1, 2009; 75 FR 73945, Nov. 30, 2010; 79 FR 75741, Dec. 19, 2014; 80 FR 74981, Dec. 1, 2015; 84 FR 65645, Nov. 29, 2019]

§71.2 Interpretations.

Except as specifically authorized by the Commission in writing, no interpretation of the meaning of the regulations in this part by any officer or employee of the Commission, other than a written interpretation by the General Counsel, will be recognized to be binding upon the Commission.

§71.3 Requirement for license.

Except as authorized in a general license or a specific license issued by the Commission, or as exempted in this part, no licensee may—

(a) Deliver licensed material to a carrier for transport; or

(b) Transport licensed material.

§71.4 Definitions.

The following terms are as defined here for the purpose of this part. To ensure compatibility with international transportation standards, all limits in this part are given in terms of dual units: The International System of Units (SI) followed or preceded by U.S. standard or customary units. The U.S. customary units are not exact equivalents but are rounded to a convenient

value, providing a functionally equivalent unit. For the purpose of this part, either unit may be used.

A_1 means the maximum activity of special form radioactive material permitted in a Type A package. This value is either listed in Appendix A, Table A–1, of this part, or may be derived in accordance with the procedures prescribed in Appendix A of this part.

A_2 means the maximum activity of radioactive material, other than special form material, LSA, and SCO material, permitted in a Type A package. This value is either listed in Appendix A, Table A–1, of this part, or may be derived in accordance with the procedures prescribed in Appendix A of this part.

Carrier means a person engaged in the transportation of passengers or property by land or water as a common, contract, or private carrier, or by civil aircraft.

Certificate holder means a person who has been issued a certificate of compliance or other package approval by the Commission.

Certificate of Compliance (CoC) means the certificate issued by the Commission under subpart D of this part which approves the design of a package for the transportation of radioactive material.

Close reflection by water means immediate contact by water of sufficient thickness for maximum reflection of neutrons.

Consignment means each shipment of a package or groups of packages or load of radioactive material offered by a shipper for transport.

Containment system means the assembly of components of the packaging intended to retain the radioactive material during transport.

Contamination means the presence of a radioactive substance on a surface in quantities in excess of 0.4 Bq/cm^2 (1×10^{-5} μCi/cm^2) for beta and gamma emitters and low toxicity alpha emitters, or 0.04 Bq/cm^2 (1×10^{-6} μCi/cm^2) for all other alpha emitters.

(1) *Fixed contamination* means contamination that cannot be removed from a surface during normal conditions of transport.

(2) *Non-fixed contamination* means contamination that can be removed from a surface during normal conditions of transport.

Conveyance means:

(1) For transport by public highway or rail any transport vehicle or large freight container;

(2) For transport by water any vessel, or any hold, compartment, or defined deck area of a vessel including any transport vehicle on board the vessel; and

(3) For transport by any aircraft.

Criticality Safety Index (CSI) means the dimensionless number (rounded up to the next tenth) assigned to and placed on the label of a fissile material package, to designate the degree of control of accumulation of packages, overpacks or freight containers containing fissile material during transportation. Determination of the criticality safety index is described in §§ 71.22, 71.23, and 71.59. The criticality safety index for an overpack, freight container, consignment or conveyance containing fissile material packages is the arithmetic sum of the criticality safety indices of all the fissile material packages contained within the overpack, freight container, consignment or conveyance.

Deuterium means, for the purposes of §§ 71.15 and 71.22, deuterium and any deuterium compounds, including heavy water, in which the ratio of deuterium atoms to hydrogen atoms exceeds 1:5000.

DOT means the U.S. Department of Transportation.

Exclusive use means the sole use by a single consignor of a conveyance for which all initial, intermediate, and final loading and unloading are carried out in accordance with the direction of the consignor or consignee. The consignor and the carrier must ensure that any loading or unloading is performed by personnel having radiological training and resources appropriate for safe handling of the consignment. The consignor must issue specific instructions, in writing, for maintenance of exclusive use shipment controls, and include them with the shipping paper information provided to the carrier by the consignor.

Fissile material means the radionuclides uranium-233, uranium-235, plutonium-239, and plutonium-241, or any

combination of these radionuclides. Fissile material means the fissile nuclides themselves, not material containing fissile nuclides. Unirradiated natural uranium and depleted uranium and natural uranium or depleted uranium, that has been irradiated in thermal reactors only, are not included in this definition. Certain exclusions from fissile material controls are provided in §71.15.

Graphite means, for the purposes of §§71.15 and 71.22, graphite with a boron equivalent content less than 5 parts per million and density greater than 1.5 grams per cubic centimeter.

Indian tribe means an Indian or Alaska Native Tribe, band, nation, pueblo, village, or community that the Secretary of the Interior acknowledges to exist as an Indian Tribe pursuant to the Federally Recognized Indian Tribe List Act of 1994, 25 U.S.C. 5130.

Licensed material means byproduct, source, or special nuclear material received, possessed, used, or transferred under a general or specific license issued by the Commission pursuant to the regulations in this chapter.

Low Specific Activity (LSA) material means radioactive material with limited specific activity which is nonfissile or is excepted under §71.15, and which satisfies the descriptions and limits set forth in the following section. Shielding materials surrounding the LSA material may not be considered in determining the estimated average specific activity of the package contents. The LSA material must be in one of three groups:

(1) LSA–I.

(i) Uranium and thorium ores, concentrates of uranium and thorium ores, and other ores containing naturally occurring radionuclides that are intended to be processed for the use of these radionuclides;

(ii) Natural uranium, depleted uranium, natural thorium or their compounds or mixtures, provided they are unirradiated and in solid or liquid form;

(iii) Radioactive material other than fissile material, for which the A_2 value is unlimited; or

(iv) Other radioactive material in which the activity is distributed throughout and the estimated average specific activity does not exceed 30 times the value for exempt material activity concentration determined in accordance with appendix A.

(2) LSA–II.

(i) Water with tritium concentration up to 0.8 TBq/liter (20.0 Ci/liter); or

(ii) Other radioactive material in which the activity is distributed throughout and the estimated average specific activity does not exceed 10^{-4} A_2/g for solids and gases, and 10^{-5} A_2/g for liquids.

(3) LSA–III. Solids (e.g., consolidated wastes, activated materials), excluding powders, that satisfy the requirements of §71.77, in which:

(i) The radioactive material is distributed throughout a solid or a collection of solid objects, or is essentially uniformly distributed in a solid compact binding agent (such as concrete, bitumen, ceramic, etc.);

(ii) The radioactive material is relatively insoluble, or it is intrinsically contained in a relatively insoluble material, so that even under loss of packaging, the loss of radioactive material per package by leaching when placed in water for 7 days will not exceed 0.1 A_2; and

(iii) The estimated average specific activity of the solid, excluding any shielding material, does not exceed 2×10^{-3} A_2/g.

Low toxicity alpha emitters means natural uranium, depleted uranium, natural thorium; uranium-235, uranium-238, thorium-232, thorium-228 or thorium-230 when contained in ores or physical or chemical concentrates or tailings; or alpha emitters with a half-life of less than 10 days.

Maximum normal operating pressure means the maximum gauge pressure that would develop in the containment system in a period of 1 year under the heat condition specified in §71.71(c)(1), in the absence of venting, external cooling by an ancillary system, or operational controls during transport.

Natural thorium means thorium with the naturally occurring distribution of thorium isotopes (essentially 100 weight percent thorium-232).

Normal form radioactive material means radioactive material that has not been demonstrated to qualify as ''special form radioactive material.''

Optimum interspersed hydrogenous moderation means the presence of hydrogenous material between packages to such an extent that the maximum nuclear reactivity results.

Package means the packaging together with its radioactive contents as presented for transport.

(1) Fissile material package or Type AF package, Type BF package, Type B(U)F package, or Type B(M)F package means a fissile material packaging together with its fissile material contents.

(2) Type A package means a Type A packaging together with its radioactive contents. A Type A package is defined and must comply with the DOT regulations in 49 CFR part 173.

(3) Type B package means a Type B packaging together with its radioactive contents. On approval, a Type B package design is designated by NRC as B(U) unless the package has a maximum normal operating pressure of more than 700 kPa (100 lbs/in^2) gauge or a pressure relief device that would allow the release of radioactive material to the environment under the tests specified in § 71.73 (hypothetical accident conditions), in which case it will receive a designation B(M). B(U) refers to the need for unilateral approval of international shipments; B(M) refers to the need for multilateral approval of international shipments. There is no distinction made in how packages with these designations may be used in domestic transportation. To determine their distinction for international transportation, *see* DOT regulations in 49 CFR Part 173. A Type B package approved before September 6, 1983, was designated only as Type B. Limitations on its use are specified in § 71.19.

Packaging means the assembly of components necessary to ensure compliance with the packaging requirements of this part. It may consist of one or more receptacles, absorbent materials, spacing structures, thermal insulation, radiation shielding, and devices for cooling or absorbing mechanical shocks. The vehicle, tie-down system, and auxiliary equipment may be designated as part of the packaging.

Special form radioactive material means radioactive material that satisfies the following conditions:

(1) It is either a single solid piece or is contained in a sealed capsule that can be opened only by destroying the capsule;

(2) The piece or capsule has at least one dimension not less than 5 mm (0.2 in); and

(3) It satisfies the requirements of § 71.75. A special form encapsulation designed in accordance with the requirements of § 71.4 in effect on June 30, 1983 (see 10 CFR part 71, revised as of January 1, 1983), and constructed before July 1, 1985; a special form encapsulation designed in accordance with the requirements of § 71.4 in effect on March 31, 1996 (see 10 CFR part 71, revised as of January 1, 1996), and constructed before April 1, 1998; and special form material that was successfully tested before September 10, 2015 in accordance with the requirements of § 71.75(d) of this section in effect before September 10, 2015 may continue to be used. Any other special form encapsulation must meet the specifications of this definition.

Specific activity of a radionuclide means the radioactivity of the radionuclide per unit mass of that nuclide. The specific activity of a material in which the radionuclide is essentially uniformly distributed is the radioactivity per unit mass of the material.

Spent nuclear fuel or Spent fuel means fuel that has been withdrawn from a nuclear reactor following irradiation, has undergone at least 1 year's decay since being used as a source of energy in a power reactor, and has not been chemically separated into its constituent elements by reprocessing. Spent fuel includes the special nuclear material, byproduct material, source material, and other radioactive materials associated with fuel assemblies.

State means a State of the United States, the District of Columbia, the Commonwealth of Puerto Rico, the Virgin Islands, Guam, American Samoa, and the Commonwealth of the Northern Mariana Islands.

Surface Contaminated Object (SCO) means a solid object that is not itself classed as radioactive material, but which has radioactive material distributed on any of its surfaces. SCO must

be in one of two groups with surface activity not exceeding the following limits:

(1) SCO-I: A solid object on which:

(i) The nonfixed contamination on the accessible surface averaged over 300 cm^2 (or the area of the surface if less than 300 cm^2) does not exceed 4 Bq/cm^2 (10^{-4} microcurie/cm^2) for beta and gamma and low toxicity alpha emitters, or 0.4 Bq/cm^2 (10^{-5} microcurie/cm^2) for all other alpha emitters;

(ii) The fixed contamination on the accessible surface averaged over 300 cm^2 (or the area of the surface if less than 300 cm^2) does not exceed 4×10^4 Bq/cm^2 (1.0 microcurie/cm^2) for beta and gamma and low toxicity alpha emitters, or 4×10^3 Bq/cm^2 (0.1 microcurie/cm^2) for all other alpha emitters; and

(iii) The nonfixed contamination plus the fixed contamination on the inaccessible surface averaged over 300 cm^2 (or the area of the surface if less than 300 cm^2) does not exceed 4×10^4 Bq/cm^2 (1 microcurie/cm^2) for beta and gamma and low toxicity alpha emitters, or 4×10^3 Bq/cm^2 (0.1 microcurie/cm^2) for all other alpha emitters.

(2) SCO-II: A solid object on which the limits for SCO-I are exceeded and on which:

(i) The nonfixed contamination on the accessible surface averaged over 300 cm^2 (or the area of the surface if less than 300 cm^2) does not exceed 400 Bq/cm^2 (10^{-2} microcurie/cm^2) for beta and gamma and low toxicity alpha emitters or 40 Bq/cm^2 (10^{-3} microcurie/cm^2) for all other alpha emitters;

(ii) The fixed contamination on the accessible surface averaged over 300 cm^2 (or the area of the surface if less than 300 cm^2) does not exceed 8×10^5 Bq/cm^2 (20 microcuries/cm^2) for beta and gamma and low toxicity alpha emitters, or 8×10^4 Bq/cm^2 (2 microcuries/cm^2) for all other alpha emitters; and

(iii) The nonfixed contamination plus the fixed contamination on the inaccessible surface averaged over 300 cm^2 (or the area of the surface if less than 300 cm^2) does not exceed 8×10^5 Bq/cm^2 (20 microcuries/cm^2) for beta and gamma and low toxicity alpha emitters, or 8×10^4 Bq/cm^2 (2 microcuries/cm^2) for all other alpha emitters.

Transport index (TI) means the dimensionless number (rounded up to the next tenth) placed on the label of a package, to designate the degree of control to be exercised by the carrier during transportation. The transport index is the number determined by multiplying the maximum radiation level in millisievert (mSv) per hour at 1 meter (3.3 ft) from the external surface of the package by 100 (equivalent to the maximum radiation level in millirem per hour at 1 meter (3.3 ft)).

Tribal official means the highest ranking individual that represents Tribal leadership, such as the Chief, President, or Tribal Council leadership.

Type A quantity means a quantity of radioactive material, the aggregate radioactivity of which does not exceed A_1 for special form radioactive material, or A_2, for normal form radioactive material, where A_1 and A_2 are given in Table A–1 of this part, or may be determined by procedures described in Appendix A of this part.

Type B quantity means a quantity of radioactive material greater than a Type A quantity.

Unirradiated uranium means uranium containing not more than 2×10^3 Bq of plutonium per gram of uranium-235, not more than 9×10^6 Bq of fission products per gram of uranium-235, and not more than 5×10^{-3} g of uranium-236 per gram of uranium-235.

Uranium—natural, depleted, enriched. (1) Natural uranium means uranium (which may be chemically separated) with the naturally occurring distribution of uranium isotopes (approximately 0.711 weight percent uranium-235, and the remainder by weight essentially uranium-238).

(2) Depleted uranium means uranium containing less uranium-235 than the naturally occurring distribution of uranium isotopes.

(3) Enriched uranium means uranium containing more uranium-235 than the naturally occurring distribution of uranium isotopes.

[69 FR 3786, Jan. 26, 2004, as amended at 69 FR 58038, Sept. 29, 2004; 77 FR 34204, June 11, 2012; 80 FR 34011, June 12, 2015; 80 FR 48684, Aug. 14, 2015; 80 FR 74981, Dec. 1, 2015; 82 FR 52825, Nov. 15, 2017; 86 FR 67843, Nov. 30, 2021]

§ 71.5 Transportation of licensed material.

(a) Each licensee who transports licensed material outside the site of usage, as specified in the NRC license, or where transport is on public highways, or who delivers licensed material to a carrier for transport, shall comply with the applicable requirements of the DOT regulations in 49 CFR parts 107, 171 through 180, and 390 through 397, appropriate to the mode of transport.

(1) The licensee shall particularly note DOT regulations in the following areas:

(i) Packaging—49 CFR part 173: subparts A, B, and I.

(ii) Marking and labeling—49 CFR part 172: subpart D; and §§ 172.400 through 172.407 and §§ 172.436 through 172.441 of subpart E.

(iii) Placarding—49 CFR part 172: subpart F, especially §§ 172.500 through 172.519 and 172.556; and appendices B and C.

(iv) Accident reporting—49 CFR part 171: §§ 171.15 and 171.16.

(v) Shipping papers and emergency information—49 CFR part 172: subparts C and G.

(vi) Hazardous material employee training—49 CFR part 172: subpart H.

(vii) Security plans—49 CFR part 172: subpart I.

(viii) Hazardous material shipper/carrier registration—49 CFR part 107: subpart G.

(2) The licensee shall also note DOT regulations pertaining to the following modes of transportation:

(i) Rail—49 CFR part 174: subparts A through D and K.

(ii) Air—49 CFR part 175.

(iii) Vessel—49 CFR part 176: subparts A through F and M.

(iv) Public Highway—49 CFR part 177 and parts 390 through 397.

(b) If DOT regulations are not applicable to a shipment of licensed material, the licensee shall conform to the standards and requirements of the DOT specified in paragraph (a) of this section to the same extent as if the shipment or transportation were subject to DOT regulations. A request for modification, waiver, or exemption from those requirements, and any notification referred to in those requirements, must be filed with, or made to, the Director, Office of Nuclear Material Safety and Safeguards, U.S. Nuclear Regulatory Commission, Washington, DC 20555–0001.

[69 FR 3786, Jan. 26, 2004; 69 FR 58038, Sept. 29, 2004]

§ 71.6 Information collection requirements: OMB approval.

(a) The Nuclear Regulatory Commission has submitted the information collection requirements contained in this part to the Office of Management and Budget (OMB) for approval as required by the Paperwork Reduction Act (44 U.S.C. 3501 *et seq.*). The NRC may not conduct or sponsor, and a person is not required to respond to, a collection of information unless it displays a currently valid OMB control number. OMB has approved the information collection requirements contained in this part under control number 3150–0008.

(b) The approved information collection requirements contained in this part appear in §§ 71.5, 71.7, 71.9, 71.12, 71.17, 71.19, 71.22, 71.23, 71.31, 71.33, 71.35, 71.37, 71.38, 71.39, 71.41, 71.47, 71.85, 71.87, 71.89, 71.91, 71.93, 71.95, 71.97, 71.101, 71.103, 71.105, 71.106, 71.107, 71.109, 71.111, 71.113, 71.115, 71.117, 71.119, 71.121, 71.123, 71.125, 71.127, 71.129, 71.131, 71.133, 71.135, 71.137, and appendix A, paragraph II.

[69 FR 3786, Jan. 26, 2004, as amended at 75 FR 73945, Nov. 30, 2010; 80 FR 34012, June 12, 2015]

§ 71.7 Completeness and accuracy of information.

(a) Information provided to the Commission by a licensee, certificate holder, or an applicant for a license or CoC; or information required by statute or by the Commission's regulations, orders, license or CoC conditions, to be maintained by the licensee or certificate holder, must be complete and accurate in all material respects.

(b) Each licensee, certificate holder, or applicant for a license or CoC must notify the Commission of information identified by the licensee, certificate holder, or applicant for a license or CoC as having, for the regulated activity, a significant implication for public health and safety or common defense and security. A licensee, certificate holder, or an applicant for a license or

CoC violates this paragraph only if the licensee, certificate holder, or applicant for a license or CoC fails to notify the Commission of information that the licensee, certificate holder, or applicant for a license or CoC has identified as having a significant implication for public health and safety or common defense and security. Notification must be provided to the Administrator of the appropriate Regional Office within 2 working days of identifying the information. This requirement is not applicable to information which is already required to be provided to the Commission by other reporting or updating requirements.

§ 71.8 Deliberate misconduct.

(a) This section applies to any—

(1) Licensee;

(2) Certificate holder;

(3) Quality assurance program approval holder;

(4) Applicant for a license, certificate, or quality assurance program approval;

(5) Contractor (including a supplier or consultant) or subcontractor, to any person identified in paragraph (a)(4) of this section; or

(6) Employees of any person identified in paragraphs (a)(1) through (a)(5) of this section.

(b) A person identified in paragraph (a) of this section who knowingly provides to any entity, listed in paragraphs (a)(1) through (a)(5) of this section, any components, materials, or other goods or services that relate to a licensee's, certificate holder's, quality assurance program approval holder's, or applicant's activities subject to this part may not:

(1) Engage in deliberate misconduct that causes or would have caused, if not detected, a licensee, certificate holder, quality assurance program approval holder, or any applicant to be in violation of any rule, regulation, or order; or any term, condition or limitation of any license, certificate, or approval issued by the Commission; or

(2) Deliberately submit to the NRC, a licensee, a certificate holder, quality assurance program approval holder, an applicant for a license, certificate or quality assurance program approval, or a licensee's, applicant's, certificate holder's, or quality assurance program approval holder's contractor or subcontractor, information that the person submitting the information knows to be incomplete or inaccurate in some respect material to the NRC.

(c) A person who violates paragraph (b)(1) or (b)(2) of this section may be subject to enforcement action in accordance with the procedures in 10 CFR part 2, subpart B.

(d) For the purposes of paragraph (b)(1) of this section, deliberate misconduct by a person means an intentional act or omission that the person knows:

(1) Would cause a licensee, certificate holder, quality assurance program approval holder, or applicant for a license, certificate, or quality assurance program approval to be in violation of any rule, regulation, or order; or any term, condition, or limitation of any license or certificate issued by the Commission; or

(2) Constitutes a violation of a requirement, procedure, instruction, contract, purchase order, or policy of a licensee, certificate holder, quality assurance program approval holder, applicant, or the contractor or subcontractor of any of them.

§ 71.9 Employee protection.

(a) Discrimination by a Commission licensee, certificate holder, an applicant for a Commission license or a CoC, or a contractor or subcontractor of any of these, against an employee for engaging in certain protected activities, is prohibited. Discrimination includes discharge and other actions that relate to compensation, terms, conditions, or privileges of employment. The protected activities are established in section 211 of the Energy Reorganization Act of 1974, as amended, and in general are related to the administration or enforcement of a requirement imposed under the Atomic Energy Act of 1954, as amended, or the Energy Reorganization Act of 1974, as amended.

(1) The protected activities include, but are not limited to:

(i) Providing the Commission or his or her employer information about alleged violations of either of the statutes named in paragraph (a) of this section or possible violations of requirements imposed under either of those statutes;

(ii) Refusing to engage in any practice made unlawful under either of the statutes named in paragraph (a) of this section or under these requirements if the employee has identified the alleged illegality to the employer;

(iii) Requesting the Commission to institute action against his or her employer for the administration or enforcement of these requirements;

(iv) Testifying in any Commission proceeding, or before Congress, or at any Federal or State proceeding regarding any provision (or proposed provision) of either of the statutes named in paragraph (a) of this section; and

(v) Assisting or participating in, or is about to assist or participate in, these activities.

(2) These activities are protected even if no formal proceeding is actually initiated as a result of the employee's assistance or participation.

(3) This section has no application to any employee alleging discrimination prohibited by this section who, acting without direction from his or her employer (or the employer's agent), deliberately causes a violation of any requirement of the Energy Reorganization Act of 1974, as amended, or the Atomic Energy Act of 1954, as amended.

(b) Any employee who believes that he or she has been discharged or otherwise discriminated against by any person for engaging in protected activities specified in paragraph (a)(1) of this section may seek a remedy for the discharge or discrimination through an administrative proceeding in the Department of Labor. The administrative proceeding must be initiated within 180 days after an alleged violation occurs. The employee may do this by filing a complaint alleging the violation with the Department of Labor, Employment Standards Administration, Wage and Hour Division. The Department of Labor may order reinstatement, back pay, and compensatory damages.

(c) A violation of paragraph (a), (e), or (f) of this section by a Commission licensee, certificate holder, applicant for a Commission license or a CoC, or a contractor or subcontractor of any of these may be grounds for:

(1) Denial, revocation, or suspension of the license or the CoC;

(2) Imposition of a civil penalty on the licensee, applicant, or a contractor or subcontractor of the licensee or applicant; or

(3) Other enforcement action.

(d) Actions taken by an employer, or others, which adversely affect an employee may be predicated upon nondiscriminatory grounds. The prohibition applies when the adverse action occurs because the employee has engaged in protected activities. An employee's engagement in protected activities does not automatically render him or her immune from discharge or discipline for legitimate reasons or from adverse action dictated by nonprohibited considerations.

(e)(1) Each licensee, certificate holder, and applicant for a license or CoC must prominently post the current revision of NRC Form 3, ''Notice to Employees,'' referenced in § 19.11(c) of this chapter. This form must be posted at locations sufficient to permit employees protected by this section to observe a copy on the way to or from their place of work. The premises must be posted not later than 30 days after an application is docketed and remain posted while the application is pending before the Commission, during the term of the license or CoC, and for 30 days following license or CoC termination.

(2) Copies of NRC Form 3 may be obtained by writing to the Regional Administrator of the appropriate U.S. Nuclear Regulatory Commission Regional Office listed in Appendix D to Part 20 of this chapter, via email to *Forms.Resource@nrc.gov*, or by visiting the NRC's online library at *http://www.nrc.gov/reading-rm/doc-collections/forms/*.

(f) No agreement affecting the compensation, terms, conditions, or privileges of employment, including an agreement to settle a complaint filed by an employee with the Department of Labor pursuant to section 211 of the

Energy Reorganization Act of 1974, as amended, may contain any provision which would prohibit, restrict, or otherwise discourage an employee from participating in a protected activity as defined in paragraph (a)(1) of this section including, but not limited to, providing information to the NRC or to his or her employer on potential violations or other matters within NRC's regulatory responsibilities.

[69 FR 3786, Jan. 26, 2004, as amended at 72 FR 63975, Nov. 14, 2007; 73 FR 30459, May 28, 2008; 79 FR 66605, Nov. 10, 2014]

§71.10 Public inspection of application.

Applications for approval of a package design under this part, which are submitted to the Commission, may be made available for public inspection, in accordance with provisions of parts 2 and 9 of this chapter. This includes an application to amend or revise an existing package design, any associated documents and drawings submitted with the application, and any responses to NRC requests for additional information.

§71.11 Protection of Safeguards Information.

Each licensee, certificate holder, or applicant for a Certificate of Compliance for a transportation package for transport of irradiated reactor fuel, strategic special nuclear material, a critical mass of special nuclear material, or byproduct material in quantities determined by the Commission through order or regulation to be significant to the public health and safety or the common defense and security, shall protect Safeguards Information against unauthorized disclosure in accordance with the requirements in §73.21 and the requirements of §73.22 or §73.23 of this chapter, as applicable.

[73 FR 63572, Oct. 24, 2008]

Subpart B—Exemptions

SOURCE: 69 FR 3786, Jan. 26, 2004, unless otherwise noted.

§71.12 Specific exemptions.

On application of any interested person or on its own initiative, the Commission may grant any exemption from the requirements of the regulations in this part that it determines is authorized by law and will not endanger life or property nor the common defense and security.

§71.13 Exemption of physicians.

Any physician licensed by a State to dispense drugs in the practice of medicine is exempt from §71.5 with respect to transport by the physician of licensed material for use in the practice of medicine. However, any physician operating under this exemption must be licensed under 10 CFR part 35 or the equivalent Agreement State regulations.

§71.14 Exemption for low-level materials.

(a) A licensee is exempt from all the requirements of this part with respect to shipment or carriage of the following low-level materials:

(1) Natural material and ores containing naturally occurring radionuclides that are either in their natural state, or have only been processed for purposes other than for the extraction of the radionuclides, and which are not intended to be processed for the use of these radionuclides, provided the activity concentration of the material does not exceed 10 times the applicable radionuclide activity concentration values specified in appendix A, Table A–2, or Table A–3 of this part.

(2) Materials for which the activity concentration is not greater than the activity concentration values specified in appendix A, Table A–2, or Table A–3 of this part, or for which the consignment activity is not greater than the limit for an exempt consignment found in appendix A, Table A–2, or Table A–3 of this part.

(3) Non-radioactive solid objects with radioactive substances present on any surfaces in quantities not in excess of the levels cited in the definition of contamination in §71.4.

(b) A licensee is exempt from all the requirements of this part, other than

§§ 71.5 and 71.88, with respect to shipment or carriage of the following packages, provided the packages do not contain any fissile material, or the material is exempt from classification as fissile material under § 71.15:

(1) A package that contains no more than a Type A quantity of radioactive material;

(2) A package transported within the United States that contains no more than 0.74 TBq (20 Ci) of special form plutonium-244; or

(3) The package contains only LSA or SCO radioactive material, provided—

(i) That the LSA or SCO material has an external radiation dose of less than or equal to 10 mSv/h (1 rem/h), at a distance of 3 m from the unshielded material; or

(ii) That the package contains only LSA-I or SCO-I material.

[69 FR 3786, Jan. 26, 2004, as amended at 80 FR 34012, June 12, 2015]

§ 71.15 Exemption from classification as fissile material.

Fissile material meeting the requirements of at least one of the paragraphs (a) through (f) of this section are exempt from classification as fissile material and from the fissile material package standards of §§ 71.55 and 71.59, but are subject to all other requirements of this part, except as noted.

(a) Individual package containing 2 grams or less fissile material.

(b) Individual or bulk packaging containing 15 grams or less of fissile material provided the package has at least 200 grams of solid nonfissile material for every gram of fissile material. Lead, beryllium, graphite, and hydrogenous material enriched in deuterium may be present in the package but must not be included in determining the required mass for solid nonfissile material.

(c)(1) Low concentrations of solid fissile material commingled with solid nonfissile material, provided that:

(i) There is at least 2000 grams of solid nonfissile material for every gram of fissile material, and

(ii) There is no more than 180 grams of fissile material distributed within 360 kg of contiguous nonfissile material.

(2) Lead, beryllium, graphite, and hydrogenous material enriched in deuterium may be present in the package but must not be included in determining the required mass of solid nonfissile material.

(d) Uranium enriched in uranium-235 to a maximum of 1 percent by weight, and with total plutonium and uranium-233 content of up to 1 percent of the mass of uranium-235, provided that the mass of any beryllium, graphite, and hydrogenous material enriched in deuterium constitutes less than 5 percent of the uranium mass, and that the fissile material is distributed homogeneously and does not form a lattice arrangement within the package.

(e) Liquid solutions of uranyl nitrate enriched in uranium-235 to a maximum of 2 percent by mass, with a total plutonium and uranium-233 content not exceeding 0.002 percent of the mass of uranium, and with a minimum nitrogen to uranium atomic ratio (N/U) of 2. The material must be contained in at least a DOT Type A package.

(f) Packages containing, individually, a total plutonium mass of not more than 1000 grams, of which not more than 20 percent by mass may consist of plutonium-239, plutonium-241, or any combination of these radionuclides.

[69 FR 3786, Jan. 26, 2004, as amended at 80 FR 34012, June 12, 2015]

§ 71.16 [Reserved]

Subpart C—General Licenses

SOURCE: 69 FR 3786, Jan. 26, 2004, unless otherwise noted.

§ 71.17 General license: NRC-approved package.

(a) A general license is issued to any licensee of the Commission to transport, or to deliver to a carrier for transport, licensed material in a package for which a license, certificate of compliance (CoC), or other approval has been issued by the NRC.

(b) This general license applies only to a licensee who has a quality assurance program approved by the Commission as satisfying the provisions of subpart H of this part.

(c) Each licensee issued a general license under paragraph (a) of this section shall—

(1) Maintain a copy of the Certificate of Compliance, or other approval of the package, and the drawings and other documents referenced in the approval relating to the use and maintenance of the packaging and to the actions to be taken before shipment;

(2) Comply with the terms and conditions of the license, certificate, or other approval, as applicable, and the applicable requirements of subparts A, G, and H of this part; and

(3) Submit in writing before the first use of the package to: ATTN: Document Control Desk, Director, Division of Fuel Management, Office of Nuclear Material Safety and Safeguards, using an appropriate method listed in § 71.1(a), the licensee's name and license number and the package identification number specified in the package approval.

(d) This general license applies only when the package approval authorizes use of the package under this general license.

(e) For a Type B or fissile material package, the design of which was approved by NRC before April 1, 1996, the general license is subject to the additional restrictions of § 71.19.

[69 FR 3786, Jan. 26, 2004, as amended at 75 FR 73945, Nov. 30, 2010; 79 FR 75741, Dec. 19, 2014; 80 FR 34012, June 12, 2015; 84 FR 65645, Nov. 29, 2019]

§ 71.18 [Reserved]

§ 71.19 Previously approved package.

(a) A Type B(U) package, a Type B(M) package, or a fissile material package, previously approved by the NRC but without the designation ''-85'' in the identification number of the NRC CoC, may be used under the general license of § 71.17 with the following additional conditions:

(1) Fabrication of the package is satisfactorily completed by April 1, 1999, as demonstrated by application of its model number in accordance with § 71.85(c);

(2) A package used for a shipment to a location outside the United States is subject to multilateral approval as defined in DOT regulations at 49 CFR 173.403; and

(3) A serial number which uniquely identifies each packaging which conforms to the approved design is assigned to and legibly and durably marked on the outside of each packaging.

(b) A Type B(U) package, a Type B(M) package, or a fissile material package previously approved by the NRC with the designation ''-85'' in the identification number of the NRC CoC, may be used under the general license of § 71.17 with the following additional conditions:

(1) Fabrication of the package must be satisfactorily completed by December 31, 2006, as demonstrated by application of its model number in accordance with § 71.85(c); and

(2) A package used for a shipment to a location outside the United States is subject to multilateral approval as defined in the DOT's regulations at 49 CFR 173.403.

(c) NRC will approve modifications to the design and authorized contents of a Type B package, or a fissile material package, previously approved by NRC, provided—

(1) The modifications of a Type B package are not significant with respect to the design, operating characteristics, or safe performance of the containment system, when the package is subjected to the tests specified in §§ 71.71 and 71.73;

(2) The modifications of a fissile material package are not significant, with respect to the prevention of criticality, when the package is subjected to the tests specified in §§ 71.71 and 71.73; and

(3) The modifications to the package satisfy the requirements of this part.

(d) NRC will revise the package identification number to designate previously approved package designs as B, BF, AF, B(U), B(M), B(U)F, B(M)F, B(U)-85, B(U)F–85, B(M)-85, B(M)F–85, or AF–85 as appropriate, and with the identification number suffix ''-96'' after receipt of an application demonstrating that the design meets the requirements of this part.

[69 FR 3786, Jan. 26, 2004; 69 FR 6139, Feb. 10, 2004, as amended at 80 FR 34012, June 12, 2015]

§ 71.21 General license: Use of foreign approved package.

(a) A general license is issued to any licensee of the Commission to transport, or to deliver to a carrier for transport, licensed material in a package, the design of which has been approved in a foreign national competent authority certificate, that has been revalidated by the DOT as meeting the applicable requirements of 49 CFR 171.23.

(b) Except as otherwise provided in this section, the general license applies only to a licensee who has a quality assurance program approved by the Commission as satisfying the applicable provisions of subpart H of this part.

(c) This general license applies only to shipments made to or from locations outside the United States.

(d) Each licensee issued a general license under paragraph (a) of this section shall—

(1) Maintain a copy of the applicable certificate, the revalidation, and the drawings and other documents referenced in the certificate, relating to the use and maintenance of the packaging and to the actions to be taken before shipment; and

(2) Comply with the terms and conditions of the certificate and revalidation, and with the applicable requirements of subparts A, G, and H of this part.

[69 FR 3786, Jan. 26, 2004, as amended at 80 FR 34012, June 12, 2015]

§ 71.22 General license: Fissile material.

(a) A general license is issued to any licensee of the Commission to transport fissile material, or to deliver fissile material to a carrier for transport, if the material is shipped in accordance with this section. The fissile material need not be contained in a package which meets the standards of subparts E and F of this part; however, the material must be contained in a Type A package. The Type A package must also meet the DOT requirements of 49 CFR 173.417(a).

(b) The general license applies only to a licensee who has a quality assurance program approved by the Commission as satisfying the provisions of subpart H of this part.

(c) The general license applies only when a package's contents:

(1) Contain no more than a Type A quantity of radioactive material; and

(2) Contain less than 500 total grams of beryllium, graphite, or hydrogenous material enriched in deuterium.

(d) The general license applies only to packages containing fissile material that are labeled with a CSI which:

(1) Has been determined in accordance with paragraph (e) of this section;

(2) Has a value less than or equal to 10; and

(3) For a shipment of multiple packages containing fissile material, the sum of the CSIs must be less than or equal to 50 (for shipment on a non-exclusive use conveyance) and less than or equal to 100 (for shipment on an exclusive use conveyance).

(e)(1) The value for the CSI must be greater than or equal to the number calculated by the following equation:

$$\mathrm{CSI} = 10\left[\frac{\text{grams of } {}^{235}\mathrm{U}}{\mathrm{X}} + \frac{\text{grams of } {}^{233}\mathrm{U}}{\mathrm{Y}} + \frac{\text{grams of Pu}}{\mathrm{Z}}\right];$$

(2) The calculated CSI must be rounded up to the first decimal place;

(3) The values of X, Y, and Z used in the CSI equation must be taken from Tables 71–1 or 71–2, as appropriate;

(4) If Table 71–2 is used to obtain the value of X, then the values for the terms in the equation for uranium-233 and plutonium must be assumed to be zero; and

(5) Table 71–1 values for X, Y, and Z must be used to determine the CSI if:

(i) Uranium-233 is present in the package;

(ii) The mass of plutonium exceeds 1 percent of the mass of uranium-235;

(iii) The uranium is of unknown uranium-235 enrichment or greater than 24 weight percent enrichment; or

(iv) Substances having a moderating effectiveness (*i.e.*, an average hydrogen density greater than H_2O) (e.g., certain hydrocarbon oils or plastics) are present in any form, except as polyethylene used for packing or wrapping.

TABLE 71–1—MASS LIMITS FOR GENERAL LICENSE PACKAGES CONTAINING MIXED QUANTITIES OF FISSILE MATERIAL OR URANIUM-235 OF UNKNOWN ENRICHMENT PER §71.22(e)

Fissile material	Fissile material mass mixed with moderating substances having an average hydrogen density less than or equal to H_2O (grams)	Fissile material mass mixed with moderating substances having an average hydrogen density greater than H_2O[a] (grams)
^{235}U (X)	60	38
^{233}U (Y)	43	27
^{239}Pu or ^{241}Pu (Z)	37	24

[a] When mixtures of moderating substances are present, the lower mass limits shall be used if more than 15 percent of the moderating substance has an average hydrogen density greater than H_2O.

TABLE 71–2—MASS LIMITS FOR GENERAL LICENSE PACKAGES CONTAINING URANIUM-235 OF KNOWN ENRICHMENT PER §71.22(e)

Uranium enrichment in weight percent of ^{235}U not exceeding	Fissile material mass of ^{235}U (X) (grams)
24	60
20	63
15	67
11	72
10	76
9.5	78
9	81
8.5	82
8	85
7.5	88
7	90
6.5	93
6	97
5.5	102
5	108
4.5	114
4	120
3.5	132
3	150
2.5	180
2	246
1.5	408
1.35	480
1	1,020
0.92	1,800

[69 FR 3786, Jan. 26, 2004; 69 FR 58038, Sept. 29, 2004]

§71.23 General license: Plutonium-beryllium special form material.

(a) A general license is issued to any licensee of the Commission to transport fissile material in the form of plutonium-beryllium (Pu-Be) special form sealed sources, or to deliver Pu-Be sealed sources to a carrier for transport, if the material is shipped in accordance with this section. This material need not be contained in a package which meets the standards of subparts E and F of this part; however, the material must be contained in a Type A package. The Type A package must also meet the DOT requirements of 49 CFR 173.417(a).

(b) The general license applies only to a licensee who has a quality assurance program approved by the Commission as satisfying the provisions of subpart H of this part.

(c) The general license applies only when a package's contents:

(1) Contain no more than a Type A quantity of radioactive material; and

(2) Contain less than 1000 g of plutonium, provided that: plutonium-239, plutonium-241, or any combination of these radionuclides, constitutes less than 240 g of the total quantity of plutonium in the package.

(d) The general license applies only to packages labeled with a CSI which:

(1) Has been determined in accordance with paragraph (e) of this section;

(2) Has a value less than or equal to 100; and

(3) For a shipment of multiple packages containing Pu-Be sealed sources, the sum of the CSIs must be less than or equal to 50 (for shipment on a non-exclusive use conveyance) and less than or equal to 100 (for shipment on an exclusive use conveyance).

(e)(1) The value for the CSI must be greater than or equal to the number calculated by the following equation:

$$\mathrm{CSI} = 10\left[\frac{\text{grams of } {}^{239}\mathrm{Pu} + \text{grams of } {}^{241}\mathrm{Pu}}{24}\right]; \text{ and}$$

(2) The calculated CSI must be rounded up to the first decimal place.

[69 FR 3786, Jan. 26, 2004; 69 FR 58038, Sept. 29, 2004]

§§ 71.24–71.25 [Reserved]

Subpart D—Application for Package Approval

§ 71.31 Contents of application.

(a) An application for an approval under this part must include, for each proposed packaging design, the following information:

(1) A package description as required by § 71.33;

(2) A package evaluation as required by § 71.35; and

(3) A quality assurance program description, as required by § 71.37, or a reference to a previously approved quality assurance program.

(b) Except as provided in § 71.19, an application for modification of a package design, whether for modification of the packaging or authorized contents, must include sufficient information to demonstrate that the proposed design satisfies the package standards in effect at the time the application is filed.

(c) The applicant shall identify any established codes and standards proposed for use in package design, fabrication, assembly, testing, maintenance, and use. In the absence of any codes and standards, the applicant shall describe and justify the basis and rationale used to formulate the package quality assurance program.

[60 FR 50264, Sept. 28, 1995, as amended at 80 FR 34012, June 12, 2015]

§ 71.33 Package description.

The application must include a description of the proposed package in sufficient detail to identify the package accurately and provide a sufficient basis for evaluation of the package. The description must include—

(a) With respect to the packaging—

(1) Classification as Type B(U), Type B(M), or fissile material packaging;

(2) Gross weight;

(3) Model number;

(4) Identification of the containment system;

(5) Specific materials of construction, weights, dimensions, and fabrication methods of—

(i) Receptacles;

(ii) Materials specifically used as nonfissile neutron absorbers or moderators;

(iii) Internal and external structures supporting or protecting receptacles;

(iv) Valves, sampling ports, lifting devices, and tie-down devices; and

(v) Structural and mechanical means for the transfer and dissipation of heat; and

(6) Identification and volumes of any receptacles containing coolant.

(b) With respect to the contents of the package—

(1) Identification and maximum radioactivity of radioactive constituents;

(2) Identification and maximum quantities of fissile constituents;

(3) Chemical and physical form;

(4) Extent of reflection, the amount and identity of nonfissile materials used as neutron absorbers or moderators, and the atomic ratio of moderator to fissile constituents;

(5) Maximum normal operating pressure;

(6) Maximum weight;

(7) Maximum amount of decay heat; and

(8) Identification and volumes of any coolants.

§ 71.35 Package evaluation.

The application must include the following:

(a) A demonstration that the package satisfies the standards specified in subparts E and F of this part;

(b) For a fissile material package, the allowable number of packages that may be transported in the same vehicle in accordance with § 71.59; and

(c) For a fissile material shipment, any proposed special controls and precautions for transport, loading, unloading, and handling and any proposed special controls in case of an accident or delay.

§71.37 Quality assurance.

(a) The applicant shall describe the quality assurance program (see Subpart H of this part) for the design, fabrication, assembly, testing, maintenance, repair, modification, and use of the proposed package.

(b) The applicant shall identify any specific provisions of the quality assurance program that are applicable to the particular package design under consideration, including a description of the leak testing procedures.

§71.38 Renewal of a certificate of compliance.

(a) Except as provided in paragraph (b) of this section, each Certificate of Compliance expires at the end of the day, in the month and year stated in the approval.

(b) In any case in which a person, not less than 30 days before the expiration of an existing Certificate of Compliance issued pursuant to the part, has filed an application in proper form for renewal, the existing Certificate of Compliance for which the renewal application was filed shall not be deemed to have expired until final action on the application for renewal has been taken by the Commission.

(c) In applying for renewal of an existing Certificate of Compliance, an applicant may be required to submit a consolidated application that is comprised of as few documents as possible. The consolidated application should incorporate all changes to its certificate, including changes that are incorporated by reference in the existing certificate.

[80 FR 34012, June 12, 2015]

§71.39 Requirement for additional information.

The Commission may at any time require additional information in order to enable it to determine whether a license, certificate of compliance, or other approval should be granted, renewed, denied, modified, suspended, or revoked.

Subpart E—Package Approval Standards

§71.41 Demonstration of compliance.

(a) The effects on a package of the tests specified in §71.71 (''Normal conditions of transport''), and the tests specified in §71.73 (''Hypothetical accident conditions''), and §71.61 (''Special requirements for Type B packages containing more than 10^5 A_2''), must be evaluated by subjecting a specimen or scale model to a specific test, or by another method of demonstration acceptable to the Commission, as appropriate for the particular feature being considered.

(b) Taking into account the type of vehicle, the method of securing or attaching the package, and the controls to be exercised by the shipper, the Commission may permit the shipment to be evaluated together with the transporting vehicle.

(c) Environmental and test conditions different from those specified in §§71.71 and 71.73 may be approved by the Commission if the controls proposed to be exercised by the shipper are demonstrated to be adequate to provide equivalent safety of the shipment.

(d) Packages for which compliance with the other provisions of these regulations is impracticable shall not be transported except under special package authorization. Provided the applicant demonstrates that compliance with the other provisions of the regulations is impracticable and that the requisite standards of safety established by these regulations have been demonstrated through means alternative to the other provisions, a special package authorization may be approved for one-time shipments. The applicant shall demonstrate that the overall level of safety in transport for these shipments is at least equivalent to that which would be provided if all the applicable requirements had been met.

[60 FR 50264, Sept. 28, 1995, as amended at 69 FR 3794, Jan. 26, 2004; 69 FR 58039, Sept. 29, 2004]

§ 71.43 General standards for all packages.

(a) The smallest overall dimension of a package may not be less than 10 cm (4 in).

(b) The outside of a package must incorporate a feature, such as a seal, that is not readily breakable and that, while intact, would be evidence that the package has not been opened by unauthorized persons.

(c) Each package must include a containment system securely closed by a positive fastening device that cannot be opened unintentionally or by a pressure that may arise within the package.

(d) A package must be made of materials and construction that assure that there will be no significant chemical, galvanic, or other reaction among the packaging components, among package contents, or between the packaging components and the package contents, including possible reaction resulting from inleakage of water, to the maximum credible extent. Account must be taken of the behavior of materials under irradiation.

(e) A package valve or other device, the failure of which would allow radioactive contents to escape, must be protected against unauthorized operation and, except for a pressure relief device, must be provided with an enclosure to retain any leakage.

(f) A package must be designed, constructed, and prepared for shipment so that under the tests specified in § 71.71 (''Normal conditions of transport'') there would be no loss or dispersal of radioactive contents, no significant increase in external surface radiation levels, and no substantial reduction in the effectiveness of the packaging.

(g) A package must be designed, constructed, and prepared for transport so that in still air at 38 °C (100 °F) and in the shade, no accessible surface of a package would have a temperature exceeding 50 °C (122 °F) in a nonexclusive use shipment, or 85 °C (185 °F) in an exclusive use shipment.

(h) A package may not incorporate a feature intended to allow continuous venting during transport.

§ 71.45 Lifting and tie-down standards for all packages.

(a) Any lifting attachment that is a structural part of a package must be designed with a minimum safety factor of three against yielding when used to lift the package in the intended manner, and it must be designed so that failure of any lifting device under excessive load would not impair the ability of the package to meet other requirements of this subpart. Any other structural part of the package that could be used to lift the package must be capable of being rendered inoperable for lifting the package during transport, or must be designed with strength equivalent to that required for lifting attachments.

(b) Tie-down devices:

(1) If there is a system of tie-down devices that is a structural part of the package, the system must be capable of withstanding, without generating stress in any material of the package in excess of its yield strength, a static force applied to the center of gravity of the package having a vertical component of 2 times the weight of the package with its contents, a horizontal component along the direction in which the vehicle travels of 10 times the weight of the package with its contents, and a horizontal component in the transverse direction of 5 times the weight of the package with its contents.

(2) Any other structural part of the package that could be used to tie down the package must be capable of being rendered inoperable for tying down the package during transport, or must be designed with strength equivalent to that required for tie-down devices.

(3) Each tie-down device that is a structural part of a package must be designed so that failure of the device under excessive load would not impair the ability of the package to meet other requirements of this part.

§ 71.47 External radiation standards for all packages.

(a) Except as provided in paragraph (b) of this section, each package of radioactive materials offered for transportation must be designed and prepared for shipment so that under conditions normally incident to transportation the radiation level does not exceed 2 mSv/h (200 mrem/h) at any point on the external surface of the package, and the transport index does not exceed 10.

(b) A package that exceeds the radiation level limits specified in paragraph (a) of this section must be transported by exclusive use shipment only, and the radiation levels for such shipment must not exceed the following during transportation:

(1) 2 mSv/h (200 mrem/h) on the external surface of the package, unless the following conditions are met, in which case the limit is 10 mSv/h (1000 mrem/h):

(i) The shipment is made in a closed transport vehicle;

(ii) The package is secured within the vehicle so that its position remains fixed during transportation; and

(iii) There are no loading or unloading operations between the beginning and end of the transportation;

(2) 2 mSv/h (200 mrem/h) at any point on the outer surface of the vehicle, including the top and underside of the vehicle; or in the case of a flat-bed style vehicle, at any point on the vertical planes projected from the outer edges of the vehicle, on the upper surface of the load or enclosure, if used, and on the lower external surface of the vehicle; and

(3) 0.1 mSv/h (10 mrem/h) at any point 2 meters (80 in) from the outer lateral surfaces of the vehicle (excluding the top and underside of the vehicle); or in the case of a flat-bed style vehicle, at any point 2 meters (6.6 feet) from the vertical planes projected by the outer edges of the vehicle (excluding the top and underside of the vehicle); and

(4) 0.02 mSv/h (2 mrem/h) in any normally occupied space, except that this provision does not apply to private carriers, if exposed personnel under their control wear radiation dosimetry devices in conformance with 10 CFR 20.1502.

(c) For shipments made under the provisions of paragraph (b) of this section, the shipper shall provide specific written instructions to the carrier for maintenance of the exclusive use shipment controls. The instructions must be included with the shipping paper information.

(d) The written instructions required for exclusive use shipments must be sufficient so that, when followed, they will cause the carrier to avoid actions that will unnecessarily delay delivery or unnecessarily result in increased radiation levels or radiation exposures to transport workers or members of the general public.

§ 71.51 Additional requirements for Type B packages.

(a) A Type B package, in addition to satisfying the requirements of §§ 71.41 through 71.47, must be designed, constructed, and prepared for shipment so that under the tests specified in:

(1) Section 71.71 (''Normal conditions of transport''), there would be no loss or dispersal of radioactive contents—as demonstrated to a sensitivity of 10^{-6} A_2 per hour, no significant increase in external surface radiation levels, and no substantial reduction in the effectiveness of the packaging; and

(2) Section 71.73 (''Hypothetical accident conditions''), there would be no escape of krypton-85 exceeding 10 A_2 in 1 week, no escape of other radioactive material exceeding a total amount A_2 in 1 week, and no external radiation dose rate exceeding 10 mSv/h (1 rem/h) at 1 m (40 in) from the external surface of the package.

(b) Where mixtures of different radionuclides are present, the provisions of appendix A, paragraph IV of this part shall apply, except that for Krypton-85, an effective A_2 value equal to 10 A_2 may be used.

(c) Compliance with the permitted activity release limits of paragraph (a) of this section may not depend on filters or on a mechanical cooling system.

(d) For packages which contain radioactive contents with activity greater than 10^5 A_2, the requirements of § 71.61 must be met.

[60 FR 50264, Sept. 28, 1995, as amended at 69 FR 3794, Jan. 26, 2004; 69 FR 58039, Sept. 29, 2004]

§ 71.53 [Reserved]

§ 71.55 General requirements for fissile material packages.

(a) A package used for the shipment of fissile material must be designed and constructed in accordance with §§ 71.41 through 71.47. When required by the total amount of radioactive material, a package used for the shipment of fissile material must also be designed and constructed in accordance with § 71.51.

(b) Except as provided in paragraph (c) or (g) of this section, a package used for the shipment of fissile material must be so designed and constructed and its contents so limited that it would be subcritical if water were to leak into the containment system, or liquid contents were to leak out of the containment system so that, under the following conditions, maximum reactivity of the fissile material would be attained:

(1) The most reactive credible configuration consistent with the chemical and physical form of the material;

(2) Moderation by water to the most reactive credible extent; and

(3) Close full reflection of the containment system by water on all sides, or such greater reflection of the containment system as may additionally be provided by the surrounding material of the packaging.

(c) The Commission may approve exceptions to the requirements of paragraph (b) of this section if the package incorporates special design features that ensure that no single packaging error would permit leakage, and if appropriate measures are taken before each shipment to ensure that the containment system does not leak.

(d) A package used for the shipment of fissile material must be so designed and constructed and its contents so limited that under the tests specified in § 71.71 (''Normal conditions of transport'')—

(1) The contents would be subcritical;

(2) The geometric form of the package contents would not be substantially altered;

(3) There would be no leakage of water into the containment system unless, in the evaluation of undamaged packages under § 71.59(a)(1), it has been assumed that moderation is present to such an extent as to cause maximum reactivity consistent with the chemical and physical form of the material; and

(4) There will be no substantial reduction in the effectiveness of the packaging, including:

(i) No more than 5 percent reduction in the total effective volume of the packaging on which nuclear safety is assessed;

(ii) No more than 5 percent reduction in the effective spacing between the fissile contents and the outer surface of the packaging; and

(iii) No occurrence of an aperture in the outer surface of the packaging large enough to permit the entry of a 10 cm (4 in) cube.

(e) A package used for the shipment of fissile material must be so designed and constructed and its contents so limited that under the tests specified in § 71.73 (''Hypothetical accident conditions''), the package would be subcritical. For this determination, it must be assumed that:

(1) The fissile material is in the most reactive credible configuration consistent with the damaged condition of the package and the chemical and physical form of the contents;

(2) Water moderation occurs to the most reactive credible extent consistent with the damaged condition of the package and the chemical and physical form of the contents; and

(3) There is full reflection by water on all sides, as close as is consistent with the damaged condition of the package.

(f) For fissile material package designs to be transported by air:

(1) The package must be designed and constructed, and its contents limited so that it would be subcritical, assuming reflection by 20 cm (7.9 in) of water but no water inleakage, when subjected to sequential application of:

(i) The free drop test in § 71.73(c)(1);

(ii) The crush test in § 71.73(c)(2);

(iii) A puncture test, for packages of 250 kg or more, consisting of a free drop of the specimen through a distance of 3 m (120 in) in a position for which maximum damage is expected at the conclusion of the test sequence, onto the upper end of a solid, vertical, cylindrical, mild steel probe mounted on an essentially unyielding, horizontal surface. The probe must be 20 cm (7.9 in) in diameter, with the striking end forming the frustum of a right circular cone with the dimensions of 30 cm height, 2.5 cm top diameter, and a top edge rounded to a radius of not more than 6 mm (0.25 in). For packages less than 250 kg, the puncture test must be the same, except that a 250 kg probe must be dropped onto the specimen which must be placed on the surface; and

(iv) The thermal test in § 71.73(c)(4), except that the duration of the test must be 60 minutes.

(2) The package must be designed and constructed, and its contents limited, so that it would be subcritical, assuming reflection by 20 cm (7.9 in) of water but no water inleakage, when subjected to an impact on an unyielding surface at a velocity of 90 m/s normal to the surface, at such orientation so as to result in maximum damage. A separate, undamaged specimen can be used for this evaluation.

(3) Allowance may not be made for the special design features in paragraph (c) of this section, unless water leakage into or out of void spaces is prevented following application of the tests in paragraphs (f)(1) and (f)(2) of this section, and subsequent application of the immersion test in § 71.73(c)(5).

(g) Packages containing uranium hexafluoride only are excepted from the requirements of paragraph (b) of this section provided that:

(1) Following the tests specified in § 71.73 (''Hypothetical accident conditions''), there is no physical contact between the valve body and any other component of the packaging, other than at its original point of attachment, and the valve remains leak tight;

(2) There is an adequate quality control in the manufacture, maintenance, and repair of packagings;

(3) Each package is tested to demonstrate closure before each shipment; and

(4) The uranium is enriched to not more than 5 weight percent uranium-235.

[60 FR 50264, Sept. 28, 1995; 61 FR 28724, June 6, 1996, as amended at 69 FR 3794, Jan. 26, 2004]

§ 71.57 [Reserved]

§ 71.59 Standards for arrays of fissile material packages.

(a) A fissile material package must be controlled by either the shipper or the carrier during transport to assure that an array of such packages remains subcritical. To enable this control, the designer of a fissile material package shall derive a number ''N'' based on all the following conditions being satisfied, assuming packages are stacked together in any arrangement and with close full reflection on all sides of the stack by water:

(1) Five times ''N'' undamaged packages with nothing between the packages would be subcritical;

(2) Two times ''N'' damaged packages, if each package were subjected to the tests specified in § 71.73 (''Hypothetical accident conditions'') would be subcritical with optimum interspersed hydrogenous moderation; and

(3) The value of ''N'' cannot be less than 0.5.

(b) The CSI must be determined by dividing the number 50 by the value of ''N'' derived using the procedures specified in paragraph (a) of this section. The value of the CSI may be zero provided that an unlimited number of packages are subcritical, such that the value of ''N'' is effectively equal to infinity under the procedures specified in paragraph (a) of this section. Any CSI greater than zero must be rounded up to the first decimal place.

(c) For a fissile material package which is assigned a CSI value—

(1) Less than or equal to 50, that package may be shipped by a carrier in a nonexclusive use conveyance, provided the sum of the CSIs is limited to less than or equal to 50.

(2) Less than or equal to 50, that package may be shipped by a carrier in an exclusive use conveyance, provided the sum of the CSIs is limited to less than or equal to 100.

(3) Greater than 50, that package must be shipped by a carrier in an exclusive use conveyance, provided the sum of the CSIs is limited to less than or equal to 100.

[60 FR 50264, Sept. 28, 1995, as amended at 69 FR 3795, Jan. 26, 2004]

§ 71.61 Special requirements for Type B packages containing more than $10^5 A_2$.

A Type B package containing more than $10^5 A_2$ must be designed so that its undamaged containment system can withstand an external water pressure of 2 MPa (290 psi) for a period of not less than 1 hour without collapse, buckling, or inleakage of water.

[69 FR 3795, Jan. 26, 2004]

§ 71.63 Special requirement for plutonium shipments.

Shipments containing plutonium must be made with the contents in solid form, if the contents contain greater than 0.74 TBq (20 Ci) of plutonium.

[69 FR 3795, Jan. 26, 2004]

§ 71.64 Special requirements for plutonium air shipments.

(a) A package for the shipment of plutonium by air subject to § 71.88(a)(4), in addition to satisfying the requirements of §§ 71.41 through 71.63, as applicable, must be designed, constructed, and prepared for shipment so that under the tests specified in—

(1) Section 71.74 (''Accident conditions for air transport of plutonium'')—

(i) The containment vessel would not be ruptured in its post-tested condition, and the package must provide a sufficient degree of containment to restrict accumulated loss of plutonium contents to not more than an A_2 quantity in a period of 1 week;

(ii) The external radiation level would not exceed 10 mSv/h (1 rem/h) at a distance of 1 m (40 in) from the surface of the package in its post-tested condition in air; and

(iii) A single package and an array of packages are demonstrated to be subcritical in accordance with this part, except that the damaged condition of the package must be considered to be that which results from the plutonium accident tests in § 71.74, rather than the hypothetical accident tests in § 71.73; and

(2) Section 71.74(c), there would be no detectable leakage of water into the containment vessel of the package.

(b) With respect to the package requirements of paragraph (a), there must be a demonstration or analytical assessment showing that—

(1) The results of the physical testing for package qualification would not be adversely affected to a significant extent by—

(i) The presence, during the tests, of the actual contents that will be transported in the package; and

(ii) Ambient water temperatures ranging from 0.6 °C (+ 33 °F) to 38 °C (+ 100 °F) for those qualification tests involving water, and ambient atmospheric temperatures ranging from −40 °C (−40 °F) to + 54 °C (+ 130°F) for the other qualification tests.

(2) The ability of the package to meet the acceptance standards prescribed for the accident condition sequential tests would not be adversely affected if one or more tests in the sequence were deleted.

§ 71.65 Additional requirements.

The Commission may, by rule, regulation, or order, impose requirements on any licensee, in addition to those established in this part, as it deems necessary or appropriate to protect public health or to minimize danger to life or property.

Subpart F—Package, Special Form, and LSA-III Tests [2]

§ 71.70 Incorporations by reference.

(a) The materials listed in this section are incorporated by reference in the corresponding sections noted and made a part of the regulations in part 71. These incorporations by reference

[2] The package standards related to the tests in this subpart are contained in subpart E of this part.

were approved by the Director of the Federal Register under 5 U.S.C. 552(a) and 1 CFR part 51. These materials are incorporated as they exist on the date of the approval. A notice of any changes made to the material incorporated by reference will be published in the FEDERAL REGISTER, and the material must be available to the public. The materials can be examined, by appointment, at the NRC's Technical Library, which is located at Two White Flint North, 11545 Rockville Pike, Rockville, Maryland 20852; telephone: 301–415–7000; email: *Library.Resource@nrc.gov*. The materials are also available from the sources listed below. All approved material is available for inspection at the National Archives and Records Administration (NARA). For information on the availability of this material at NARA, call 1–202–741–6030 or go to *http://www.archives.gov/federal-register/cfr/ibr-locations.html*.

(b) International Organization for Standardization, ISO Central Secretariat, Chemin de Blandonnet 8 CP 401, 1214 Vernier, Geneva, Switzerland; email: *central@iso.org;* phone: + 41 22 749 01 11; Web site: *http://www.iso.org*.

(1) ISO 9978:1992(E), ''Radiation protection—Sealed radioactive sources—Leakage test methods,'' First Edition (February 15, 1992), incorporation by reference approved for §71.75(a), is available for purchase from the American National Standards Institute, 25 West 43rd Street, 4th Floor, New York, NY 10036, 212–642–4900, *http://www.ansi.org*, or *info@ansi.org*.

(2) ISO 2919:1999(E), ''Radiation protection—Sealed radioactive sources—General requirements and classification,'' Second Edition (February 15, 1999), incorporation by reference approved for §71.75(d), is available on *http://www.amazon.com*.

[80 FR 34013, June 12, 2015, as amended at 80 FR 48684, Aug. 14, 2015]

§71.71 Normal conditions of transport.

(a) *Evaluation*. Evaluation of each package design under normal conditions of transport must include a determination of the effect on that design of the conditions and tests specified in this section. Separate specimens may be used for the free drop test, the compression test, and the penetration test, if each specimen is subjected to the water spray test before being subjected to any of the other tests.

(b) *Initial conditions*. With respect to the initial conditions for the tests in this section, the demonstration of compliance with the requirements of this part must be based on the ambient temperature preceding and following the tests remaining constant at that value between −29 °C (−20 °F) and + 38 °C (+ 100 °F) which is most unfavorable for the feature under consideration. The initial internal pressure within the containment system must be considered to be the maximum normal operating pressure, unless a lower internal pressure consistent with the ambient temperature considered to precede and follow the tests is more unfavorable.

(c) *Conditions and tests*—(1) *Heat*. An ambient temperature of 38 °C (100 °F) in still air, and insolation according to the following table:

INSOLATION DATA

Form and location of surface	Total insolation for a 12-hour period (g cal/cm²)
Flat surfaces transported horizontally:	
Base	None
Other surfaces	800
Flat surfaces not transported horizontally	200
Curved surfaces	400

(2) *Cold*. An ambient temperature of −40 °C (−40 °F) in still air and shade.

(3) *Reduced external pressure*. An external pressure of 25 kPa (3.5 lbf/in²) absolute.

(4) *Increased external pressure*. An external pressure of 140 kPa (20 lbf/in²) absolute.

(5) *Vibration*. Vibration normally incident to transport.

(6) *Water spray*. A water spray that simulates exposure to rainfall of approximately 5 cm/h (2 in/h) for at least 1 hour.

(7) *Free drop*. Between 1.5 and 2.5 hours after the conclusion of the water spray test, a free drop through the distance specified below onto a flat, essentially unyielding, horizontal surface, striking the surface in a position for which maximum damage is expected.

CRITERIA FOR FREE DROP TEST (WEIGHT/DISTANCE)

Package weight		Free drop distance	
Kilograms	(Pounds)	Meters	(Feet)
Less than 5,000	(Less than 11,000)	1.2	(4)
5,000 to 10,000	(11,000 to 22,000)	0.9	(3)
10,000 to 15,000 ...	(22,000 to 33,100)	0.6	(2)
More than 15,000 ..	(More than 33,100)	0.3	(1)

(8) *Corner drop.* A free drop onto each corner of the package in succession, or in the case of a cylindrical package onto each quarter of each rim, from a height of 0.3 m (1 ft) onto a flat, essentially unyielding, horizontal surface. This test applies only to fiberboard, wood, or fissile material rectangular packages not exceeding 50 kg (110 lbs) and fiberboard, wood, or fissile material cylindrical packages not exceeding 100 kg (220 lbs).

(9) *Compression.* For packages weighing up to 5000 kg (11,000 lbs), the package must be subjected, for a period of 24 hours, to a compressive load applied uniformly to the top and bottom of the package in the position in which the package would normally be transported. The compressive load must be the greater of the following:

(i) The equivalent of 5 times the weight of the package; or

(ii) The equivalent of 13 kPa (2 lbf/in^2) multiplied by the vertically projected area of the package.

(10) *Penetration.* Impact of the hemispherical end of a vertical steel cylinder of 3.2 cm (1.25 in) diameter and 6 kg (13 lbs) mass, dropped from a height of 1 m (40 in) onto the exposed surface of the package that is expected to be most vulnerable to puncture. The long axis of the cylinder must be perpendicular to the package surface.

[60 FR 50264, Sept. 28, 1995, as amended at 81 FR 86910, Dec. 2, 2016]

§ 71.73 Hypothetical accident conditions.

(a) *Test procedures.* Evaluation for hypothetical accident conditions is to be based on sequential application of the tests specified in this section, in the order indicated, to determine their cumulative effect on a package or array of packages. An undamaged specimen may be used for the water immersion tests specified in paragraph (c)(6) of this section.

(b) *Test conditions.* With respect to the initial conditions for the tests, except for the water immersion tests, to demonstrate compliance with the requirements of this part during testing, the ambient air temperature before and after the tests must remain constant at that value between −29 °C (−20 °F) and + 38 °C (+ 100 °F) which is most unfavorable for the feature under consideration. The initial internal pressure within the containment system must be the maximum normal operating pressure, unless a lower internal pressure, consistent with the ambient temperature assumed to precede and follow the tests, is more unfavorable.

(c) *Tests.* Tests for hypothetical accident conditions must be conducted as follows:

(1) *Free drop.* A free drop of the specimen through a distance of 9 m (30 ft) onto a flat, essentially unyielding, horizontal surface, striking the surface in a position for which maximum damage is expected.

(2) *Crush.* Subjection of the specimen to a dynamic crush test by positioning the specimen on a flat, essentially unyielding horizontal surface so as to suffer maximum damage by the drop of a 500-kg (1100-lb) mass from 9 m (30 ft) onto the specimen. The mass must consist of a solid mild steel plate 1 m (40 in) by 1 m (40 in) and must fall in a horizontal attitude. The crush test is required only when the specimen has a mass not greater than 500 kg (1100 lb), an overall density not greater than 1000 kg/m^3 (62.4 lb/ft^3) based on external dimension, and radioactive contents greater than 1000 A_2 not as special form radioactive material. For packages containing fissile material, the radioactive contents greater than 1000 A_2 criterion does not apply.

(3) *Puncture.* A free drop of the specimen through a distance of 1 m (40 in) in a position for which maximum damage is expected, onto the upper end of a solid, vertical, cylindrical, mild steel bar mounted on an essentially unyielding, horizontal surface. The bar must be 15 cm (6 in) in diameter, with the top horizontal and its edge rounded to a radius of not more than 6 mm (0.25

in), and of a length as to cause maximum damage to the package, but not less than 20 cm (8 in) long. The long axis of the bar must be vertical.

(4) *Thermal*. Exposure of the specimen fully engulfed, except for a simple support system, in a hydrocarbon fuel/air fire of sufficient extent, and in sufficiently quiescent ambient conditions, to provide an average emissivity coefficient of at least 0.9, with an average flame temperature of at least 800 °C (1475 °F) for a period of 30 minutes, or any other thermal test that provides the equivalent total heat input to the package and which provides a time averaged environmental temperature of 800 °C. The fuel source must extend horizontally at least 1 m (40 in), but may not extend more than 3 m (10 ft), beyond any external surface of the specimen, and the specimen must be positioned 1 m (40 in) above the surface of the fuel source. For purposes of calculation, the surface absorptivity coefficient must be either that value which the package may be expected to possess if exposed to the fire specified or 0.8, whichever is greater; and the convective coefficient must be that value which may be demonstrated to exist if the package were exposed to the fire specified. Artificial cooling may not be applied after cessation of external heat input, and any combustion of materials of construction, must be allowed to proceed until it terminates naturally.

(5) *Immersion—fissile material*. For fissile material subject to § 71.55, in those cases where water inleakage has not been assumed for criticality analysis, immersion under a head of water of at least 0.9 m (3 ft) in the attitude for which maximum leakage is expected.

(6) *Immersion—all packages*. A separate, undamaged specimen must be subjected to water pressure equivalent to immersion under a head of water of at least 15 m (50 ft). For test purposes, an external pressure of water of 150 kPa (21.7 lbf/in^2) gauge is considered to meet these conditions.

[60 FR 50264, Sept. 28, 1995, as amended at 69 FR 3795, Jan. 26, 2004]

§ 71.74 Accident conditions for air transport of plutonium.

(a) *Test conditions—Sequence of tests*. A package must be physically tested to the following conditions in the order indicated to determine their cumulative effect.

(1) Impact at a velocity of not less than 129 m/sec (422 ft/sec) at a right angle onto a flat, essentially unyielding, horizontal surface, in the orientation (e.g., side, end, corner) expected to result in maximum damage at the conclusion of the test sequence.

(2) A static compressive load of 31,800 kg (70,000 lbs) applied in the orientation expected to result in maximum damage at the conclusion of the test sequence. The force on the package must be developed between a flat steel surface and a 5 cm (2 in) wide, straight, solid, steel bar. The length of the bar must be at least as long as the diameter of the package, and the longitudinal axis of the bar must be parallel to the plane of the flat surface. The load must be applied to the bar in a manner that prevents any members or devices used to support the bar from contacting the package.

(3) Packages weighing less than 227 kg (500 lbs) must be placed on a flat, essentially unyielding, horizontal surface, and subjected to a weight of 227 kg (500 lbs) falling from a height of 3 m (10 ft) and striking in the position expected to result in maximum damage at the conclusion of the test sequence. The end of the weight contacting the package must be a solid probe made of mild steel. The probe must be the shape of the frustum of a right circular cone, 30 cm (12 in) long, 20 cm (8 in) in diameter at the base, and 2.5 cm (1 in) in diameter at the end. The longitudinal axis of the probe must be perpendicular to the horizontal surface. For packages weighing 227 kg (500 lbs) or more, the base of the probe must be placed on a flat, essentially unyielding horizontal surface, and the package dropped from a height of 3 m (10 ft) onto the probe, striking in the position expected to result in maximum damage at the conclusion of the test sequence.

(4) The package must be firmly restrained and supported such that its longitudinal axis is inclined approximately 45° to the horizontal. The area

of the package that made first contact with the impact surface in paragraph (a)(1) of this section must be in the lowermost position. The package must be struck at approximately the center of its vertical projection by the end of a structural steel angle section falling from a height of at least 46 m (150 ft). The angle section must be at least 1.8 m (6 ft) in length with equal legs at least 13 cm (5 in) long and 1.3 cm (0.5 in) thick. The angle section must be guided in such a way as to fall end-on, without tumbling. The package must be rotated approximately 90° about its longitudinal axis and struck by the steel angle section falling as before.

(5) The package must be exposed to luminous flames from a pool fire of JP–4 or JP–5 aviation fuel for a period of at least 60 minutes. The luminous flames must extend an average of at least 0.9 m (3 ft) and no more than 3 m (10 ft) beyond the package in all horizontal directions. The position and orientation of the package in relation to the fuel must be that which is expected to result in maximum damage at the conclusion of the test sequence. An alternate method of thermal testing may be substituted for this fire test, provided that the alternate test is not of shorter duration and would not result in a lower heating rate to the package. At the conclusion of the thermal test, the package must be allowed to cool naturally or must be cooled by water sprinkling, whichever is expected to result in maximum damage at the conclusion of the test sequence.

(6) Immersion under at least 0.9 m (3 ft) of water.

(b) *Individual free-fall impact test.* (1) An undamaged package must be physically subjected to an impact at a velocity not less than the calculated terminal free-fall velocity, at mean sea level, at a right angle onto a flat, essentially unyielding, horizontal surface, in the orientation (e.g., side, end, corner) expected to result in maximum damage.

(2) This test is not required if the calculated terminal free-fall velocity of the package is less than 129 m/sec (422 ft/sec), or if a velocity not less than either 129 m/sec (422 ft/sec) or the calculated terminal free-fall velocity of the package is used in the sequential test of paragraph (a)(1) of this section.

(c) *Individual deep submersion test.* An undamaged package must be physically submerged and physically subjected to an external water pressure of at least 4 MPa (600 lbs/in^2).

§ 71.75 Qualification of special form radioactive material.

(a) Special form radioactive materials must meet the test requirements of paragraph (b) of this section. Each solid radioactive material or capsule specimen to be tested must be manufactured or fabricated so that it is representative of the actual solid material or capsule that will be transported, with the proposed radioactive content duplicated as closely as practicable. Any differences between the material to be transported and the test material, such as the use of non-radioactive contents, must be taken into account in determining whether the test requirements have been met. In addition:

(1) A different specimen may be used for each of the tests;

(2) The specimen may not break or shatter when subjected to the impact, percussion, or bending tests;

(3) The specimen may not melt or disperse when subjected to the heat test;

(4) After each test, leaktightness or indispersibility of the specimen must be determined by a method no less sensitive than the leaching assessment procedure prescribed in paragraph (c) of this section. For a capsule resistant to corrosion by water, and which has an internal void volume greater than 0.1 milliliter, an alternative to the leaching assessment is a demonstration of leaktightness of $\times 10^{-4}$ torr-liter/s ($1.3 \times \times 10^{-4}$ atm-cm^3/s) based on air at 25 °C (77 °F) and one atmosphere differential pressure for solid radioactive content, or $\times 10^{-6}$ torr-liter/s ($1.3 \times \times 10^{-6}$ atm$-$cm^3/s) for liquid or gaseous radioactive content; and

(5) A specimen that comprises or simulates radioactive material contained in a sealed capsule need not be subjected to the leaktightness procedure specified in this section, provided it is alternatively subjected to any of the tests prescribed in ISO 9978:1992(E),

''Radiation protection—Sealed radioactive sources—Leakage test methods'' (incorporated by reference, see §71.70).

(b) *Test methods*—(1) *Impact Test*. The specimen must fall onto the target from a height of 9 m (30 ft) or greater in the orientation expected to result in maximum damage. The target must be a flat, horizontal surface of such mass and rigidity that any increase in its resistance to displacement or deformation, on impact by the specimen, would not significantly increase the damage to the specimen.

(2) *Percussion Test*. (i) The specimen must be placed on a sheet of lead that is supported by a smooth solid surface, and struck by the flat face of a steel billet so as to produce an impact equivalent to that resulting from a free drop of 1.4 kg (3 lbs) through 1 m (40 in);

(ii) The flat face of the billet must be 25 millimeters (mm) (1 inch) in diameter with the edge rounded off to a radius of 3 mm ±0.3 mm (0.12 in ±0.012 in);

(iii) The lead must be hardness number 3.5 to 4.5 on the Vickers scale and not more than 25 mm (1 inch) thick, and must cover an area greater than that covered by the specimen;

(iv) A fresh surface of lead must be used for each impact; and

(v) The billet must strike the specimen so as to cause maximum damage.

(3) *Bending test*. (i) This test applies only to long, slender sources with a length of 10 cm (4 inches) or greater and a length to width ratio of 10 or greater;

(ii) The specimen must be rigidly clamped in a horizontal position so that one half of its length protrudes from the face of the clamp;

(iii) The orientation of the specimen must be such that the specimen will suffer maximum damage when its free end is struck by the flat face of a steel billet;

(iv) The billet must strike the specimen so as to produce an impact equivalent to that resulting from a free vertical drop of 1.4 kg (3 lbs) through 1 m (40 in); and

(v) The flat face of the billet must be 25 mm (1 inch) in diameter with the edges rounded off to a radius of 3 mm ±0.3 mm (.12 in ±0.012 in).

(4) *Heat test*. The specimen must be heated in air to a temperature of not less than 800 °C (1475 °F), held at that temperature for a period of 10 minutes, and then allowed to cool.

(c) *Leaching assessment methods*. (1) For indispersible solid material—

(i) The specimen must be immersed for 7 days in water at ambient temperature. The water must have a pH of 6–8 and a maximum conductivity of 10 micromho per centimeter at 20° (68 °F);

(ii) The water with specimen must then be heated to a temperature of 50 °C ±5 °C (122 °F ±9 °F) and maintained at this temperature for 4 hours.

(iii) The activity of the water must then be determined;

(iv) The specimen must then be stored for at least 7 days in still air of relative humidity not less than 90 percent at 30 °C (86 °F);

(v) The specimen must then be immersed in water under the same conditions as in paragraph (c)(1)(i) of this section, and the water with specimen must be heated to 50 °C ±5 °C (122 °F ±9 °F) and maintained at that temperature for 4 hours;

(vi) The activity of the water must then be determined. The sum of the activities determined here and in paragraph (c)(1)(iii) of this section must not exceed 2 kilobecquerels (kBq) (0.05 microcurie (μCi)).

(2) For encapsulated material—

(i) The specimen must be immersed in water at ambient temperature. The water must have a pH of 6–8 and a maximum conductivity of 10 micromho per centimeter;

(ii) The water and specimen must be heated to a temperature of 50 °C ±5 °C (122 °F ±9 °F) and maintained at this temperature for 4 hours;

(iii) The activity of the water must then be determined;

(iv) The specimen must then be stored for at least 7 days in still air at a temperature of 30 °C (86 °F) or greater;

(v) The process in paragraph (c)(2)(i), (ii), and (iii) of this section must be repeated; and

(vi) The activity of the water must then be determined. The sum of the activities determined here and in paragraph (c)(2)(iii) of this section must not exceed 2 kilobecquerels (kBq) (0.05 microcurie (μCi)).

(d) A specimen that comprises or simulates radioactive material contained in a sealed capsule need not be subjected to—

(1) The impact test and the percussion test of this section, provided that the specimen is:

(i) Less than 200 grams and alternatively subjected to the Class 4 impact test prescribed in ISO 2919:1999(E), ''Radiation protection—Sealed radioactive sources—General requirements and classification'' (incorporated by reference, see § 71.70); or

(ii) Less than 500 grams and alternatively subjected to the Class 5 impact test prescribed in ISO 2919:1999(E), ''Radioactive protection—Sealed radioactive sources—General requirements and classification'' (incorporated by reference, see § 71.70); and

(2) The heat test of this section, provided the specimen is alternatively subjected to the Class 6 temperature test specified in ISO 2919:1999(E), ''Radioactive protection—Sealed radioactive sources—General requirements and classification'' (incorporated by reference, see § 71.70).

[60 FR 50264, Sept. 28, 1995, as amended at 80 FR 34013, June 12, 2015]

§ 71.77 Qualification of LSA-III Material.

(a) LSA-III material must meet the test requirements of paragraph (b) of this section. Any differences between the specimen to be tested and the material to be transported must be taken into account in determining whether the test requirements have been met.

(b) *Leaching test.* (1) The specimen, representing no less than the entire contents of the package, must be immersed for 7 days in water at ambient temperature;

(2) The volume of water to be used in the test must be sufficient to ensure that at the end of the test period the free volume of the unabsorbed and unreacted water remaining will be at least 10% of the volume of the specimen itself;

(3) The water must have an initial pH of 6–8 and a maximum conductivity 10 micromho/cm at 20 °C (68 °F); and

(4) The total activity of the free volume of water must be measured following the 7 day immersion test and must not exceed 0.1 A_2.

Subpart G—Operating Controls and Procedures

§ 71.81 Applicability of operating controls and procedures.

A licensee subject to this part, who, under a general or specific license, transports licensed material or delivers licensed material to a carrier for transport, shall comply with the requirements of this subpart G, with the quality assurance requirements of subpart H of this part, and with the general provisions of subpart A of this part.

§ 71.83 Assumptions as to unknown properties.

When the isotopic abundance, mass, concentration, degree of irradiation, degree of moderation, or other pertinent property of fissile material in any package is not known, the licensee shall package the fissile material as if the unknown properties have credible values that will cause the maximum neutron multiplication.

§ 71.85 Preliminary determinations.

Before the first use of any packaging for the shipment of licensed material—

(a) The certificate holder shall ascertain that there are no cracks, pinholes, uncontrolled voids, or other defects that could significantly reduce the effectiveness of the packaging;

(b) Where the maximum normal operating pressure will exceed 35 kPa (5 lbf/in^2) gauge, the certificate holder shall test the containment system at an internal pressure at least 50 percent higher than the maximum normal operating pressure, to verify the capability of that system to maintain its structural integrity at that pressure;

(c) The certificate holder shall conspicuously and durably mark the packaging with its model number, serial number, gross weight, and a package identification number assigned by the NRC. Before applying the model number, the certificate holder shall determine that the packaging has been fabricated in accordance with the design approved by the Commission; and

(d) The licensee shall ascertain that the determinations in paragraphs (a)

through (c) of this section have been made.

[60 FR 50264, Sept. 28, 1995, as amended at 80 FR 34013, June 12, 2015]

§ 71.87 Routine determinations.

Before each shipment of licensed material, the licensee shall ensure that the package with its contents satisfies the applicable requirements of this part and of the license. The licensee shall determine that—

(a) The package is proper for the contents to be shipped;

(b) The package is in unimpaired physical condition except for superficial defects such as marks or dents;

(c) Each closure device of the packaging, including any required gasket, is properly installed and secured and free of defects;

(d) Any system for containing liquid is adequately sealed and has adequate space or other specified provision for expansion of the liquid;

(e) Any pressure relief device is operable and set in accordance with written procedures;

(f) The package has been loaded and closed in accordance with written procedures;

(g) For fissile material, any moderator or neutron absorber, if required, is present and in proper condition;

(h) Any structural part of the package that could be used to lift or tie down the package during transport is rendered inoperable for that purpose, unless it satisfies the design requirements of § 71.45;

(i) The level of non-fixed (removable) radioactive contamination on the external surfaces of each package offered for shipment is as low as reasonably achievable, and within the limits specified in DOT regulations in 49 CFR 173.443;

(j) External radiation levels around the package and around the vehicle, if applicable, will not exceed the limits specified in § 71.47 at any time during transportation; and

(k) Accessible package surface temperatures will not exceed the limits specified in § 71.43(g) at any time during transportation.

§ 71.88 Air transport of plutonium.

(a) Notwithstanding the provisions of any general licenses and notwithstanding any exemptions stated directly in this part or included indirectly by citation of 49 CFR chapter I, as may be applicable, the licensee shall assure that plutonium in any form, whether for import, export, or domestic shipment, is not transported by air or delivered to a carrier for air transport unless:

(1) The plutonium is contained in a medical device designed for individual human application; or

(2) The plutonium is contained in a material in which the specific activity is less than or equal to the activity concentration values for plutonium specified in Appendix A, Table A–2, of this part, and in which the radioactivity is essentially uniformly distributed; or

(3) The plutonium is shipped in a single package containing no more than an A_2 quantity of plutonium in any isotope or form, and is shipped in accordance with § 71.5; or

(4) The plutonium is shipped in a package specifically authorized for the shipment of plutonium by air in the Certificate of Compliance for that package issued by the Commission.

(b) Nothing in paragraph (a) of this section is to be interpreted as removing or diminishing the requirements of § 73.24 of this chapter.

(c) For a shipment of plutonium by air which is subject to paragraph (a)(4) of this section, the licensee shall, through special arrangement with the carrier, require compliance with 49 CFR 175.704, U.S. Department of Transportation regulations applicable to the air transport of plutonium.

[60 FR 50264, Sept. 28, 1995, as amended at 69 FR 3795, Jan. 26, 2004]

§ 71.89 Opening instructions.

Before delivery of a package to a carrier for transport, the licensee shall ensure that any special instructions needed to safely open the package have been sent to, or otherwise made available to, the consignee for the consignee's use in accordance with 10 CFR 20.1906(e).

§ 71.91 Records.

(a) Each licensee shall maintain, for a period of 3 years after shipment, a record of each shipment of licensed material not exempt under § 71.14, showing where applicable—

(1) Identification of the packaging by model number and serial number;

(2) Verification that there are no significant defects in the packaging, as shipped;

(3) Volume and identification of coolant;

(4) Type and quantity of licensed material in each package, and the total quantity of each shipment;

(5) For each item of irradiated fissile material—

(i) Identification by model number and serial number;

(ii) Irradiation and decay history to the extent appropriate to demonstrate that its nuclear and thermal characteristics comply with license conditions; and

(iii) Any abnormal or unusual condition relevant to radiation safety;

(6) Date of the shipment;

(7) For fissile packages and for Type B packages, any special controls exercised;

(8) Name and address of the transferee;

(9) Address to which the shipment was made; and

(10) Results of the determinations required by § 71.87 and by the conditions of the package approval.

(b) Each certificate holder shall maintain, for a period of 3 years after the life of the packaging to which they apply, records identifying the packaging by model number, serial number, and date of manufacture.

(c) The licensee, certificate holder, and an applicant for a CoC, shall make available to the Commission for inspection, upon reasonable notice, all records required by this part. Records are only valid if stamped, initialed, or signed and dated by authorized personnel, or otherwise authenticated.

(d) The licensee, certificate holder, and an applicant for a CoC shall maintain sufficient written records to furnish evidence of the quality of packaging. The records to be maintained include results of the determinations required by § 71.85; design, fabrication, and assembly records; results of reviews, inspections, tests, and audits; results of monitoring work performance and materials analyses; and results of maintenance, modification, and repair activities. Inspection, test, and audit records must identify the inspector or data recorder, the type of observation, the results, the acceptability, and the action taken in connection with any deficiencies noted. These records must be retained for 3 years after the life of the packaging to which they apply.

[60 FR 50264, Sept. 28, 1995, as amended at 69 FR 3795, Jan. 26, 2004; 80 FR 34013, June 12, 2015]

§ 71.93 Inspection and tests.

(a) The licensee, certificate holder, and applicant for a CoC shall permit the Commission, at all reasonable times, to inspect the licensed material, packaging, premises, and facilities in which the licensed material or packaging is used, provided, constructed, fabricated, tested, stored, or shipped.

(b) The licensee, certificate holder, and applicant for a CoC shall perform, and permit the Commission to perform, any tests the Commission deems necessary or appropriate for the administration of the regulations in this chapter.

(c) The certificate holder and applicant for a CoC shall notify the NRC, in accordance with § 71.1, 45 days in advance of starting fabrication of the first packaging under a CoC. This paragraph applies to any packaging used for the shipment of licensed material which has either—

(1) A decay heat load in excess of 5 kW; or

(2) A maximum normal operating pressure in excess of 103 kPa (15 lbf/in^2) gauge.

[69 FR 3796, Jan. 26, 2004]

§ 71.95 Reports.

(a) The licensee, after requesting the certificate holder's input, shall submit a written report to the Commission of—

(1) Instances in which there is a significant reduction in the effectiveness of any NRC-approved Type B or Type AF packaging during use; or

(2) Details of any defects with safety significance in any NRC-approved Type B or fissile material packaging, after first use.

(3) Instances in which the conditions of approval in the Certificate of Compliance were not observed in making a shipment.

(b) The licensee shall submit a written report to the Commission of instances in which the conditions in the certificate of compliance were not followed during a shipment.

(c) Each licensee shall submit, in accordance with §71.1, a written report required by paragraph (a) or (b) of this section within 60 days of the event or discovery of the event. The licensee shall also provide a copy of each report submitted to the NRC to the applicable certificate holder. Written reports prepared under other regulations may be submitted to fulfill this requirement if the reports contain all the necessary information, and the appropriate distribution is made. Using an appropriate method listed in §71.1(a), the licensee shall report to: ATTN: Document Control Desk, Director, Division of Fuel Management, Office of Nuclear Material Safety and Safeguards. These written reports must include the following:

(1) A brief abstract describing the major occurrences during the event, including all component or system failures that contributed to the event and significant corrective action taken or planned to prevent recurrence.

(2) A clear, specific, narrative description of the event that occurred so that knowledgeable readers conversant with the requirements of part 71, but not familiar with the design of the packaging, can understand the complete event. The narrative description must include the following specific information as appropriate for the particular event.

(i) Status of components or systems that were inoperable at the start of the event and that contributed to the event;

(ii) Dates and approximate times of occurrences;

(iii) The cause of each component or system failure or personnel error, if known;

(iv) The failure mode, mechanism, and effect of each failed component, if known;

(v) A list of systems or secondary functions that were also affected for failures of components with multiple functions;

(vi) The method of discovery of each component or system failure or procedural error;

(vii) For each human performance-related root cause, a discussion of the cause(s) and circumstances;

(viii) The manufacturer and model number (or other identification) of each component that failed during the event; and

(ix) For events occurring during use of a packaging, the quantities and chemical and physical form(s) of the package contents.

(3) An assessment of the safety consequences and implications of the event. This assessment must include the availability of other systems or components that could have performed the same function as the components and systems that failed during the event.

(4) A description of any corrective actions planned as a result of the event, including the means employed to repair any defects, and actions taken to reduce the probability of similar events occurring in the future.

(5) Reference to any previous similar events involving the same packaging that are known to the licensee or certificate holder.

(6) The name and telephone number of a person within the licensee's organization who is knowledgeable about the event and can provide additional information.

(7) The extent of exposure of individuals to radiation or to radioactive materials without identification of individuals by name.

(d) *Report legibility*. The reports submitted by licensees and/or certificate holders under this section must be of sufficient quality to permit reproduction and micrographic processing.

[69 FR 3796, Jan. 26, 2004, as amended at 75 FR 73945, Nov. 30, 2010; 79 FR 75740, Dec. 19, 2014; 84 FR 65645, Nov. 29, 2019]

§ 71.97 Advance notification of shipment of irradiated reactor fuel and nuclear waste.

(a)(1) As specified in paragraphs (b), (c), and (d) of this section, each licensee shall provide advance notification to the governor of a State, or the governor's designee, of the shipment of licensed material, within or across the boundary of the State, before the transport, or delivery to a carrier, for transport, of licensed material outside the confines of the licensee's plant or other place of use or storage.

(2) As specified in paragraphs (b), (c), and (d) of this section, after June 11, 2013, each licensee shall provide advance notification to the Tribal official of participating Tribes referenced in paragraph (c)(3)(iii) of this section, or the official's designee, of the shipment of licensed material, within or across the boundary of the Tribe's reservation, before the transport, or delivery to a carrier, for transport, of licensed material outside the confines of the licensee's plant or other place of use or storage.

(b) Advance notification is also required under this section for the shipment of licensed material, other than irradiated fuel, meeting the following three conditions:

(1) The licensed material is required by this part to be in Type B packaging for transportation;

(2) The licensed material is being transported to or across a State boundary en route to a disposal facility or to a collection point for transport to a disposal facility; and

(3) The quantity of licensed material in a single package exceeds the least of the following:

(i) 3000 times the A_1 value of the radionuclides as specified in appendix A, Table A–1 for special form radioactive material;

(ii) 3000 times the A_2 value of the radionuclides as specified in appendix A, Table A–1 for normal form radioactive material; or

(iii) 1000 TBq (27,000 Ci).

(c) *Procedures for submitting advance notification.* (1) The notification must be made in writing to:

(i) The office of each appropriate governor or governor's designee;

(ii) The office of each appropriate Tribal official or Tribal official's designee; and

(iii) The Director, Office of Nuclear Security and Incident Response.

(2) A notification delivered by mail must be postmarked at least 7 days before the beginning of the 7-day period during which departure of the shipment is estimated to occur.

(3) A notification delivered by any other means than mail must reach the office of the governor or of the governor's designee or the Tribal official or Tribal official's designee at least 4 days before the beginning of the 7-day period during which departure of the shipment is estimated to occur.

(i) [Reserved]

(ii) Contact information for each State, including telephone and mailing addresses of governors and governors' designees, and participating Tribes, including telephone and mailing addresses of Tribal officials and Tribal official's designees, is available on the NRC Web site at: *https://scp.nrc.gov/special/designee.pdf*.

(iii) A list of the names and mailing addresses of the governors' designees and Tribal officials' designees of participating Tribes is available on request from the Director, Division of Materials Safety, Security, State, and Tribal Programs, Office of Nuclear Material Safety and Safeguards, U.S. Nuclear Regulatory Commission, Washington, DC 20555–0001.

(4) The licensee shall retain a copy of the notification as a record for 3 years.

(d) *Information to be furnished in advance notification of shipment.* Each advance notification of shipment of irradiated reactor fuel or nuclear waste must contain the following information:

(1) The name, address, and telephone number of the shipper, carrier, and receiver of the irradiated reactor fuel or nuclear waste shipment;

(2) A description of the irradiated reactor fuel or nuclear waste contained in the shipment, as specified in the regulations of DOT in 49 CFR 172.202 and 172.203(d);

(3) The point of origin of the shipment and the 7-day period during which departure of the shipment is estimated to occur;

(4) The 7-day period during which arrival of the shipment at State boundaries or Tribal reservation boundaries is estimated to occur;

(5) The destination of the shipment, and the 7-day period during which arrival of the shipment is estimated to occur; and

(6) A point of contact, with a telephone number, for current shipment information.

(e) *Revision notice.* A licensee who finds that schedule information previously furnished to a governor or governor's designee or a Tribal official or Tribal official's designee, in accordance with this section, will not be met, shall telephone a responsible individual in the office of the governor of the State or of the governor's designee or the Tribal official or the Tribal official's designee and inform that individual of the extent of the delay beyond the schedule originally reported. The licensee shall maintain a record of the name of the individual contacted for 3 years.

(f) *Cancellation notice.* (1) Each licensee who cancels an irradiated reactor fuel or nuclear waste shipment for which advance notification has been sent shall send a cancellation notice to the governor of each State or to the governor's designee previously notified, each Tribal official or to the Tribal official's designee previously notified, and to the Director, Office of Nuclear Security and Incident Response.

(2) The licensee shall state in the notice that it is a cancellation and identify the advance notification that is being canceled. The licensee shall retain a copy of the notice as a record for 3 years.

[60 FR 50264, Sept. 28, 1995, as amended at 67 FR 3586, Jan. 25, 2002; 68 FR 14529, Mar. 26, 2003; 68 FR 23575, May 5, 2003; 68 FR 58818, Oct. 10, 2003; 74 FR 62683, Dec. 1, 2009; 75 FR 73945, Nov. 30, 2010; 77 FR 34204, June 11, 2012; 78 FR 17021, Mar. 19, 2013; 79 FR 75741, Dec. 19, 2014; 80 FR 74981, Dec. 1, 2015; 83 FR 30288, June 28, 2018; 83 FR 58723, Nov. 21, 2018; 85 FR 65663, Oct. 16, 2020]

§ 71.99 Violations.

(a) The Commission may obtain an injunction or other court order to prevent a violation of the provisions of—

(1) The Atomic Energy Act of 1954, as amended;

(2) Title II of the Energy Reorganization Act of 1974, as amended; or (3) A regulation or order issued pursuant to those Acts.

(b) The Commission may obtain a court order for the payment of a civil penalty imposed under section 234 of the Atomic Energy Act:

(1) For violations of—

(i) Sections 53, 57, 62, 63, 81, 82, 101, 103, 104, 107, or 109 of the Atomic Energy Act of 1954, as amended;

(ii) Section 206 of the Energy Reorganization Act;

(iii) Any rule, regulation, or order issued pursuant to the sections specified in paragraph (b)(1)(i) of this section; or

(iv) Any term , condition, or limitation of any license issued under the sections specified in paragraph (b)(1)(i) of this section.

(2) For any violation for which a license may be revoked under section 186 of the Atomic Energy Act of 1954, as amended.

§ 71.100 Criminal penalties.

(a) Section 223 of the Atomic Energy Act of 1954, as amended, provides for criminal sanctions for willful violation of, attempted violation of, or conspiracy to violate, any regulation issued under sections 161b, 161i, or 161o of the Act. For purposes of section 223, all the regulations in part 71 are issued under one or more of sections 161b, 161i, or 161o, except for the sections listed in paragraph (b) of this section.

(b) The regulations in part 71 that are not issued under sections 161b, 161i, or 161o for the purposes of section 223 are as follows: §§71.0, 71.2, 71.4, 71.6, 71.7, 71.10, 71.31, 71.33, 71.35, 71.37, 71.38, 71.39, 71.40, 71.41, 71.43, 71.45, 71.47, 71.51, 71.55, 71.59, 71.65, 71.71, 71.73, 71.74, 71.75, 71.77, 71.99, and 71.100.

[60 FR 50264, Sept. 28, 1995, as amended at 69 FR 3796, Jan. 26, 2004]

Subpart H—Quality Assurance

SOURCE: 69 FR 3796, Jan. 26, 2004, unless otherwise noted.

§ 71.101 Quality assurance requirements.

(a) *Purpose.* This subpart describes quality assurance requirements applying to design, purchase, fabrication, handling, shipping, storing, cleaning, assembly, inspection, testing, operation, maintenance, repair, and modification of components of packaging that are important to safety. As used in this subpart, ''quality assurance'' comprises all those planned and systematic actions necessary to provide adequate confidence that a system or component will perform satisfactorily in service. Quality assurance includes quality control, which comprises those quality assurance actions related to control of the physical characteristics and quality of the material or component to predetermined requirements. Each certificate holder and applicant for a package approval is responsible for satisfying the quality assurance requirements that apply to design, fabrication, testing, and modification of packaging subject to this subpart. Each licensee is responsible for satisfying the quality assurance requirements that apply to its use of a packaging for the shipment of licensed material subject to this subpart.

(b) *Establishment of program.* Each licensee, certificate holder, and applicant for a CoC shall establish, maintain, and execute a quality assurance program satisfying each of the applicable criteria of §§ 71.101 through 71.137 and satisfying any specific provisions that are applicable to the licensee's activities including procurement of packaging. The licensee, certificate holder, and applicant for a CoC shall execute the applicable criteria in a graded approach to an extent that is commensurate with the quality assurance requirement's importance to safety.

(c) *Approval of program.* (1) Before the use of any package for the shipment of licensed material subject to this subpart, each licensee shall obtain Commission approval of its quality assurance program. Using an appropriate method listed in § 71.1(a), each licensee shall file a description of its quality assurance program, including a discussion of which requirements of this subpart are applicable and how they will be satisfied, by submitting the description to: ATTN: Document Control Desk, Director, Division of Fuel Management, Office of Nuclear Material Safety and Safeguards.

(2) Before the fabrication, testing, or modification of any package for the shipment of licensed material subject to this subpart, each certificate holder, or applicant for a Certificate of Compliance shall obtain Commission approval of its quality assurance program. Each certificate holder or applicant for a CoC shall, in accordance with § 71.1, file a description of its quality assurance program, including a discussion of which requirements of this subpart are applicable and how they will be satisfied.

(d) *Existing package designs.* The provisions of this paragraph deal with packages that have been approved for use in accordance with this part before January 1, 1979, and which have been designed in accordance with the provisions of this part in effect at the time of application for package approval. Those packages will be accepted as having been designed in accordance with a quality assurance program that satisfies the provisions of paragraph (b) of this section.

(e) *Existing packages.* The provisions of this paragraph deal with packages that have been approved for use in accordance with this part before January 1, 1979, have been at least partially fabricated before that date, and for which the fabrication is in accordance with the provisions of this part in effect at the time of application for approval of package design. These packages will be accepted as having been fabricated and assembled in accordance with a quality assurance program that satisfies the provisions of paragraph (b) of this section.

(f) *Previously approved programs.* A Commission-approved quality assurance program that satisfies the applicable criteria of subpart H of this part, Appendix B of part 50 of this chapter, or subpart G of part 72 of this chapter, and that is established, maintained, and executed regarding transport packages, will be accepted as satisfying the requirements of paragraph (b) of this section. Before first use, the licensee, certificate holder, and applicant for a

CoC shall notify the NRC, in accordance with § 71.1, of its intent to apply its previously approved subpart H, Appendix B, or subpart G quality assurance program to transportation activities. The licensee, certificate holder, and applicant for a CoC shall identify the program by date of submittal to the Commission, Docket Number, and date of Commission approval.

(g) *Radiography containers.* A program for transport container inspection and maintenance limited to radiographic exposure devices, source changers, or packages transporting these devices and meeting the requirements of § 34.31(b) of this chapter or equivalent Agreement State requirement, is deemed to satisfy the requirements of §§ 71.17(b) and 71.101(b).

[69 FR 3796, Jan. 26, 2004, as amended at 75 FR 73945, Nov. 30, 2010; 79 FR 75741, Dec. 19, 2014; 80 FR 34013, June 12, 2015; 84 FR 65645, Nov. 29, 2019]

§ 71.103 Quality assurance organization.

(a) The licensee, certificate holder, and applicant for a Certificate of Compliance shall be responsible for the establishment and execution of the quality assurance program. The licensee, certificate holder, and applicant for a Certificate of Compliance may delegate to others, such as contractors, agents, or consultants, the work of establishing and executing the quality assurance program, or any part of the quality assurance program, but shall retain responsibility for the program. These activities include performing the functions associated with attaining quality objectives and the quality assurance functions.

(b) The quality assurance functions are—

(1) Assuring that an appropriate quality assurance program is established and effectively executed; and

(2) Verifying, by procedures such as checking, auditing, and inspection, that activities affecting the functions that are important to safety have been correctly performed.

(c) The persons and organizations performing quality assurance functions must have sufficient authority and organizational freedom to—

(1) Identify quality problems;

(2) Initiate, recommend, or provide solutions; and

(3) Verify implementation of solutions.

(d) The persons and organizations performing quality assurance functions shall report to a management level that assures that the required authority and organizational freedom, including sufficient independence from cost and schedule, when opposed to safety considerations, are provided.

(e) Because of the many variables involved, such as the number of personnel, the type of activity being performed, and the location or locations where activities are performed, the organizational structure for executing the quality assurance program may take various forms, provided that the persons and organizations assigned the quality assurance functions have the required authority and organizational freedom.

(f) Irrespective of the organizational structure, the individual(s) assigned the responsibility for assuring effective execution of any portion of the quality assurance program, at any location where activities subject to this section are being performed, must have direct access to the levels of management necessary to perform this function.

[69 FR 3796, Jan. 26, 2004, as amended at 80 FR 34014, June 12, 2015]

§ 71.105 Quality assurance program.

(a) The licensee, certificate holder, and applicant for a CoC shall establish, at the earliest practicable time consistent with the schedule for accomplishing the activities, a quality assurance program that complies with the requirements of §§ 71.101 through 71.137. The licensee, certificate holder, and applicant for a CoC shall document the quality assurance program by written procedures or instructions and shall carry out the program in accordance with those procedures throughout the period during which the packaging is used. The licensee, certificate holder, and applicant for a CoC shall identify the material and components to be covered by the quality assurance program, the major organizations participating in the program, and the designated functions of these organizations.

(b) The licensee, certificate holder, and applicant for a CoC, through its quality assurance program, shall provide control over activities affecting the quality of the identified materials and components to an extent consistent with their importance to safety, and as necessary to assure conformance to the approved design of each individual package used for the shipment of radioactive material. The licensee, certificate holder, and applicant for a CoC shall assure that activities affecting quality are accomplished under suitably controlled conditions. Controlled conditions include the use of appropriate equipment; suitable environmental conditions for accomplishing the activity, such as adequate cleanliness; and assurance that all prerequisites for the given activity have been satisfied. The licensee, certificate holder, and applicant for a CoC shall take into account the need for special controls, processes, test equipment, tools, and skills to attain the required quality, and the need for verification of quality by inspection and test.

(c) The licensee, certificate holder, and applicant for a CoC shall base the requirements and procedures of its quality assurance program on the following considerations concerning the complexity and proposed use of the package and its components:

(1) The impact of malfunction or failure of the item to safety;

(2) The design and fabrication complexity or uniqueness of the item;

(3) The need for special controls and surveillance over processes and equipment;

(4) The degree to which functional compliance can be demonstrated by inspection or test; and

(5) The quality history and degree of standardization of the item.

(d) The licensee, certificate holder, and applicant for a CoC shall provide for indoctrination and training of personnel performing activities affecting quality, as necessary to assure that suitable proficiency is achieved and maintained. The licensee, certificate holder, and applicant for a CoC shall review the status and adequacy of the quality assurance program at established intervals. Management of other organizations participating in the quality assurance program shall review regularly the status and adequacy of that part of the quality assurance program they are executing.

§ 71.106 Changes to quality assurance program.

(a) Each quality assurance program approval holder shall submit, in accordance with § 71.1(a), a description of a proposed change to its NRC-approved quality assurance program that will reduce commitments in the program description as approved by the NRC. The quality assurance program approval holder shall not implement the change before receiving NRC approval.

(1) The description of a proposed change to the NRC-approved quality assurance program must identify the change, the reason for the change, and the basis for concluding that the revised program incorporating the change continues to satisfy the applicable requirements of subpart H of this part.

(2) [Reserved]

(b) Each quality assurance program approval holder may change a previously approved quality assurance program without prior NRC approval, if the change does not reduce the commitments in the quality assurance program previously approved by the NRC. Changes to the quality assurance program that do not reduce the commitments shall be submitted to the NRC every 24 months, in accordance with § 71.1(a). In addition to quality assurance program changes involving administrative improvements and clarifications, spelling corrections, and non-substantive changes to punctuation or editorial items, the following changes are not considered reductions in commitment:

(1) The use of a quality assurance standard approved by the NRC that is more recent than the quality assurance standard in the certificate holder's or applicant's current quality assurance program at the time of the change;

(2) The use of generic organizational position titles that clearly denote the position function, supplemented as necessary by descriptive text, rather than specific titles, provided that there is no

substantive change to either the functions of the position or reporting responsibilities;

(3) The use of generic organizational charts to indicate functional relationships, authorities, and responsibilities, or alternatively, the use of descriptive text, provided that there is no substantive change to the functional relationships, authorities, or responsibilities;

(4) The elimination of quality assurance program information that duplicates language in quality assurance regulatory guides and quality assurance standards to which the quality assurance program approval holder has committed to on record; and

(5) Organizational revisions that ensure that persons and organizations performing quality assurance functions continue to have the requisite authority and organizational freedom, including sufficient independence from cost and schedule when opposed to safety considerations.

(c) Each quality assurance program approval holder shall maintain records of quality assurance program changes.

[80 FR 34014, June 12, 2015]

§ 71.107 Package design control.

(a) The licensee, certificate holder, and applicant for a CoC shall establish measures to assure that applicable regulatory requirements and the package design, as specified in the license or CoC for those materials and components to which this section applies, are correctly translated into specifications, drawings, procedures, and instructions. These measures must include provisions to assure that appropriate quality standards are specified and included in design documents and that deviations from standards are controlled. Measures must be established for the selection and review for suitability of application of materials, parts, equipment, and processes that are essential to the functions of the materials, parts, and components of the packaging that are important to safety.

(b) The licensee, certificate holder, and applicant for a CoC shall establish measures for the identification and control of design interfaces and for coordination among participating design organizations. These measures must include the establishment of written procedures, among participating design organizations, for the review, approval, release, distribution, and revision of documents involving design interfaces. The design control measures must provide for verifying or checking the adequacy of design, by methods such as design reviews, alternate or simplified calculational methods, or by a suitable testing program. For the verifying or checking process, the licensee shall designate individuals or groups other than those who were responsible for the original design, but who may be from the same organization. Where a test program is used to verify the adequacy of a specific design feature in lieu of other verifying or checking processes, the licensee, certificate holder, and applicant for a CoC shall include suitable qualification testing of a prototype or sample unit under the most adverse design conditions. The licensee, certificate holder, and applicant for a CoC shall apply design control measures to the following:

(1) Criticality physics, radiation shielding, stress, thermal, hydraulic, and accident analyses;

(2) Compatibility of materials;

(3) Accessibility for inservice inspection, maintenance, and repair;

(4) Features to facilitate decontamination; and

(5) Delineation of acceptance criteria for inspections and tests.

(c) The licensee, certificate holder, and applicant for a CoC shall subject design changes, including field changes, to design control measures commensurate with those applied to the original design. Changes in the conditions specified in the CoC require prior NRC approval.

§ 71.109 Procurement document control.

The licensee, certificate holder, and applicant for a CoC shall establish measures to assure that adequate quality is required in the documents for procurement of material, equipment, and services, whether purchased by the licensee, certificate holder, and applicant for a CoC or by its contractors or subcontractors. To the extent necessary, the licensee, certificate holder,

and applicant for a CoC shall require contractors or subcontractors to provide a quality assurance program consistent with the applicable provisions of this part.

§ 71.111 Instructions, procedures, and drawings.

The licensee, certificate holder, and applicant for a CoC shall prescribe activities affecting quality by documented instructions, procedures, or drawings of a type appropriate to the circumstances and shall require that these instructions, procedures, and drawings be followed. The instructions, procedures, and drawings must include appropriate quantitative or qualitative acceptance criteria for determining that important activities have been satisfactorily accomplished.

§ 71.113 Document control.

The licensee, certificate holder, and applicant for a CoC shall establish measures to control the issuance of documents such as instructions, procedures, and drawings, including changes, that prescribe all activities affecting quality. These measures must assure that documents, including changes, are reviewed for adequacy, approved for release by authorized personnel, and distributed and used at the location where the prescribed activity is performed.

§ 71.115 Control of purchased material, equipment, and services.

(a) The licensee, certificate holder, and applicant for a CoC shall establish measures to assure that purchased material, equipment, and services, whether purchased directly or through contractors and subcontractors, conform to the procurement documents. These measures must include provisions, as appropriate, for source evaluation and selection, objective evidence of quality furnished by the contractor or subcontractor, inspection at the contractor or subcontractor source, and examination of products on delivery.

(b) The licensee, certificate holder, and applicant for a CoC shall have available documentary evidence that material and equipment conform to the procurement specifications before installation or use of the material and equipment. The licensee, certificate holder, and applicant for a CoC shall retain, or have available, this documentary evidence for the life of the package to which it applies. The licensee, certificate holder, and applicant for a CoC shall assure that the evidence is sufficient to identify the specific requirements met by the purchased material and equipment.

(c) The licensee, certificate holder, and applicant for a CoC shall assess the effectiveness of the control of quality by contractors and subcontractors at intervals consistent with the importance, complexity, and quantity of the product or services.

§ 71.117 Identification and control of materials, parts, and components.

The licensee, certificate holder, and applicant for a CoC shall establish measures for the identification and control of materials, parts, and components. These measures must assure that identification of the item is maintained by heat number, part number, or other appropriate means, either on the item or on records traceable to the item, as required throughout fabrication, installation, and use of the item. These identification and control measures must be designed to prevent the use of incorrect or defective materials, parts, and components.

§ 71.119 Control of special processes.

The licensee, certificate holder, and applicant for a CoC shall establish measures to assure that special processes, including welding, heat treating, and nondestructive testing are controlled and accomplished by qualified personnel using qualified procedures in accordance with applicable codes, standards, specifications, criteria, and other special requirements.

§ 71.121 Internal inspection.

The licensee, certificate holder, and applicant for a CoC shall establish and execute a program for inspection of activities affecting quality by or for the organization performing the activity, to verify conformance with the documented instructions, procedures, and drawings for accomplishing the activity. The inspection must be performed by individuals other than those who performed the activity being inspected.

Examination, measurements, or tests of material or products processed must be performed for each work operation where necessary to assure quality. If direct inspection of processed material or products is not carried out, indirect control by monitoring processing methods, equipment, and personnel must be provided. Both inspection and process monitoring must be provided when quality control is inadequate without both. If mandatory inspection hold points, which require witnessing or inspecting by the licensee's designated representative and beyond which work should not proceed without the consent of its designated representative, are required, the specific hold points must be indicated in appropriate documents.

§ 71.123 Test control.

The licensee, certificate holder, and applicant for a CoC shall establish a test program to assure that all testing required to demonstrate that the packaging components will perform satisfactorily in service is identified and performed in accordance with written test procedures that incorporate the requirements of this part and the requirements and acceptance limits contained in the package approval. The test procedures must include provisions for assuring that all prerequisites for the given test are met, that adequate test instrumentation is available and used, and that the test is performed under suitable environmental conditions. The licensee, certificate holder, and applicant for a CoC shall document and evaluate the test results to assure that test requirements have been satisfied.

§ 71.125 Control of measuring and test equipment.

The licensee, certificate holder, and applicant for a CoC shall establish measures to assure that tools, gauges, instruments, and other measuring and testing devices used in activities affecting quality are properly controlled, calibrated, and adjusted at specified times to maintain accuracy within necessary limits.

§ 71.127 Handling, storage, and shipping control.

The licensee, certificate holder, and applicant for a CoC shall establish measures to control, in accordance with instructions, the handling, storage, shipping, cleaning, and preservation of materials and equipment to be used in packaging to prevent damage or deterioration. When necessary for particular products, special protective environments, such as inert gas atmosphere, and specific moisture content and temperature levels must be specified and provided.

§ 71.129 Inspection, test, and operating status.

(a) The licensee, certificate holder, and applicant for a CoC shall establish measures to indicate, by the use of markings such as stamps, tags, labels, routing cards, or other suitable means, the status of inspections and tests performed upon individual items of the packaging. These measures must provide for the identification of items that have satisfactorily passed required inspections and tests, where necessary to preclude inadvertent bypassing of the inspections and tests.

(b) The licensee shall establish measures to identify the operating status of components of the packaging, such as tagging valves and switches, to prevent inadvertent operation.

§ 71.131 Nonconforming materials, parts, or components.

The licensee, certificate holder, and applicant for a CoC shall establish measures to control materials, parts, or components that do not conform to the licensee's requirements to prevent their inadvertent use or installation. These measures must include, as appropriate, procedures for identification, documentation, segregation, disposition, and notification to affected organizations. Nonconforming items must be reviewed and accepted, rejected, repaired, or reworked in accordance with documented procedures.

§ 71.133 Corrective action.

The licensee, certificate holder, and applicant for a CoC shall establish measures to assure that conditions adverse to quality, such as deficiencies,

deviations, defective material and equipment, and nonconformances, are promptly identified and corrected. In the case of a significant condition adverse to quality, the measures must assure that the cause of the condition is determined and corrective action taken to preclude repetition. The identification of the significant condition adverse to quality, the cause of the condition, and the corrective action taken must be documented and reported to appropriate levels of management.

§ 71.135 Quality assurance records.

The licensee, certificate holder, and applicant for a Certificate of Compliance shall maintain sufficient written records to describe the activities affecting quality. These records must include changes to the quality assurance program as required by § 71.106, the instructions, procedures, and drawings required by § 71.111 to prescribe quality assurance activities, and closely related specifications such as required qualifications of personnel, procedures, and equipment. The records must include the instructions or procedures that establish a records retention program that is consistent with applicable regulations and designates factors such as duration, location, and assigned responsibility. The licensee, certificate holder, and applicant for a Certificate of Compliance shall retain these records for 3 years beyond the date when the licensee, certificate holder, and applicant for a Certificate of Compliance last engage in the activity for which the quality assurance program was developed. If any portion of the quality assurance program, written procedures or instructions is superseded, the licensee, certificate holder, and applicant for a Certificate of Compliance shall retain the superseded material for 3 years after it is superseded.

[80 FR 34014, June 12, 2015]

§ 71.137 Audits.

The licensee, certificate holder, and applicant for a CoC shall carry out a comprehensive system of planned and periodic audits to verify compliance with all aspects of the quality assurance program and to determine the effectiveness of the program. The audits must be performed in accordance with written procedures or checklists by appropriately trained personnel not having direct responsibilities in the areas being audited. Audited results must be documented and reviewed by management having responsibility in the area audited. Followup action, including reaudit of deficient areas, must be taken where indicated.

APPENDIX A TO PART 71—DETERMINATION OF A_1 AND A_2

I. Values of A_1 and A_2 for individual radionuclides, which are the bases for many activity limits elsewhere in these regulations, are given in Table A–1. The curie (Ci) values specified are obtained by converting from the Terabecquerel (TBq) value. The Terabecquerel values are the regulatory standard. The curie values are for information only and are not intended to be the regulatory standard. Where values of A_1 and A_2 are unlimited, it is for radiation control purposes only. For nuclear criticality safety, some materials are subject to controls placed on fissile material.

II. a. For individual radionuclides whose identities are known, but which are not listed in Table A–1, the A_1 and A_2 values contained in Table A–3 may be used. Otherwise, the licensee shall obtain prior Commission approval of the A_1 and A_2 values for radionuclides not listed in Table A–1, before shipping the material.

b. For individual radionuclides whose identities are known, but which are not listed in Table A–2, the exempt material activity concentration and exempt consignment activity values contained in Table A–3 may be used. Otherwise, the licensee shall obtain prior Commission approval of the exempt material activity concentration and exempt consignment activity values for radionuclides not listed in Table A–2, before shipping the material.

c. The licensee shall submit requests for prior approval, described under paragraphs II.a. and II.b. of this Appendix, to the Commission, in accordance with § 71.1 of this part.

III. In the calculations of A_1 and A_2 for a radionuclide not in Table A–1, a single radioactive decay chain, in which radionuclides are present in their naturally occurring proportions, and in which no daughter radionuclide has a half-life either longer than 10 days, or longer than that of the parent radionuclide, shall be considered as a single radionuclide, and the activity to be taken into account, and the A_1 and A_2 value to be applied, shall be those corresponding to the parent radionuclide of that chain. In the case of radioactive decay chains in which any daughter radionuclide has a half-life either longer

than 10 days, or greater than that of the parent radionuclide, the parent and those daughter radionuclides shall be considered as mixtures of different radionuclides.

IV. For mixtures of radionuclides whose identities and respective activities are known, the following conditions apply:

a. For special form radioactive material, the maximum quantity transported in a Type A package is as follows:

$$\sum_i \frac{B(i)}{A_1(i)} \leq 1$$

where B(i) is the activity of radionuclide i in special form, and $A_1(i)$ is the A_1 value for radionuclide i.

b. For normal form radioactive material, the maximum quantity transported in a Type A package is as follows:

$$\sum_i \frac{B(i)}{A_2(i)} \leq 1$$

where B(i) is the activity of radionuclide i in normal form, and $A_2(i)$ is the A_2 value for radionuclide i.

c. If the package contains both special and normal form radioactive material, the activity that may be transported in a Type A package is as follows:

$$\sum_i \frac{B(i)}{A_1(i)} + \sum_j \frac{C(j)}{A_2(j)} \leq 1$$

where B(i) is the activity of radionuclide i as special form radioactive material, $A_1(i)$ is the A_1 value for radionuclide i, C(j) is the activity of radionuclide j as normal form radioactive material, and $A_2(j)$ is the A_2 value for radionuclide j.

d. Alternatively, the A_1 value for mixtures of special form material may be determined as follows:

$$A_1 \text{ for mixture} = \frac{1}{\sum_i \frac{f(i)}{A_1(i)}}$$

where f(i) is the fraction of activity for radionuclide i in the mixture and $A_1(i)$ is the appropriate A_1 value for radionuclide i.

e. Alternatively, the A_2 value for mixtures of normal form material may be determined as follows:

$$A_2 \text{ for mixture} = \frac{1}{\sum_i \frac{f(i)}{A_2(i)}}$$

where f(i) is the fraction of activity for radionuclide i in the mixture and $A_2(i)$ is the appropriate A_2 value for radionuclide i.

f. The exempt activity concentration for mixtures of nuclides may be determined as follows:

$$\text{Exempt activity concentration for mixture} = \frac{1}{\sum_i \frac{f(i)}{[A](i)}}$$

where f(i) is the fraction of activity concentration of radionuclide i in the mixture and [A](i) is the activity concentration for exempt material containing radionuclide i.

g. The activity limit for an exempt consignment for mixtures of radionuclides may be determined as follows:

$$\text{Exempt consignment activity limit for mixture} = \frac{1}{\sum_i \frac{f(i)}{A(i)}}$$

where f(i) is the fraction of activity of radionuclide i in the mixture and A(i) is the activity limit for exempt consignments for radionuclide i.

V.a. When the identity of each radionuclide is known, but the individual activities of some of the radionuclides are not known, the radionuclides may be grouped, and the lowest A_1 or A_2 value, as appropriate, for the radionuclides in each group may be used in applying the formulas in paragraph IV. Groups may be based on the total alpha activity and the total beta/gamma activity when these are known, using the lowest A_1 or A_2 values for the alpha emitters and beta/gamma emitters.

b. When the identity of each radionuclide is known but the individual activities of some of the radionuclides are not known, the radionuclides may be grouped and the lowest [A] (activity concentration for exempt material) or A (activity limit for exempt consignment) value, as appropriate, for the radionuclides in each group may be used in applying the formulas in paragraph IV of this appendix. Groups may be based on the total alpha activity and the total beta/gamma activity when these are known, using the lowest [A] or A values for the alpha emitters and beta/gamma emitters, respectively.

TABLE A–1—A_1 AND A_2 VALUES FOR RADIONUCLIDES

Symbol of radionuclide	Element and atomic number	A_1 (TBq)	A_1 (Ci)[b]	A_2 (TBq)	A_2 (Ci)[b]	Specific activity	
						(TBq/g)	(Ci/g)
Ac-225 (a)	Actinium (89)	8.0×10^{-1}	2.2×10^{1}	6.0×10^{-3}	1.6×10^{-1}	2.1×10^{3}	5.8×10^{4}
Ac-227 (a)		9.0×10^{-1}	2.4×10^{1}	9.0×10^{-5}	2.4×10^{-3}	2.7	7.2×10^{1}
Ac-228		6.0×10^{-1}	1.6×10^{1}	5.0×10^{-1}	1.4×10^{1}	8.4×10^{4}	2.2×10^{6}
Ag-105	Silver (47)	2.0	5.4×10^{1}	2.0	5.4×10^{1}	1.1×10^{3}	3.0×10^{4}
Ag-108m (a)		7.0×10^{-1}	1.9×10^{1}	7.0×10^{-1}	1.9×10^{1}	9.7×10^{-1}	2.6×10^{1}
Ag-110m (a)		4.0×10^{-1}	1.1×10^{1}	4.0×10^{-1}	1.1×10^{1}	1.8×10^{2}	4.7×10^{3}
Ag-111		2.0	5.4×10^{1}	6.0×10^{-1}	1.6×10^{1}	5.8×10^{3}	1.6×10^{5}
Al-26	Aluminum (13)	1.0×10^{-1}	2.7	1.0×10^{-1}	2.7	7.0×10^{-4}	1.9×10^{-2}
Am-241	Americium (95)	1.0×10^{1}	2.7×10^{2}	1.0×10^{-3}	2.7×10^{-2}	1.3×10^{-1}	3.4
Am-242m (a)		1.0×10^{1}	2.7×10^{2}	1.0×10^{-3}	2.7×10^{-2}	3.6×10^{-1}	1.0×10^{1}

TABLE A–1—A_1 AND A_2 VALUES FOR RADIONUCLIDES—Continued

Symbol of radionuclide	Element and atomic number	A_1 (TBq)	A_1 (Ci)[b]	A_2 (TBq)	A_2 (Ci)[b]	Specific activity	
						(TBq/g)	(Ci/g)
Am-243 (a)		5.0	1.4×10^{2}	1.0×10^{-3}	2.7×10^{-2}	7.4×10^{-3}	2.0×10^{-1}
Ar-37	Argon (18)	4.0×10^{1}	1.1×10^{3}	4.0×10^{1}	1.1×10^{3}	3.7×10^{3}	9.9×10^{4}
Ar-39		4.0×10^{1}	1.1×10^{3}	2.0×10^{1}	5.4×10^{2}	1.3	3.4×10^{1}
Ar-41		3.0×10^{-1}	8.1	3.0×10^{-1}	8.1	1.5×10^{6}	4.2×10^{7}
As-72	Arsenic (33)	3.0×10^{-1}	8.1	3.0×10^{-1}	8.1	6.2×10^{4}	1.7×10^{6}
As-73		4.0×10^{1}	1.1×10^{3}	4.0×10^{1}	1.1×10^{3}	8.2×10^{2}	2.2×10^{4}
As-74		1.0	2.7×10^{1}	9.0×10^{-1}	2.4×10^{1}	3.7×10^{3}	9.9×10^{4}
As-76		3.0×10^{-1}	8.1	3.0×10^{-1}	8.1	5.8×10^{4}	1.6×10^{6}
As-77		2.0×10^{1}	5.4×10^{2}	7.0×10^{-1}	1.9×10^{1}	3.9×10^{4}	1.0×10^{6}
At-211 (a)	Astatine (85)	2.0×10^{1}	5.4×10^{2}	5.0×10^{-1}	1.4×10^{1}	7.6×10^{4}	2.1×10^{6}
Au-193	Gold (79)	7.0	1.9×10^{2}	2.0	5.4×10^{1}	3.4×10^{4}	9.2×10^{5}
Au-194		1.0	2.7×10^{1}	1.0	2.7×10^{1}	1.5×10^{4}	4.1×10^{5}
Au-195		1.0×10^{1}	2.7×10^{2}	6.0	1.6×10^{2}	1.4×10^{2}	3.7×10^{3}
Au-198		1.0	2.7×10^{1}	6.0×10^{-1}	1.6×10^{1}	9.0×10^{3}	2.4×10^{5}
Au-199		1.0×10^{1}	2.7×10^{2}	6.0×10^{-1}	1.6×10^{1}	7.7×10^{3}	2.1×10^{5}
Ba-131 (a)	Barium (56)	2.0	5.4×10^{1}	2.0	5.4×10^{1}	3.1×10^{3}	8.4×10^{4}
Ba-133		3.0	8.1×10^{1}	3.0	8.1×10^{1}	9.4	2.6×10^{2}
Ba-133m		2.0×10^{1}	5.4×10^{2}	6.0×10^{-1}	1.6×10^{1}	2.2×10^{4}	6.1×10^{5}
Ba-140 (a)		5.0×10^{-1}	1.4×10^{1}	3.0×10^{-1}	8.1	2.7×10^{3}	7.3×10^{4}
Be-7	Beryllium (4)	2.0×10^{1}	5.4×10^{2}	2.0×10^{1}	5.4×10^{2}	1.3×10^{4}	3.5×10^{5}
Be-10		4.0×10^{1}	1.1×10^{3}	6.0×10^{-1}	1.6×10^{1}	8.3×10^{-4}	2.2×10^{-2}
Bi-205	Bismuth (83)	7.0×10^{-1}	1.9×10^{1}	7.0×10^{-1}	1.9×10^{1}	1.5×10^{3}	4.2×10^{4}
Bi-206		3.0×10^{-1}	8.1	3.0×10^{-1}	8.1	3.8×10^{3}	1.0×10^{5}
Bi-207		7.0×10^{-1}	1.9×10^{1}	7.0×10^{-1}	1.9×10^{1}	1.9	5.2×10^{1}
Bi-210		1.0	2.7×10^{1}	6.0×10^{-1}	1.6×10^{1}	4.6×10^{3}	1.2×10^{5}
Bi-210m (a)		6.0×10^{-1}	1.6×10^{1}	2.0×10^{-2}	5.4×10^{-1}	2.1×10^{-5}	5.7×10^{-4}
Bi-212 (a)		7.0×10^{-1}	1.9×10^{1}	6.0×10^{-1}	1.6×10^{1}	5.4×10^{5}	1.5×10^{7}
Bk-247	Berkelium (97)	8.0	2.2×10^{2}	8.0×10^{-4}	2.2×10^{-2}	3.8×10^{-2}	1.0
Bk-249 (a)		4.0×10^{1}	1.1×10^{3}	3.0×10^{-1}	8.1	6.1×10^{1}	1.6×10^{3}
Br-76	Bromine (35)	4.0×10^{-1}	1.1×10^{1}	4.0×10^{-1}	1.1×10^{1}	9.4×10^{4}	2.5×10^{6}
Br-77		3.0	8.1×10^{1}	3.0	8.1×10^{1}	2.6×10^{4}	7.1×10^{5}
Br-82		4.0×10^{-1}	1.1×10^{1}	4.0×10^{-1}	1.1×10^{1}	4.0×10^{4}	1.1×10^{6}
C-11	Carbon (6)	1.0	2.7×10^{1}	6.0×10^{-1}	1.6×10^{1}	3.1×10^{7}	8.4×10^{8}
C-14		4.0×10^{1}	1.1×10^{3}	3.0	8.1×10^{1}	1.6×10^{-1}	4.5
Ca-41	Calcium (20)	Unlimited	Unlimited	Unlimited	Unlimited	3.1×10^{-3}	8.5×10^{-2}
Ca-45		4.0×10^{1}	1.1×10^{3}	1.0	2.7×10^{1}	6.6×10^{2}	1.8×10^{4}
Ca-47 (a)		3.0	8.1×10^{1}	3.0×10^{-1}	8.1	2.3×10^{4}	6.1×10^{5}
Cd-109	Cadmium (48)	3.0×10^{1}	8.1×10^{2}	2.0	5.4×10^{1}	9.6×10^{1}	2.6×10^{3}
Cd-113m		4.0×10^{1}	1.1×10^{3}	5.0×10^{-1}	1.4×10^{1}	8.3	2.2×10^{2}
Cd-115 (a)		3.0	8.1×10^{1}	4.0×10^{-1}	1.1×10^{1}	1.9×10^{4}	5.1×10^{5}
Cd-115m		5.0×10^{-1}	1.4×10^{1}	5.0×10^{-1}	1.4×10^{1}	9.4×10^{2}	2.5×10^{4}
Ce-139	Cerium (58)	7.0	1.9×10^{2}	2.0	5.4×10^{1}	2.5×10^{2}	6.8×10^{3}
Ce-141		2.0×10^{1}	5.4×10^{2}	6.0×10^{-1}	1.6×10^{1}	1.1×10^{3}	2.8×10^{4}
Ce-143		9.0×10^{-1}	2.4×10^{1}	6.0×10^{-1}	1.6×10^{1}	2.5×10^{4}	6.6×10^{5}
Ce-144 (a)		2.0×10^{-1}	5.4	2.0×10^{-1}	5.4	1.2×10^{2}	3.2×10^{3}
Cf-248	Californium (98)	4.0×10^{1}	1.1×10^{3}	6.0×10^{-3}	1.6×10^{-1}	5.8×10^{1}	1.6×10^{3}
Cf-249		3.0	8.1×10^{1}	8.0×10^{-4}	2.2×10^{-2}	1.5×10^{-1}	4.1
Cf-250		2.0×10^{1}	5.4×10^{2}	2.0×10^{-3}	5.4×10^{-2}	4.0	1.1×10^{2}
Cf-251		7.0	1.9×10^{2}	7.0×10^{-4}	1.9×10^{-2}	5.9×10^{-2}	1.6
Cf-252		1.0×10^{-1}	2.7	3.0×10^{-3}	8.1×10^{-2}	2.0×10^{1}	5.4×10^{2}
Cf-253 (a)		4.0×10^{1}	1.1×10^{3}	4.0×10^{-2}	1.1	1.1×10^{3}	2.9×10^{4}
Cf-254		1.0×10^{-3}	2.7×10^{-2}	1.0×10^{-3}	2.7×10^{-2}	3.1×10^{2}	8.5×10^{3}
Cl-36	Chlorine (17)	1.0×10^{1}	2.7×10^{2}	6.0×10^{-1}	1.6×10^{1}	1.2×10^{-3}	3.3×10^{-2}
Cl-38		2.0×10^{-1}	5.4	2.0×10^{-1}	5.4	4.9×10^{6}	1.3×10^{8}
Cm-240	Curium (96)	4.0×10^{1}	1.1×10^{3}	2.0×10^{-2}	5.4×10^{-1}	7.5×10^{2}	2.0×10^{4}
Cm-241		2.0	5.4×10^{1}	1.0	2.7×10^{1}	6.1×10^{2}	1.7×10^{4}
Cm-242		4.0×10^{1}	1.1×10^{3}	1.0×10^{-2}	2.7×10^{-1}	1.2×10^{2}	3.3×10^{3}
Cm-243		9.0	2.4×10^{2}	1.0×10^{-3}	2.7×10^{-2}	1.9×10^{-3}	5.2×10^{1}
Cm-244		2.0×10^{1}	5.4×10^{2}	2.0×10^{-3}	5.4×10^{-2}	3.0	8.1×10^{1}
Cm-245		9.0	2.4×10^{2}	9.0×10^{-4}	2.4×10^{-2}	6.4×10^{-3}	1.7×10^{-1}
Cm-246		9.0	2.4×10^{2}	9.0×10^{-4}	2.4×10^{-2}	1.1×10^{-2}	3.1×10^{-1}
Cm-247 (a)		3.0	8.1×10^{1}	1.0×10^{-3}	2.7×10^{-2}	3.4×10^{-6}	9.3×10^{-5}
Cm-248		2.0×10^{-2}	5.4×10^{-1}	3.0×10^{-4}	8.1×10^{-3}	1.6×10^{-4}	4.2×10^{-3}
Co-55	Cobalt (27)	5.0×10^{-1}	1.4×10^{1}	5.0×10^{-1}	1.4×10^{1}	1.1×10^{5}	3.1×10^{6}
Co-56		3.0×10^{-1}	8.1	3.0×10^{-1}	8.1	1.1×10^{3}	3.0×10^{4}
Co-57		1.0×10^{1}	2.7×10^{2}	1.0×10^{1}	2.7×10^{2}	3.1×10^{2}	8.4×10^{3}
Co-58		1.0	2.7×10^{1}	1.0	2.7×10^{1}	1.2×10^{3}	3.2×10^{4}
Co-58m		4.0×10^{1}	1.1×10^{3}	4.0×10^{1}	1.1×10^{3}	2.2×10^{5}	5.9×10^{6}
Co-60		4.0×10^{-1}	1.1×10^{1}	4.0×10^{-1}	1.1×10^{1}	4.2×10^{1}	1.1×10^{3}
Cr-51	Chromium (24)	3.0×10^{1}	8.1×10^{2}	3.0×10^{1}	8.1×10^{2}	3.4×10^{3}	9.2×10^{4}

TABLE A–1—A_1 AND A_2 VALUES FOR RADIONUCLIDES—Continued

Symbol of radionuclide	Element and atomic number	A_1 (TBq)	A_1 (Ci)[b]	A_2 (TBq)	A_2 (Ci)[b]	Specific activity	
						(TBq/g)	(Ci/g)
Cs-129	Cesium (55)	4.0	1.1×10^{2}	4.0	1.1×10^{2}	2.8×10^{4}	7.6×10^{5}
Cs-131		3.0×10^{1}	8.1×10^{2}	3.0×10^{1}	8.1×10^{2}	3.8×10^{3}	1.0×10^{5}
Cs-132		1.0	2.7×10^{1}	1.0	2.7×10^{1}	5.7×10^{3}	1.5×10^{5}
Cs-134		7.0×10^{-1}	1.9×10^{1}	7.0×10^{-1}	1.9×10^{1}	4.8×10^{1}	1.3×10^{3}
Cs-134m		4.0×10^{1}	1.1×10^{3}	6.0×10^{-1}	1.6×10^{1}	3.0×10^{5}	8.0×10^{6}
Cs-135		4.0×10^{1}	1.1×10^{3}	1.0	2.7×10^{1}	4.3×10^{-5}	1.2×10^{-3}
Cs-136		5.0×10^{-1}	1.4×10^{1}	5.0×10^{-1}	1.4×10^{1}	2.7×10^{3}	7.3×10^{4}
Cs-137 (a)		2.0	5.4×10^{1}	6.0×10^{-1}	1.6×10^{1}	3.2	8.7×10^{1}
Cu-64	Copper (29)	6.0	1.6×10^{2}	1.0	2.7×10^{1}	1.4×10^{5}	3.9×10^{6}
Cu-67		1.0×10^{1}	2.7×10^{2}	7.0×10^{-1}	1.9×10^{1}	2.8×10^{4}	7.6×10^{5}
Dy-159	Dysprosium (66)	2.0×10^{1}	5.4×10^{2}	2.0×10^{1}	5.4×10^{2}	2.1×10^{2}	5.7×10^{3}
Dy-165		9.0×10^{-1}	2.4×10^{1}	6.0×10^{-1}	1.6×10^{1}	3.0×10^{5}	8.2×10^{6}
Dy-166 (a)		9.0×10^{-1}	2.4×10^{1}	3.0×10^{-1}	8.1	8.6×10^{3}	2.3×10^{5}
Er-169	Erbium (68)	4.0×10^{1}	1.1×10^{3}	1.0	2.7×10^{1}	3.1×10^{3}	8.3×10^{4}
Er-171		8.0×10^{-1}	2.2×10^{1}	5.0×10^{-1}	1.4×10^{1}	9.0×10^{4}	2.4×10^{6}
Eu-147	Europium (63)	2.0	5.4×10^{1}	2.0	5.4×10^{1}	1.4×10^{3}	3.7×10^{4}
Eu-148		5.0×10^{-1}	1.4×10^{1}	5.0×10^{-1}	1.4×10^{1}	6.0×10^{2}	1.6×10^{4}
Eu-149		2.0×10^{1}	5.4×10^{2}	2.0×10^{1}	5.4×10^{2}	3.5×10^{2}	9.4×10^{3}
Eu-150 (short lived)		2.0	5.4×10^{1}	7.0×10^{-1}	1.9×10^{1}	6.1×10^{4}	1.6×10^{6}
Eu-150 (long lived)		7.0×10^{-1}	1.9×10^{1}	7.0×10^{-1}	1.9×10^{1}	6.1×10^{4}	1.6×10^{6}
Eu-152		1.0	2.7×10^{1}	1.0	2.7×10^{1}	6.5	1.8×10^{2}
Eu-152m		8.0×10^{-1}	2.2×10^{1}	8.0×10^{-1}	2.2×10^{1}	8.2×10^{4}	2.2×10^{6}
Eu-154		9.0×10^{-1}	2.4×10^{1}	6.0×10^{-1}	1.6×10^{1}	9.8	2.6×10^{2}
Eu-155		2.0×10^{1}	5.4×10^{2}	3.0	8.1×10^{1}	1.8×10^{1}	4.9×10^{2}
Eu-156		7.0×10^{-1}	1.9×10^{1}	7.0×10^{-1}	1.9×10^{1}	2.0×10^{3}	5.5×10^{4}
F-18	Fluorine (9)	1.0	2.7×10^{1}	6.0×10^{-1}	1.6×10^{1}	3.5×10^{6}	9.5×10^{7}
Fe-52 (a)	Iron (26)	3.0×10^{-1}	8.1	3.0×10^{-1}	8.1	2.7×10^{5}	7.3×10^{6}
Fe-55		4.0×10^{1}	1.1×10^{3}	4.0×10^{1}	1.1×10^{3}	8.8×10^{1}	2.4×10^{3}
Fe-59		9.0×10^{-1}	2.4×10^{1}	9.0×10^{-1}	2.4×10^{1}	1.8×10^{3}	5.0×10^{4}
Fe-60 (a)		4.0×10^{1}	1.1×10^{3}	2.0×10^{-1}	5.4	7.4×10^{-4}	2.0×10^{-2}
Ga-67	Gallium (31)	7.0	1.9×10^{2}	3.0	8.1×10^{1}	2.2×10^{4}	6.0×10^{5}
Ga-68		5.0×10^{-1}	1.4×10^{1}	5.0×10^{-1}	1.4×10^{1}	1.5×10^{6}	4.1×10^{7}
Ga-72		4.0×10^{-1}	1.1×10^{1}	4.0×10^{-1}	1.1×10^{1}	1.1×10^{5}	3.1×10^{6}
Gd-146 (a)	Gadolinium (64)	5.0×10^{-1}	1.4×10^{1}	5.0×10^{-1}	1.4×10^{1}	6.9×10^{2}	1.9×10^{4}
Gd-148		2.0×10^{1}	5.4×10^{2}	2.0×10^{-3}	5.4×10^{-2}	1.2	3.2×10^{1}
Gd-153		1.0×10^{1}	2.7×10^{2}	9.0	2.4×10^{2}	1.3×10^{2}	3.5×10^{3}
Gd-159		3.0	8.1×10^{1}	6.0×10^{-1}	1.6×10^{1}	3.9×10^{4}	1.1×10^{6}
Ge-68 (a)	Germanium (32)	5.0×10^{-1}	1.4×10^{1}	5.0×10^{-1}	1.4×10^{1}	2.6×10^{2}	7.1×10^{3}
Ge-71		4.0×10^{1}	1.1×10^{3}	4.0×10^{1}	1.1×10^{3}	5.8×10^{3}	1.6×10^{5}
Ge-77		3.0×10^{-1}	8.1	3.0×10^{-1}	8.1	1.3×10^{5}	3.6×10^{6}
Hf-172 (a)	Hafnium (72)	6.0×10^{-1}	1.6×10^{1}	6.0×10^{-1}	1.6×10^{1}	4.1×10^{1}	1.1×10^{3}
Hf-175		3.0	8.1×10^{1}	3.0	8.1×10^{1}	3.9×10^{2}	1.1×10^{4}
Hf-181		2.0	5.4×10^{1}	5.0×10^{-1}	1.4×10^{1}	6.3×10^{2}	1.7×10^{4}
Hf-182		Unlimited	Unlimited	Unlimited	Unlimited	8.1×10^{-6}	2.2×10^{-4}
Hg-194 (a)	Mercury (80)	1.0	2.7×10^{1}	1.0	2.7×10^{1}	1.3×10^{-1}	3.5
Hg-195m (a)		3.0	8.1×10^{1}	7.0×10^{-1}	1.9×10^{1}	1.5×10^{4}	4.0×10^{5}
Hg-197		2.0×10^{1}	5.4×10^{2}	1.0×10^{1}	2.7×10^{2}	9.2×10^{3}	2.5×10^{5}
Hg-197m		1.0×10^{1}	2.7×10^{2}	4.0×10^{-1}	1.1×10^{1}	2.5×10^{4}	6.7×10^{5}
Hg-203		5.0	1.4×10^{2}	1.0	2.7×10^{1}	5.1×10^{2}	1.4×10^{4}
Ho-166	Holmium (67)	4.0×10^{-1}	1.1×10^{1}	4.0×10^{-1}	1.1×10^{1}	2.6×10^{4}	7.0×10^{5}
Ho-166m		6.0×10^{-1}	1.6×10^{1}	5.0×10^{-1}	1.4×10^{1}	6.6×10^{-2}	1.8
I-123	Iodine (53)	6.0	1.6×10^{2}	3.0	8.1×10^{1}	7.1×10^{4}	1.9×10^{6}
I-124		1.0	2.7×10^{1}	1.0	2.7×10^{1}	9.3×10^{3}	2.5×10^{5}
I-125		2.0×10^{1}	5.4×10^{2}	3.0	8.1×10^{1}	6.4×10^{2}	1.7×10^{4}
I-126		2.0	5.4×10^{1}	1.0	2.7×10^{1}	2.9×10^{3}	8.0×10^{4}
I-129		Unlimited	Unlimited	Unlimited	Unlimited	6.5×10^{-6}	1.8×10^{-4}
I-131		3.0	8.1×10^{1}	7.0×10^{-1}	1.9×10^{1}	4.6×10^{3}	1.2×10^{5}
I-132		4.0×10^{-1}	1.1×10^{1}	4.0×10^{-1}	1.1×10^{1}	3.8×10^{5}	1.0×10^{7}
I-133		7.0×10^{-1}	1.9×10^{1}	6.0×10^{-1}	1.6×10^{1}	4.2×10^{4}	1.1×10^{6}
I-134		3.0×10^{-1}	8.1	3.0×10^{-1}	8.1	9.9×10^{5}	2.7×10^{7}
I-135 (a)		6.0×10^{-1}	1.6×10^{1}	6.0×10^{-1}	1.6×10^{1}	1.3×10^{5}	3.5×10^{6}
In-111	Indium (49)	3.0	8.1×10^{1}	3.0	8.1×10^{1}	1.5×10^{4}	4.2×10^{5}
In-113m		4.0	1.1×10^{2}	2.0	5.4×10^{1}	6.2×10^{5}	1.7×10^{7}
In-114m (a)		1.0×10^{1}	2.7×10^{2}	5.0×10^{-1}	1.4×10^{1}	8.6×10^{2}	2.3×10^{4}
In-115m		7.0	1.9×10^{2}	1.0	2.7×10^{1}	2.2×10^{5}	6.1×10^{6}
Ir-189 (a)	Iridium (77)	1.0×10^{1}	2.7×10^{2}	1.0×10^{1}	2.7×10^{2}	1.9×10^{3}	5.2×10^{4}
Ir-190		7.0×10^{-1}	1.9×10^{1}	7.0×10^{-1}	1.9×10^{1}	2.3×10^{3}	6.2×10^{4}
Ir-192		[c] 1.0	[c] 2.7×10^{1}	6.0×10^{-1}	1.6×10^{1}	3.4×10^{2}	9.2×10^{3}
Ir-194		3.0×10^{-1}	8.1	3.0×10^{-1}	8.1	3.1×10^{4}	8.4×10^{5}
K-40	Potassium (19)	9.0×10^{-1}	2.4×10^{1}	9.0×10^{-1}	2.4×10^{1}	2.4×10^{-7}	6.4×10^{-6}

TABLE A–1—A_1 AND A_2 VALUES FOR RADIONUCLIDES—Continued

Symbol of radionuclide	Element and atomic number	A_1 (TBq)	A_1 (Ci)[b]	A_2 (TBq)	A_2 (Ci)[b]	Specific activity	
						(TBq/g)	(Ci/g)
K-42		2.0×10^{-1}	5.4	2.0×10^{-1}	5.4	2.2×10^{5}	6.0×10^{6}
K-43		7.0×10^{-1}	1.9×10^{1}	6.0×10^{-1}	1.6×10^{1}	1.2×10^{5}	3.3×10^{6}
Kr-79	Krypton (36)	4.0	1.1×10^{2}	2.0	5.4×10^{1}	4.2×10^{4}	1.1×10^{6}
Kr-81		4.0×10^{1}	1.1×10^{3}	4.0×10^{1}	1.1×10^{3}	7.8×10^{-4}	2.1×10^{-2}
Kr-85		1.0×10^{1}	2.7×10^{2}	1.0×10^{1}	2.7×10^{2}	1.5×10^{1}	3.9×10^{2}
Kr-85m		8.0	2.2×10^{2}	3.0	8.1×10^{1}	3.0×10^{5}	8.2×10^{6}
Kr-87		2.0×10^{-1}	5.4	2.0×10^{-1}	5.4	1.0×10^{6}	2.8×10^{7}
La-137	Lanthanum (57)	3.0×10^{1}	8.1×10^{2}	6.0	1.6×10^{2}	1.6×10^{-3}	4.4×10^{-2}
La-140		4.0×10^{-1}	1.1×10^{1}	4.0×10^{-1}	1.1×10^{1}	2.1×10^{4}	5.6×10^{5}
Lu-172	Lutetium (71)	6.0×10^{-1}	1.6×10^{1}	6.0×10^{-1}	1.6×10^{1}	4.2×10^{3}	1.1×10^{5}
Lu-173		8.0	2.2×10^{2}	8.0	2.2×10^{2}	5.6×10^{1}	1.5×10^{3}
Lu-174		9.0	2.4×10^{2}	9.0	2.4×10^{2}	2.3×10^{1}	6.2×10^{2}
Lu-174m		2.0×10^{1}	5.4×10^{2}	1.0×10^{1}	2.7×10^{2}	2.0×10^{2}	5.3×10^{3}
Lu-177		3.0×10^{1}	8.1×10^{2}	7.0×10^{-1}	1.9×10^{1}	4.1×10^{3}	1.1×10^{5}
Mg-28 (a)	Magnesium (12)	3.0×10^{-1}	8.1	3.0×10^{-1}	8.1	2.0×10^{5}	5.4×10^{6}
Mn-52	Manganese (25)	3.0×10^{-1}	8.1	3.0×10^{-1}	8.1	1.6×10^{4}	4.4×10^{5}
Mn-53		Unlimited	Unlimited	Unlimited	Unlimited	6.8×10^{-5}	1.8×10^{-3}
Mn-54		1.0	2.7×10^{1}	1.0	2.7×10^{1}	2.9×10^{2}	7.7×10^{3}
Mn-56		3.0×10^{-1}	8.1	3.0×10^{-1}	8.1	8.0×10^{5}	2.2×10^{7}
Mo-93	Molybdenum (42)	4.0×10^{1}	1.1×10^{3}	2.0×10^{1}	5.4×10^{2}	4.1×10^{-2}	1.1
Mo-99 [a h]		1.0	2.7×10^{1}	6.0×10^{-1}	1.6×10^{1}	1.8×10^{4}	4.8×10^{5}
N-13	Nitrogen (7)	9.0×10^{-1}	2.4×10^{1}	6.0×10^{-1}	1.6×10^{1}	5.4×10^{7}	1.5×10^{9}
Na-22	Sodium (11)	5.0×10^{-1}	1.4×10^{1}	5.0×10^{-1}	1.4×10^{1}	2.3×10^{2}	6.3×10^{3}
Na-24		2.0×10^{-1}	5.4	2.0×10^{-1}	5.4	3.2×10^{5}	8.7×10^{6}
Nb-93m	Niobium (41)	4.0×10^{1}	1.1×10^{3}	3.0×10^{1}	8.1×10^{2}	8.8	2.4×10^{2}
Nb-94		7.0×10^{-1}	1.9×10^{1}	7.0×10^{-1}	1.9×10^{1}	6.9×10^{-3}	1.9×10^{-1}
Nb-95		1.0	2.7×10^{1}	1.0	2.7×10^{1}	1.5×10^{3}	3.9×10^{4}
Nb-97		9.0×10^{-1}	2.4×10^{1}	6.0×10^{-1}	1.6×10^{1}	9.9×10^{5}	2.7×10^{7}
Nd-147	Neodymium (60)	6.0	1.6×10^{2}	6.0×10^{-1}	1.6×10^{1}	3.0×10^{3}	8.1×10^{4}
Nd-149		6.0×10^{-1}	1.6×10^{1}	5.0×10^{-1}	1.4×10^{1}	4.5×10^{5}	1.2×10^{7}
Ni-59	Nickel (28)	Unlimited	Unlimited	Unlimited	Unlimited	3.0×10^{-3}	8.0×10^{-2}
Ni-63		4.0×10^{1}	1.1×10^{3}	3.0×10^{1}	8.1×10^{2}	2.1	5.7×10^{1}
Ni-65		4.0×10^{-1}	1.1×10^{1}	4.0×10^{-1}	1.1×10^{1}	7.1×10^{5}	1.9×10^{7}
Np-235	Neptunium (93)	4.0×10^{1}	1.1×10^{3}	4.0×10^{1}	1.1×10^{3}	5.2×10^{1}	1.4×10^{3}
Np-236 (short-lived)		2.0×10^{1}	5.4×10^{2}	2.0	5.4×10^{1}	4.7×10^{-4}	1.3×10^{-2}
Np-236 (long-lived)		9.0×10^{0}	2.4×10^{2}	2.0×10^{-2}	5.4×10^{-1}	4.7×10^{-4}	1.3×10^{-2}
Np-237		2.0×10^{1}	5.4×10^{2}	2.0×10^{-3}	5.4×10^{-2}	2.6×10^{-5}	7.1×10^{-4}
Np-239		7.0	1.9×10^{2}	4.0×10^{-1}	1.1×10^{1}	8.6×10^{3}	2.3×10^{5}
Os-185	Osmium (76)	1.0	2.7×10^{1}	1.0	2.7×10^{1}	2.8×10^{2}	7.5×10^{3}
Os-191		1.0×10^{1}	2.7×10^{2}	2.0	5.4×10^{1}	1.6×10^{3}	4.4×10^{4}
Os-191m		4.0×10^{1}	1.1×10^{3}	3.0×10^{1}	8.1×10^{2}	4.6×10^{4}	1.3×10^{6}
Os-193		2.0	5.4×10^{1}	6.0×10^{-1}	1.6×10^{1}	2.0×10^{4}	5.3×10^{5}
Os-194 (a)		3.0×10^{-1}	8.1	3.0×10^{-1}	8.1	1.1×10^{1}	3.1×10^{2}
P-32	Phosphorus (15)	5.0×10^{-1}	1.4×10^{1}	5.0×10^{-1}	1.4×10^{1}	1.1×10^{4}	2.9×10^{5}
P-33		4.0×10^{1}	1.1×10^{3}	1.0	2.7×10^{1}	5.8×10^{3}	1.6×10^{5}
Pa-230 (a)	Protactinium (91)	2.0	5.4×10^{1}	7.0×10^{-2}	1.9	1.2×10^{3}	3.3×10^{4}
Pa-231		4.0	1.1×10^{2}	4.0×10^{-4}	1.1×10^{-2}	1.7×10^{-3}	4.7×10^{-2}
Pa-233		5.0	1.4×10^{2}	7.0×10^{-1}	1.9×10^{1}	7.7×10^{2}	2.1×10^{4}
Pb-201	Lead (82)	1.0	2.7×10^{1}	1.0	2.7×10^{1}	6.2×10^{4}	1.7×10^{6}
Pb-202		4.0×10^{1}	1.1×10^{3}	2.0×10^{1}	5.4×10^{2}	1.2×10^{-4}	3.4×10^{-3}
Pb-203		4.0	1.1×10^{2}	3.0	8.1×10^{1}	1.1×10^{4}	3.0×10^{5}
Pb-205		Unlimited	Unlimited	Unlimited	Unlimited	4.5×10^{-6}	1.2×10^{-4}
Pb-210 (a)		1.0	2.7×10^{1}	5.0×10^{-2}	1.4	2.8	7.6×10^{1}
Pb-212 (a)		7.0×10^{-1}	1.9×10^{1}	2.0×10^{-1}	5.4	5.1×10^{4}	1.4×10^{6}
Pd-103 (a)	Palladium (46)	4.0×10^{1}	1.1×10^{3}	4.0×10^{1}	1.1×10^{3}	2.8×10^{3}	7.5×10^{4}
Pd-107		Unlimited	Unlimited	Unlimited	Unlimited	1.9×10^{-5}	5.1×10^{-4}
Pd-109		2.0	5.4×10^{1}	5.0×10^{-1}	1.4×10^{1}	7.9×10^{4}	2.1×10^{6}
Pm-143	Promethium (61)	3.0	8.1×10^{1}	3.0	8.1×10^{1}	1.3×10^{2}	3.4×10^{3}
Pm-144		7.0×10^{-1}	1.9×10^{1}	7.0×10^{-1}	1.9×10^{1}	9.2×10^{1}	2.5×10^{3}
Pm-145		3.0×10^{1}	8.1×10^{2}	1.0×10^{1}	2.7×10^{2}	5.2	1.4×10^{2}
Pm-147		4.0×10^{1}	1.1×10^{3}	2.0	5.4×10^{1}	3.4×10^{1}	9.3×10^{2}
Pm-148m (a)		8.0×10^{-1}	2.2×10^{1}	7.0×10^{-1}	1.9×10^{1}	7.9×10^{2}	2.1×10^{4}
Pm-149		2.0	5.4×10^{1}	6.0×10^{-1}	1.6×10^{1}	1.5×10^{4}	4.0×10^{5}
Pm-151		2.0	5.4×10^{1}	6.0×10^{-1}	1.6×10^{1}	2.7×10^{4}	7.3×10^{5}
Po-210	Polonium (84)	4.0×10^{1}	1.1×10^{3}	2.0×10^{-2}	5.4×10^{-1}	1.7×10^{2}	4.5×10^{3}
Pr-142	Praseodymium (59)	4.0×10^{-1}	1.1×10^{1}	4.0×10^{-1}	1.1×10^{1}	4.3×10^{4}	1.2×10^{6}
Pr-143		3.0	8.1×10^{1}	6.0×10^{-1}	1.6×10^{1}	2.5×10^{3}	6.7×10^{4}
Pt-188 (a)	Platinum (78)	1.0	2.7×10^{1}	8.0×10^{-1}	2.2×10^{1}	2.5×10^{3}	6.8×10^{4}
Pt-191		4.0	1.1×10^{2}	3.0	8.1×10^{1}	8.7×10^{3}	2.4×10^{5}
Pt-193		4.0×10^{1}	1.1×10^{3}	4.0×10^{1}	1.1×10^{3}	1.4	3.7×10^{1}

TABLE A–1—A_1 AND A_2 VALUES FOR RADIONUCLIDES—Continued

Symbol of radionuclide	Element and atomic number	A_1 (TBq)	A_1 (Ci)[b]	A_2 (TBq)	A_2 (Ci)[b]	Specific activity	
						(TBq/g)	(Ci/g)
Pt-193m		4.0×10^{1}	1.1×10^{3}	5.0×10^{-1}	1.4×10^{1}	5.8×10^{3}	1.6×10^{5}
Pt-195m		1.0×10^{1}	2.7×10^{2}	5.0×10^{-1}	1.4×10^{1}	6.2×10^{3}	1.7×10^{5}
Pt-197		2.0×10^{1}	5.4×10^{2}	6.0×10^{-1}	1.6×10^{1}	3.2×10^{4}	8.7×10^{5}
Pt-197m		1.0×10^{1}	2.7×10^{2}	6.0×10^{-1}	1.6×10^{1}	3.7×10^{5}	1.0×10^{7}
Pu-236	Plutonium (94)	3.0×10^{1}	8.1×10^{2}	3.0×10^{-3}	8.1×10^{-2}	2.0×10^{1}	5.3×10^{2}
Pu-237		2.0×10^{1}	5.4×10^{2}	2.0×10^{1}	5.4×10^{2}	4.5×10^{2}	1.2×10^{4}
Pu-238		1.0×10^{1}	2.7×10^{2}	1.0×10^{-3}	2.7×10^{-2}	6.3×10^{-1}	1.7×10^{1}
Pu-239		1.0×10^{1}	2.7×10^{2}	1.0×10^{-3}	2.7×10^{-2}	2.3×10^{-3}	6.2×10^{-2}
Pu-240		1.0×10^{1}	2.7×10^{2}	1.0×10^{-3}	2.7×10^{-2}	8.4×10^{-3}	2.3×10^{-1}
Pu-241 (a)		4.0×10^{1}	1.1×10^{3}	6.0×10^{-2}	1.6	3.8	1.0×10^{2}
Pu-242		1.0×10^{1}	2.7×10^{2}	1.0×10^{-3}	2.7×10^{-2}	1.5×10^{-4}	3.9×10^{-3}
Pu-244 (a)		4.0×10^{-1}	1.1×10^{1}	1.0×10^{-3}	2.7×10^{-2}	6.7×10^{-7}	1.8×10^{-5}
Ra-223 (a)	Radium (88)	4.0×10^{-1}	1.1×10^{1}	7.0×10^{-3}	1.9×10^{-1}	1.9×10^{3}	5.1×10^{4}
Ra-224 (a)		4.0×10^{-1}	1.1×10^{1}	2.0×10^{-2}	5.4×10^{-1}	5.9×10^{3}	1.6×10^{5}
Ra-225 (a)		2.0×10^{-1}	5.4	4.0×10^{-3}	1.1×10^{-1}	1.5×10^{3}	3.9×10^{4}
Ra-226 (a)		2.0×10^{-1}	5.4	3.0×10^{-3}	8.1×10^{-2}	3.7×10^{-2}	1.0
Ra-228 (a)		6.0×10^{-1}	1.6×10^{1}	2.0×10^{-2}	5.4×10^{-1}	1.0×10^{1}	2.7×10^{2}
Rb-81	Rubidium (37)	2.0	5.4×10^{1}	8.0×10^{-1}	2.2×10^{1}	3.1×10^{5}	8.4×10^{6}
Rb-83 (a)		2.0	5.4×10^{1}	2.0	5.4×10^{1}	6.8×10^{2}	1.8×10^{4}
Rb-84		1.0	2.7×10^{1}	1.0	2.7×10^{1}	1.8×10^{3}	4.7×10^{4}
Rb-86		5.0×10^{-1}	1.4×10^{1}	5.0×10^{-1}	1.4×10^{1}	3.0×10^{3}	8.1×10^{4}
Rb-87		Unlimited	Unlimited	Unlimited	Unlimited	3.2×10^{-9}	8.6×10^{-8}
Rb(nat)		Unlimited	Unlimited	Unlimited	Unlimited	6.7×10^{6}	1.8×10^{8}
Re-184	Rhenium (75)	1.0	2.7×10^{1}	1.0	2.7×10^{1}	6.9×10^{2}	1.9×10^{4}
Re-184m		3.0	8.1×10^{1}	1.0	2.7×10^{1}	1.6×10^{2}	4.3×10^{3}
Re-186		2.0	5.4×10^{1}	6.0×10^{-1}	1.6×10^{1}	6.9×10^{3}	1.9×10^{5}
Re-187		Unlimited	Unlimited	Unlimited	Unlimited	1.4×10^{-9}	3.8×10^{-8}
Re-188		4.0×10^{-1}	1.1×10^{1}	4.0×10^{-1}	1.1×10^{1}	3.6×10^{4}	9.8×10^{5}
Re-189 (a)		3.0	8.1×10^{1}	6.0×10^{-1}	1.6×10^{1}	2.5×10^{4}	6.8×10^{5}
Re(nat)		Unlimited	Unlimited	Unlimited	Unlimited	0.0	2.4×10^{-8}
Rh-99	Rhodium (45)	2.0	5.4×10^{1}	2.0	5.4×10^{1}	3.0×10^{3}	8.2×10^{4}
Rh-101		4.0	1.1×10^{2}	3.0	8.1×10^{1}	4.1×10^{1}	1.1×10^{3}
Rh-102		5.0×10^{-1}	1.4×10^{1}	5.0×10^{-1}	1.4×10^{1}	4.5×10^{1}	1.2×10^{3}
Rh-102m		2.0	5.4×10^{1}	2.0	5.4×10^{1}	2.3×10^{2}	6.2×10^{3}
Rh-103m		4.0×10^{1}	1.1×10^{3}	4.0×10^{1}	1.1×10^{3}	1.2×10^{6}	3.3×10^{7}
Rh-105		1.0×10^{1}	2.7×10^{2}	8.0×10^{-1}	2.2×10^{1}	3.1×10^{4}	8.4×10^{5}
Rn-222 (a)	Radon (86)	3.0×10^{-1}	8.1	4.0×10^{-3}	1.1×10^{-1}	5.7×10^{3}	1.5×10^{5}
Ru-97	Ruthenium (44)	5.0	1.4×10^{2}	5.0	1.4×10^{2}	1.7×10^{4}	4.6×10^{5}
Ru-103 (a)		2.0	5.4×10^{1}	2.0	5.4×10^{1}	1.2×10^{3}	3.2×10^{4}
Ru-105		1.0	2.7×10^{1}	6.0×10^{-1}	1.6×10^{1}	2.5×10^{5}	6.7×10^{6}
Ru-106 (a)		2.0×10^{-1}	5.4	2.0×10^{-1}	5.4	1.2×10^{2}	3.3×10^{3}
S-35	Sulphur (16)	4.0×10^{1}	1.1×10^{3}	3.0	8.1×10^{1}	1.6×10^{3}	4.3×10^{4}
Sb-122	Antimony (51)	4.0×10^{-1}	1.1×10^{1}	4.0×10^{-1}	1.1×10^{1}	1.5×10^{4}	4.0×10^{5}
Sb-124		6.0×10^{-1}	1.6×10^{1}	6.0×10^{-1}	1.6×10^{1}	6.5×10^{2}	1.7×10^{4}
Sb-125		2.0	5.4×10^{1}	1.0	2.7×10^{1}	3.9×10^{1}	1.0×10^{3}
Sb-126		4.0×10^{-1}	1.1×10^{1}	4.0×10^{-1}	1.1×10^{1}	3.1×10^{3}	8.4×10^{4}
Sc-44	Scandium (21)	5.0×10^{-1}	1.4×10^{1}	5.0×10^{-1}	1.4×10^{1}	6.7×10^{5}	1.8×10^{7}
Sc-46		5.0×10^{-1}	1.4×10^{1}	5.0×10^{-1}	1.4×10^{1}	1.3×10^{3}	3.4×10^{4}
Sc-47		1.0×10^{1}	2.7×10^{2}	7.0×10^{-1}	1.9×10^{1}	3.1×10^{4}	8.3×10^{5}
Sc-48		3.0×10^{-1}	8.1	3.0×10^{-1}	8.1	5.5×10^{4}	1.5×10^{6}
Se-75	Selenium (34)	3.0	8.1×10^{1}	3.0	8.1×10^{1}	5.4×10^{2}	1.5×10^{4}
Se-79		4.0×10^{1}	1.1×10^{3}	2.0	5.4×10^{1}	2.6×10^{-3}	7.0×10^{-2}
Si-31	Silicon (14)	6.0×10^{-1}	1.6×10^{1}	6.0×10^{-1}	1.6×10^{1}	1.4×10^{6}	3.9×10^{7}
Si-32		4.0×10^{1}	1.1×10^{3}	5.0×10^{-1}	1.4×10^{1}	3.9	1.1×10^{2}
Sm-145	Samarium (62)	1.0×10^{1}	2.7×10^{2}	1.0×10^{1}	2.7×10^{2}	9.8×10^{1}	2.6×10^{3}
Sm-147		Unlimited	Unlimited	Unlimited	Unlimited	8.5×10^{-10}	2.3×10^{-8}
Sm-151		4.0×10^{1}	1.1×10^{3}	1.0×10^{1}	2.7×10^{2}	9.7×10^{-1}	2.6×10^{1}
Sm-153		9.0	2.4×10^{2}	6.0×10^{-1}	1.6×10^{1}	1.6×10^{4}	4.4×10^{5}
Sn-113 (a)	Tin (50)	4.0	1.1×10^{2}	2.0	5.4×10^{1}	3.7×10^{2}	1.0×10^{4}
Sn-117m		7.0	1.9×10^{2}	4.0×10^{-1}	1.1×10^{1}	3.0×10^{3}	8.2×10^{4}
Sn-119m		4.0×10^{1}	1.1×10^{3}	3.0×10^{1}	8.1×10^{2}	1.4×10^{2}	3.7×10^{3}
Sn-121m (a)		4.0×10^{1}	1.1×10^{3}	9.0×10^{-1}	2.4×10^{1}	2.0	5.4×10^{1}
Sn-123		8.0×10^{-1}	2.2×10^{1}	6.0×10^{-1}	1.6×10^{1}	3.0×10^{2}	8.2×10^{3}
Sn-125		4.0×10^{-1}	1.1×10^{1}	4.0×10^{-1}	1.1×10^{1}	4.0×10^{3}	1.1×10^{5}
Sn-126 (a)		6.0×10^{-1}	1.6×10^{1}	4.0×10^{-1}	1.1×10^{1}	1.0×10^{-3}	2.8×10^{-2}
Sr-82 (a)	Strontium (38)	2.0×10^{-1}	5.4	2.0×10^{-1}	5.4	2.3×10^{3}	6.2×10^{4}
Sr-85		2.0	5.4×10^{1}	2.0	5.4×10^{1}	8.8×10^{2}	2.4×10^{4}
Sr-85m		5.0	1.4×10^{2}	5.0	1.4×10^{2}	1.2×10^{6}	3.3×10^{7}
Sr-87m		3.0	8.1×10^{1}	3.0	8.1×10^{1}	4.8×10^{5}	1.3×10^{7}

TABLE A–1—A_1 AND A_2 VALUES FOR RADIONUCLIDES—Continued

Symbol of radionuclide	Element and atomic number	A_1 (TBq)	A_1 (Ci)[b]	A_2 (TBq)	A_2 (Ci)[b]	Specific activity	
						(TBq/g)	(Ci/g)
Sr-89		6.0×10^{-1}	1.6×10^{1}	6.0×10^{-1}	1.6×10^{1}	1.1×10^{3}	2.9×10^{4}
Sr-90 (a)		3.0×10^{-1}	8.1	3.0×10^{-1}	8.1	5.1	1.4×10^{2}
Sr-91 (a)		3.0×10^{-1}	8.1	3.0×10^{-1}	8.1	1.3×10^{5}	3.6×10^{6}
Sr-92 (a)		1.0	2.7×10^{1}	3.0×10^{-1}	8.1	4.7×10^{5}	1.3×10^{7}
T(H-3)	Tritium (1)	4.0×10^{1}	1.1×10^{3}	4.0×10^{1}	1.1×10^{3}	3.6×10^{2}	9.7×10^{3}
Ta-178 (long-lived)	Tantalum (73)	1.0	2.7×10^{1}	8.0×10^{-1}	2.2×10^{1}	4.2×10^{6}	1.1×10^{8}
Ta-179		3.0×10^{1}	8.1×10^{2}	3.0×10^{1}	8.1×10^{2}	4.1×10^{1}	1.1×10^{3}
Ta-182		9.0×10^{-1}	2.4×10^{1}	5.0×10^{-1}	1.4×10^{1}	2.3×10^{2}	6.2×10^{3}
Tb-157	Terbium (65)	4.0×10^{1}	1.1×10^{3}	4.0×10^{1}	1.1×10^{3}	5.6×10^{-1}	1.5×10^{1}
Tb-158		1.0	2.7×10^{1}	1.0	2.7×10^{1}	5.6×10^{-1}	1.5×10^{1}
Tb-160		1.0	2.7×10^{1}	6.0×10^{-1}	1.6×10^{1}	4.2×10^{2}	1.1×10^{4}
Tc-95m (a)	Technetium (43)	2.0	5.4×10^{1}	2.0	5.4×10^{1}	8.3×10^{2}	2.2×10^{4}
Tc-96		4.0×10^{-1}	1.1×10^{1}	4.0×10^{-1}	1.1×10^{1}	1.2×10^{4}	3.2×10^{5}
Tc-96m (a)		4.0×10^{-1}	1.1×10^{1}	4.0×10^{-1}	1.1×10^{1}	1.4×10^{6}	3.8×10^{7}
Tc-97		Unlimited	Unlimited	Unlimited	Unlimited	5.2×10^{-5}	1.4×10^{-3}
Tc-97m		4.0×10^{1}	1.1×10^{3}	1.0	2.7×10^{1}	5.6×10^{2}	1.5×10^{4}
Tc-98		8.0×10^{-1}	2.2×10^{1}	7.0×10^{-1}	1.9×10^{1}	3.2×10^{-5}	8.7×10^{-4}
Tc-99		4.0×10^{1}	1.1×10^{3}	9.0×10^{-1}	2.4×10^{1}	6.3×10^{-4}	1.7×10^{-2}
Tc-99m		1.0×10^{1}	2.7×10^{2}	4.0	1.1×10^{2}	1.9×10^{5}	5.3×10^{6}
Te-121	Tellurium (52)	2.0	5.4×10^{1}	2.0	5.4×10^{1}	2.4×10^{3}	6.4×10^{4}
Te-121m		5.0	1.4×10^{2}	3.0	8.1×10^{1}	2.6×10^{2}	7.0×10^{3}
Te-123m		8.0	2.2×10^{2}	1.0	2.7×10^{1}	3.3×10^{2}	8.9×10^{3}
Te-125m		2.0×10^{1}	5.4×10^{2}	9.0×10^{-1}	2.4×10^{1}	6.7×10^{2}	1.8×10^{4}
Te-127		2.0×10^{1}	5.4×10^{2}	7.0×10^{-1}	1.9×10^{1}	9.8×10^{4}	2.6×10^{6}
Te-127m (a)		2.0×10^{1}	5.4×10^{2}	5.0×10^{-1}	1.4×10^{1}	3.5×10^{2}	9.4×10^{3}
Te-129		7.0×10^{-1}	1.9×10^{1}	6.0×10^{-1}	1.6×10^{1}	7.7×10^{5}	2.1×10^{7}
Te-129m (a)		8.0×10^{-1}	2.2×10^{1}	4.0×10^{-1}	1.1×10^{1}	1.1×10^{3}	3.0×10^{4}
Te-131m (a)		7.0×10^{-1}	1.9×10^{1}	5.0×10^{-1}	1.4×10^{1}	3.0×10^{4}	8.0×10^{5}
Te-132 (a)		5.0×10^{-1}	1.4×10^{1}	4.0×10^{-1}	1.1×10^{1}	1.1×10^{4}	3.0×10^{5}
Th-227	Thorium (90)	1.0×10^{1}	2.7×10^{2}	5.0×10^{-3}	1.4×10^{-1}	1.1×10^{3}	3.1×10^{4}
Th-228 (a)		5.0×10^{-1}	1.4×10^{1}	1.0×10^{-3}	2.7×10^{-2}	3.0×10^{1}	8.2×10^{2}
Th-229		5.0	1.4×10^{2}	5.0×10^{-4}	1.4×10^{-2}	7.9×10^{-3}	2.1×10^{-1}
Th-230		1.0×10^{1}	2.7×10^{2}	1.0×10^{-3}	2.7×10^{-2}	7.6×10^{-4}	2.1×10^{-2}
Th-231		4.0×10^{1}	1.1×10^{3}	2.0×10^{-2}	5.4×10^{-1}	2.0×10^{4}	5.3×10^{5}
Th-232		Unlimited	Unlimited	Unlimited	Unlimited	4.0×10^{-9}	1.1×10^{-7}
Th-234 (a)		3.0×10^{-1}	8.1	3.0×10^{-1}	8.1	8.6×10^{2}	2.3×10^{4}
Th(nat)		Unlimited	Unlimited	Unlimited	Unlimited	8.1×10^{-9}	2.2×10^{-7}
Ti-44 (a)	Titanium (22)	5.0×10^{-1}	1.4×10^{1}	4.0×10^{-1}	1.1×10^{1}	6.4	1.7×10^{2}
Tl-200	Thallium (81)	9.0×10^{-1}	2.4×10^{1}	9.0×10^{-1}	2.4×10^{1}	2.2×10^{4}	6.0×10^{5}
Tl-201		1.0×10^{1}	2.7×10^{2}	4.0	1.1×10^{2}	7.9×10^{3}	2.1×10^{5}
Tl-202		2.0	5.4×10^{1}	2.0	5.4×10^{1}	2.0×10^{3}	5.3×10^{4}
Tl-204		1.0×10^{1}	2.7×10^{2}	7.0×10^{-1}	1.9×10^{1}	1.7×10^{1}	4.6×10^{2}
Tm-167	Thulium (69)	7.0	1.9×10^{2}	8.0×10^{-1}	2.2×10^{1}	3.1×10^{3}	8.5×10^{4}
Tm-170		3.0	8.1×10^{1}	6.0×10^{-1}	1.6×10^{1}	2.2×10^{2}	6.0×10^{3}
Tm-171		4.0×10^{1}	1.1×10^{3}	4.0×10^{1}	1.1×10^{3}	4.0×10^{1}	1.1×10^{3}
U-230 (fast lung absorption) (a)(d).	Uranium (92)	4.0×10^{1}	1.1×10^{3}	1.0×10^{-1}	2.7	1.0×10^{3}	2.7×10^{4}
U-230 (medium lung absorption) (a)(e).		4.0×10^{1}	1.1×10^{3}	4.0×10^{-3}	1.1×10^{-1}	1.0×10^{3}	2.7×10^{4}
U-230 (slow lung absorption) (a)(f).		3.0×10^{1}	8.1×10^{2}	3.0×10^{-3}	8.1×10^{-2}	1.0×10^{3}	2.7×10^{4}
U-232 (fast lung absorption) (d).		4.0×10^{1}	1.1×10^{3}	1.0×10^{-2}	2.7×10^{-1}	8.3×10^{-1}	2.2×10^{1}
U-232 (medium lung absorption) (e).		4.0×10^{1}	1.1×10^{3}	7.0×10^{-3}	1.9×10^{-1}	8.3×10^{-1}	2.2×10^{1}
U-232 (slow lung absorption) (f).		1.0×10^{1}	2.7×10^{2}	1.0×10^{-3}	2.7×10^{-2}	8.3×10^{-1}	2.2×10^{1}
U-233 (fast lung absorption) (d).		4.0×10^{1}	1.1×10^{3}	9.0×10^{-2}	2.4	3.6×10^{-4}	9.7×10^{-3}
U-233 (medium lung absorption) (e).		4.0×10^{1}	1.1×10^{3}	2.0×10^{-2}	5.4×10^{-1}	3.6×10^{-4}	9.7×10^{-3}
U-233 (slow lung absorption) (f).		4.0×10^{1}	1.1×10^{3}	6.0×10^{-3}	1.6×10^{-1}	3.6×10^{-4}	9.7×10^{-3}
U-234 (fast lung absorption) (d).		4.0×10^{1}	1.1×10^{3}	9.0×10^{-2}	2.4	2.3×10^{-4}	6.2×10^{-3}
U-234 (medium lung absorption) (e).		4.0×10^{1}	1.1×10^{3}	2.0×10^{-2}	5.4×10^{-1}	2.3×10^{-4}	6.2×10^{-3}
U-234 (slow lung absorption) (f).		4.0×10^{1}	1.1×10^{3}	6.0×10^{-3}	1.6×10^{-1}	2.3×10^{-4}	6.2×10^{-3}

TABLE A–1—A_1 AND A_2 VALUES FOR RADIONUCLIDES—Continued

Symbol of radionuclide	Element and atomic number	A_1 (TBq)	A_1 (Ci)[b]	A_2 (TBq)	A_2 (Ci)[b]	Specific activity	
						(TBq/g)	(Ci/g)
U-235 (all lung absorption types) (a),(d),(e),(f).		Unlimited	Unlimited	Unlimited	Unlimited	8.0×10^{-8}	2.2×10^{-6}
U-236 (fast lung absorption) (d).		Unlimited	Unlimited	Unlimited	Unlimited	2.4×10^{-6}	6.5×10^{-5}
U-236 (medium lung absorption) (e).		4.0×10^{1}	1.1×10^{3}	2.0×10^{-2}	5.4×10^{-1}	2.4×10^{-6}	6.5×10^{-5}
U-236 (slow lung absorption) (f).		4.0×10^{1}	1.1×10^{3}	6.0×10^{-3}	1.6×10^{-1}	2.4×10^{-6}	6.5×10^{-5}
U-238 (all lung absorption types) (d),(e),(f).		Unlimited	Unlimited	Unlimited	Unlimited	1.2×10^{-8}	3.4×10^{-7}
U (nat)		Unlimited	Unlimited	Unlimited	Unlimited	2.6×10^{-8}	7.1×10^{-7}
U (enriched to 20% or less)(g).		Unlimited	Unlimited	Unlimited	Unlimited	See Table A-4	See Table A-4
U (dep)		Unlimited	Unlimited	Unlimited	Unlimited	See Table A-4	See Table A-4
V-48	Vanadium (23)	4.0×10^{-1}	1.1×10^{1}	4.0×10^{-1}	1.1×10^{1}	6.3×10^{3}	1.7×10^{5}
V-49		4.0×10^{1}	1.1×10^{3}	4.0×10^{1}	1.1×10^{3}	3.0×10^{2}	8.1×10^{3}
W-178 (a)	Tungsten (74)	9.0	2.4×10^{2}	5.0	1.4×10^{2}	1.3×10^{3}	3.4×10^{4}
W-181		3.0×10^{1}	8.1×10^{2}	3.0×10^{1}	8.1×10^{2}	2.2×10^{2}	6.0×10^{3}
W-185		4.0×10^{1}	1.1×10^{3}	8.0×10^{-1}	2.2×10^{1}	3.5×10^{2}	9.4×10^{3}
W-187		2.0	5.4×10^{1}	6.0×10^{-1}	1.6×10^{1}	2.6×10^{4}	7.0×10^{5}
W-188 (a)		4.0×10^{-1}	1.1×10^{1}	3.0×10^{-1}	8.1	3.7×10^{2}	1.0×10^{4}
Xe-122 (a)	Xenon (54)	4.0×10^{-1}	1.1×10^{1}	4.0×10^{-1}	1.1×10^{1}	4.8×10^{4}	1.3×10^{6}
Xe-123		2.0	5.4×10^{1}	7.0×10^{-1}	1.9×10^{1}	4.4×10^{5}	1.2×10^{7}
Xe-127		4.0	1.1×10^{2}	2.0	5.4×10^{1}	1.0×10^{3}	2.8×10^{4}
Xe-131m		4.0×10^{1}	1.1×10^{3}	4.0×10^{1}	1.1×10^{3}	3.1×10^{3}	8.4×10^{4}
Xe-133		2.0×10^{1}	5.4×10^{2}	1.0×10^{1}	2.7×10^{2}	6.9×10^{3}	1.9×10^{5}
Xe-135		3.0	8.1×10^{1}	2.0	5.4×10^{1}	9.5×10^{4}	2.6×10^{6}
Y-87 (a)	Yttrium (39)	1.0	2.7×10^{1}	1.0	2.7×10^{1}	1.7×10^{4}	4.5×10^{5}
Y-88		4.0×10^{-1}	1.1×10^{1}	4.0×10^{-1}	1.1×10^{1}	5.2×10^{2}	1.4×10^{4}
Y-90		3.0×10^{-1}	8.1	3.0×10^{-1}	8.1	2.0×10^{4}	5.4×10^{5}
Y-91		6.0×10^{-1}	1.6×10^{1}	6.0×10^{-1}	1.6×10^{1}	9.1×10^{2}	2.5×10^{4}
Y-91m		2.0	5.4×10^{1}	2.0	5.4×10^{1}	1.5×10^{6}	4.2×10^{7}
Y-92		2.0×10^{-1}	5.4	2.0×10^{-1}	5.4	3.6×10^{5}	9.6×10^{6}
Y-93		3.0×10^{-1}	8.1	3.0×10^{-1}	8.1	1.2×10^{5}	3.3×10^{6}
Yb-169	Ytterbium (70)	4.0	1.1×10^{2}	1.0	2.7×10^{1}	8.9×10^{2}	2.4×10^{4}
Yb-175		3.0×10^{1}	8.1×10^{2}	9.0×10^{-1}	2.4×10^{1}	6.6×10^{3}	1.8×10^{5}
Zn-65	Zinc (30)	2.0	5.4×10^{1}	2.0	5.4×10^{1}	3.0×10^{2}	8.2×10^{3}
Zn-69		3.0	8.1×10^{1}	6.0×10^{-1}	1.6×10^{1}	1.8×10^{6}	4.9×10^{7}
Zn-69m (a)		3.0	8.1×10^{1}	6.0×10^{-1}	1.6×10^{1}	1.2×10^{5}	3.3×10^{6}
Zr-88	Zirconium (40)	3.0	8.1×10^{1}	3.0	8.1×10^{1}	6.6×10^{2}	1.8×10^{4}
Zr-93		Unlimited	Unlimited	Unlimited	Unlimited	9.3×10^{-5}	2.5×10^{-3}
Zr-95 (a)		2.0	5.4×10^{1}	8.0×10^{-1}	2.2×10^{1}	7.9×10^{2}	2.1×10^{4}
Zr-97 (a)		4.0×10^{-1}	1.1×10^{1}	4.0×10^{-1}	1.1×10^{1}	7.1×10^{4}	1.9×10^{6}

[a] A_1 and/or A_2 values include contributions from daughter nuclides with half-lives less than 10 days, as listed in the following:

Mg-28	Al-28
Ca-47	Sc-47
Ti-44	Sc-44
Fe-52	Mn-52m
Fe-60	Co-60m
Zn-69m	Zn-69
Ge-68	Ga-68
Rb-83	Kr-83m
Sr-82	Rb-82
Sr-90	Y-90
Sr-91	Y-91m
Sr-92	Y-92
Y-87	Sr-87m
Zr-95	Nb-95m
Zr-97	Nb-97m, Nb-97
Mo-99	Tc-99m
Tc-95m	Tc-95
Tc-96m	Tc-96

Ru-103	Rh-103m
Ru-106	Rh-106
Pd-103	Rh-103m
Ag-108m	Ag-108
Ag-110m	Ag-110
Cd-115	In-115m
In-114m	In-114
Sn-113	In-113m
Sn-121m	Sn-121
Sn-126	Sb-126m
Te-127m	Te-127
Te-129m	Te-129
Te-131m	Te-131
Te-132	I-132
I–135	Xe-135m
Xe-122	I-122
Cs-137	Ba-137m
Ba-131	Cs-131
Ba-140	La-140
Ce-144	Pr-144m, Pr-144
Pm-148m	Pm-148
Gd-146	Eu-146
Dy-166	Ho-166
Hf-172	Lu-172
W-178	Ta-178
W-188	Re-188
Re-189	Os-189m
Os-194	Ir-194
Ir-189	Os-189m
Pt-188	Ir-188
Hg-194	Au-194
Hg-195m	Hg-195
Pb-210	Bi-210
Pb-212	Bi-212, Tl-208, Po-212
Bi-210m	Tl-206
Bi-212	Tl-208, Po-212
At-211	Po-211
Rn-222	Po-218, Pb-214, At-218, Bi-214, Po-214
Ra-223	Rn-219, Po-215, Pb-211, Bi-211, Po-211, Tl-207
Ra-224	Rn-220, Po-216, Pb-212, Bi-212, Tl-208, Po-212
Ra-225	Ac-225, Fr-221, At-217, Bi-213, Tl-209, Po-213, Pb-209
Ra-226	Rn-222, Po-218, Pb-214, At-218, Bi-214, Po-214
Ra-228	Ac-228
Ac-225	Fr-221, At-217, Bi-213, Tl-209, Po-213, Pb-209
Ac-227	Fr-223
Th-228	Ra-224, Rn-220, Po-216, Pb-212, Bi-212, Tl-208, Po-212
Th-234	Pa-234m, Pa-234
Pa-230	Ac-226, Th-226, Fr-222, Ra-222, Rn-218, Po-214
U-230	Th-226, Ra-222, Rn-218, Po-214
U-235	Th-231
Pu-241	U-237
Pu-244	U-240, Np-240m
Am-242m	Am-242, Np-238
Am-243	Np-239
Cm-247	Pu-243
Bk-249	Am-245
Cf-253	Cm-249

[b] The values of A_1 and A_2 in Curies (Ci) are approximate and for information only; the regulatory standard units are Terabecquerels (TBq) (see Appendix A to Part 71—Determination of A_1 and A_2, Section I).

[c] The activity of Ir-192 in special form may be determined from a measurement of the rate of decay or a measurement of the radiation level at a prescribed distance from the source.

[d] These values apply only to compounds of uranium that take the chemical form of UF_6, UO_2F_2 and $UO_2(NO_3)_2$ in both normal and accident conditions of transport.
[e] These values apply only to compounds of uranium that take the chemical form of UO_3, UF_4, UCl_4 and hexavalent compounds in both normal and accident conditions of transport.
[f] These values apply to all compounds of uranium other than those specified in notes (d) and (e) of this table.
[g] These values apply to unirradiated uranium only.
[h] A_2 = 0.74 TBq (20 Ci) for Mo-99 for domestic use.

TABLE A–2—EXEMPT MATERIAL ACTIVITY CONCENTRATIONS AND EXEMPT CONSIGNMENT ACTIVITY LIMITS FOR RADIONUCLIDES

Symbol of radionuclide	Element and atomic number	Activity concentration for exempt material (Bq/g)	Activity concentration for exempt material (Ci/g)	Activity limit for exempt consignment (Bq)	Activity limit for exempt consignment (Ci)
Ac-225	Actinium (89)	1.0×10^{1}	2.7×10^{-10}	1.0×10^{4}	2.7×10^{-7}
Ac-227		1.0×10^{-1}	2.7×10^{-12}	1.0×10^{3}	2.7×10^{-8}
Ac-228		1.0×10^{1}	2.7×10^{-10}	1.0×10^{6}	2.7×10^{-5}
Ag-105	Silver (47)	1.0×10^{2}	2.7×10^{-9}	1.0×10^{6}	2.7×10^{-5}
Ag-108m (b)		1.0×10^{1}	2.7×10^{-10}	1.0×10^{6}	2.7×10^{-5}
Ag-110m		1.0×10^{1}	2.7×10^{-10}	1.0×10^{6}	2.7×10^{-5}
Ag-111		1.0×10^{3}	2.7×10^{-8}	1.0×10^{6}	2.7×10^{-5}
Al-26	Aluminum (13)	1.0×10^{1}	2.7×10^{-10}	1.0×10^{5}	2.7×10^{-6}
Am-241	Americium (95)	1.0	2.7×10^{-11}	1.0×10^{4}	2.7×10^{-7}
Am-242m (b)		1.0	2.7×10^{-11}	1.0×10^{4}	2.7×10^{-7}
Am-243 (b)		1.0	2.7×10^{-11}	1.0×10^{3}	2.7×10^{-8}
Ar-37	Argon (18)	1.0×10^{6}	2.7×10^{-5}	1.0×10^{8}	2.7×10^{-3}
Ar-39		1.0×10^{7}	2.7×10^{-4}	1.0×10^{4}	2.7×10^{-7}
Ar-41		1.0×10^{2}	2.7×10^{-9}	1.0×10^{9}	2.7×10^{-2}
As-72	Arsenic (33)	1.0×10^{1}	2.7×10^{-10}	1.0×10^{5}	2.7×10^{-6}
As-73		1.0×10^{3}	2.7×10^{-8}	1.0×10^{7}	2.7×10^{-4}
As-74		1.0×10^{1}	2.7×10^{-10}	1.0×10^{6}	2.7×10^{-5}
As-76		1.0×10^{2}	2.7×10^{-9}	1.0×10^{5}	2.7×10^{-6}
As-77		1.0×10^{3}	2.7×10^{-8}	1.0×10^{6}	2.7×10^{-5}
At-211	Astatine (85)	1.0×10^{3}	2.7×10^{-8}	1.0×10^{7}	2.7×10^{-4}
Au-193	Gold (79)	1.0×10^{2}	2.7×10^{-9}	1.0×10^{7}	2.7×10^{-4}
Au-194		1.0×10^{1}	2.7×10^{-10}	1.0×10^{6}	2.7×10^{-5}
Au-195		1.0×10^{2}	2.7×10^{-9}	1.0×10^{7}	2.7×10^{-4}
Au-198		1.0×10^{2}	2.7×10^{-9}	1.0×10^{6}	2.7×10^{-5}
Au-199		1.0×10^{2}	2.7×10^{-9}	1.0×10^{6}	2.7×10^{-5}
Ba-131	Barium (56)	1.0×10^{2}	2.7×10^{-9}	1.0×10^{6}	2.7×10^{-5}
Ba-133		1.0×10^{2}	2.7×10^{-9}	1.0×10^{6}	2.7×10^{-5}
Ba-133m		1.0×10^{2}	2.7×10^{-9}	1.0×10^{6}	2.7×10^{-5}
Ba-140 (b)		1.0×10^{1}	2.7×10^{-10}	1.0×10^{5}	2.7×10^{-6}
Be-7	Beryllium (4)	1.0×10^{3}	2.7×10^{-8}	1.0×10^{7}	2.7×10^{-4}
Be-10		1.0×10^{4}	2.7×10^{-7}	1.0×10^{6}	2.7×10^{-5}
Bi-205	Bismuth (83)	1.0×10^{1}	2.7×10^{-10}	1.0×10^{6}	2.7×10^{-5}
Bi-206		1.0×10^{1}	2.7×10^{-10}	1.0×10^{5}	2.7×10^{-6}
Bi-207		1.0×10^{1}	2.7×10^{-10}	1.0×10^{6}	2.7×10^{-5}
Bi-210		1.0×10^{3}	2.7×10^{-8}	1.0×10^{6}	2.7×10^{-5}
Bi-210m		1.0×10^{1}	2.7×10^{-10}	1.0×10^{5}	2.7×10^{-6}
Bi-212 (b)		1.0×10^{1}	2.7×10^{-10}	1.0×10^{5}	2.7×10^{-6}
Bk-247	Berkelium (97)	1.0	2.7×10^{-11}	1.0×10^{4}	2.7×10^{-7}
Bk-249		1.0×10^{3}	2.7×10^{-8}	1.0×10^{6}	2.7×10^{-5}
Br-76	Bromine (35)	1.0×10^{1}	2.7×10^{-10}	1.0×10^{5}	2.7×10^{-6}
Br-77		1.0×10^{2}	2.7×10^{-9}	1.0×10^{6}	2.7×10^{-5}
Br-82		1.0×10^{1}	2.7×10^{-10}	1.0×10^{6}	2.7×10^{-5}
C-11	Carbon (6)	1.0×10^{1}	2.7×10^{-10}	1.0×10^{6}	2.7×10^{-5}
C-14		1.0×10^{4}	2.7×10^{-7}	1.0×10^{7}	2.7×10^{-4}
Ca-41	Calcium (20)	1.0×10^{5}	2.7×10^{-6}	1.0×10^{7}	2.7×10^{-4}
Ca-45		1.0×10^{4}	2.7×10^{-7}	1.0×10^{7}	2.7×10^{-4}
Ca-47		1.0×10^{1}	2.7×10^{-10}	1.0×10^{6}	2.7×10^{-5}
Cd-109	Cadmium (48)	1.0×10^{4}	2.7×10^{-7}	1.0×10^{6}	2.7×10^{-5}
Cd-113m		1.0×10^{3}	2.7×10^{-8}	1.0×10^{6}	2.7×10^{-5}
Cd-115		1.0×10^{2}	2.7×10^{-9}	1.0×10^{6}	2.7×10^{-5}
Cd-115m		1.0×10^{3}	2.7×10^{-8}	1.0×10^{6}	2.7×10^{-5}
Ce-139	Cerium (58)	1.0×10^{2}	2.7×10^{-9}	1.0×10^{6}	2.7×10^{-5}
Ce-141		1.0×10^{2}	2.7×10^{-9}	1.0×10^{7}	2.7×10^{-4}
Ce-143		1.0×10^{2}	2.7×10^{-9}	1.0×10^{6}	2.7×10^{-5}
Ce-144 (b)		1.0×10^{2}	2.7×10^{-9}	1.0×10^{5}	2.7×10^{-6}
Cf-248	Californium (98)	1.0×10^{1}	2.7×10^{-10}	1.0×10^{4}	2.7×10^{-7}
Cf-249		1.0	2.7×10^{-11}	1.0×10^{3}	2.7×10^{-8}
Cf-250		1.0×10^{1}	2.7×10^{-10}	1.0×10^{4}	2.7×10^{-7}
Cf-251		1.0	2.7×10^{-11}	1.0×10^{3}	2.7×10^{-8}
Cf-252		1.0×10^{1}	2.7×10^{-10}	1.0×10^{4}	2.7×10^{-7}
Cf-253		1.0×10^{2}	2.7×10^{-9}	1.0×10^{5}	2.7×10^{-6}

TABLE A–2—EXEMPT MATERIAL ACTIVITY CONCENTRATIONS AND EXEMPT CONSIGNMENT ACTIVITY LIMITS FOR RADIONUCLIDES—Continued

Symbol of radionuclide	Element and atomic number	Activity concentration for exempt material (Bq/g)	Activity concentration for exempt material (Ci/g)	Activity limit for exempt consignment (Bq)	Activity limit for exempt consignment (Ci)
Cf-254		1.0	2.7×10^{-11}	1.0×10^{3}	2.7×10^{-8}
Cl-36	Chlorine (17)	1.0×10^{4}	2.7×10^{-7}	1.0×10^{6}	2.7×10^{-5}
Cl-38		1.0×10^{1}	2.7×10^{-10}	1.0×10^{5}	2.7×10^{-6}
Cm-240	Curium (96)	1.0×10^{2}	2.7×10^{-9}	1.0×10^{5}	2.7×10^{-6}
Cm-241		1.0×10^{2}	2.7×10^{-9}	1.0×10^{6}	2.7×10^{-5}
Cm-242		1.0×10^{2}	2.7×10^{-9}	1.0×10^{5}	2.7×10^{-6}
Cm-243		1.0	2.7×10^{-11}	1.0×10^{4}	2.7×10^{-7}
Cm-244		1.0×10^{1}	2.7×10^{-10}	1.0×10^{4}	2.7×10^{-7}
Cm-245		1.0	2.7×10^{-11}	1.0×10^{3}	2.7×10^{-8}
Cm-246		1.0	2.7×10^{-11}	1.0×10^{3}	2.7×10^{-8}
Cm-247		1.0	2.7×10^{-11}	1.0×10^{4}	2.7×10^{-7}
Cm-248		1.0	2.7×10^{-11}	1.0×10^{3}	2.7×10^{-8}
Co-55	Cobalt (27)	1.0×10^{1}	2.7×10^{-10}	1.0×10^{6}	2.7×10^{-5}
Co-56		1.0×10^{1}	2.7×10^{-10}	1.0×10^{5}	2.7×10^{-6}
Co-57		1.0×10^{2}	2.7×10^{-9}	1.0×10^{6}	2.7×10^{-5}
Co-58		1.0×10^{1}	2.7×10^{-10}	1.0×10^{6}	2.7×10^{-5}
Co-58m		1.0×10^{4}	2.7×10^{-7}	1.0×10^{7}	2.7×10^{-4}
Co-60		1.0×10^{1}	2.7×10^{-10}	1.0×10^{5}	2.7×10^{-6}
Cr-51	Chromium (24)	1.0×10^{3}	2.7×10^{-8}	1.0×10^{7}	2.7×10^{-4}
Cs-129	Cesium (55)	1.0×10^{2}	2.7×10^{-9}	1.0×10^{5}	2.7×10^{-6}
Cs-131		1.0×10^{3}	2.7×10^{-8}	1.0×10^{6}	2.7×10^{-5}
Cs-132		1.0×10^{1}	2.7×10^{-10}	1.0×10^{5}	2.7×10^{-6}
Cs-134		1.0×10^{1}	2.7×10^{-10}	1.0×10^{4}	2.7×10^{-7}
Cs-134m		1.0×10^{3}	2.7×10^{-8}	1.0×10^{5}	2.7×10^{-6}
Cs-135		1.0×10^{4}	2.7×10^{-7}	1.0×10^{7}	2.7×10^{-4}
Cs-136		1.0×10^{1}	2.7×10^{-10}	1.0×10^{5}	2.7×10^{-6}
Cs-137 (b)		1.0×10^{1}	2.7×10^{-10}	1.0×10^{4}	2.7×10^{-7}
Cu-64	Copper (29)	1.0×10^{2}	2.7×10^{-9}	1.0×10^{6}	2.7×10^{-5}
Cu-67		1.0×10^{2}	2.7×10^{-9}	1.0×10^{6}	2.7×10^{-5}
Dy-159	Dysprosium (66)	1.0×10^{3}	2.7×10^{-8}	1.0×10^{7}	2.7×10^{-4}
Dy-165		1.0×10^{3}	2.7×10^{-8}	1.0×10^{6}	2.7×10^{-5}
Dy-166		1.0×10^{3}	2.7×10^{-8}	1.0×10^{6}	2.7×10^{-5}
Er-169	Erbium (68)	1.0×10^{4}	2.7×10^{-7}	1.0×10^{7}	2.7×10^{-4}
Er-171		1.0×10^{2}	2.7×10^{-9}	1.0×10^{6}	2.7×10^{-5}
Eu-147	Europium (63)	1.0×10^{2}	2.7×10^{-9}	1.0×10^{6}	2.7×10^{-5}
Eu-148		1.0×10^{1}	2.7×10^{-10}	1.0×10^{6}	2.7×10^{-5}
Eu-149		1.0×10^{2}	2.7×10^{-9}	1.0×10^{7}	2.7×10^{-4}
Eu-150 (short lived).		1.0×10^{3}	2.7×10^{-8}	1.0×10^{6}	2.7×10^{-5}
Eu-150 (long lived).		1.0×10^{1}	2.7×10^{-10}	1.0×10^{6}	2.7×10^{-5}
Eu-152		1.0×10^{1}	2.7×10^{-10}	1.0×10^{6}	2.7×10^{-5}
Eu-152m		1.0×10^{2}	2.7×10^{-9}	1.0×10^{6}	2.7×10^{-5}
Eu-154		1.0×10^{1}	2.7×10^{-10}	1.0×10^{6}	2.7×10^{-5}
Eu-155		1.0×10^{2}	2.7×10^{-9}	1.0×10^{7}	2.7×10^{-4}
Eu-156		1.0×10^{1}	2.7×10^{-10}	1.0×10^{6}	2.7×10^{-5}
F-18	Fluorine (9)	1.0×10^{1}	2.7×10^{-10}	1.0×10^{6}	2.7×10^{-5}
Fe-52	Iron (26)	1.0×10^{1}	2.7×10^{-10}	1.0×10^{6}	2.7×10^{-5}
Fe-55		1.0×10^{4}	2.7×10^{-7}	1.0×10^{6}	2.7×10^{-5}
Fe-59		1.0×10^{1}	2.7×10^{-10}	1.0×10^{6}	2.7×10^{-5}
Fe-60		1.0×10^{2}	2.7×10^{-9}	1.0×10^{5}	2.7×10^{-6}
Ga-67	Gallium (31)	1.0×10^{2}	2.7×10^{-9}	1.0×10^{6}	2.7×10^{-5}
Ga-68		1.0×10^{1}	2.7×10^{-10}	1.0×10^{5}	2.7×10^{-6}
Ga-72		1.0×10^{1}	2.7×10^{-10}	1.0×10^{5}	2.7×10^{-6}
Gd-146	Gadolinium (64)	1.0×10^{1}	2.7×10^{-10}	1.0×10^{6}	2.7×10^{-5}
Gd-148		1.0×10^{1}	2.7×10^{-10}	1.0×10^{4}	2.7×10^{-7}
Gd-153		1.0×10^{2}	2.7×10^{-9}	1.0×10^{7}	2.7×10^{-4}
Gd-159		1.0×10^{3}	2.7×10^{-8}	1.0×10^{6}	2.7×10^{-5}
Ge-68	Germanium (32)	1.0×10^{1}	2.7×10^{-10}	1.0×10^{5}	2.7×10^{-6}
Ge-71		1.0×10^{4}	2.7×10^{-7}	1.0×10^{8}	2.7×10^{-3}
Ge-77		1.0×10^{1}	2.7×10^{-10}	1.0×10^{5}	2.7×10^{-6}
Hf-172	Hafnium (72)	1.0×10^{1}	2.7×10^{-10}	1.0×10^{6}	2.7×10^{-5}
Hf-175		1.0×10^{2}	2.7×10^{-9}	1.0×10^{6}	2.7×10^{-5}
Hf-181		1.0×10^{1}	2.7×10^{-10}	1.0×10^{6}	2.7×10^{-5}
Hf-182		1.0×10^{2}	2.7×10^{-9}	1.0×10^{6}	2.7×10^{-5}
Hg-194	Mercury (80)	1.0×10^{1}	2.7×10^{-10}	1.0×10^{6}	2.7×10^{-5}
Hg-195m		1.0×10^{2}	2.7×10^{-9}	1.0×10^{6}	2.7×10^{-5}
Hg-197		1.0×10^{2}	2.7×10^{-9}	1.0×10^{7}	2.7×10^{-4}

TABLE A–2—EXEMPT MATERIAL ACTIVITY CONCENTRATIONS AND EXEMPT CONSIGNMENT ACTIVITY LIMITS FOR RADIONUCLIDES—Continued

Symbol of radionuclide	Element and atomic number	Activity concentration for exempt material (Bq/g)	Activity concentration for exempt material (Ci/g)	Activity limit for exempt consignment (Bq)	Activity limit for exempt consignment (Ci)
Hg-197m		1.0×10^{2}	2.7×10^{-9}	1.0×10^{6}	2.7×10^{-5}
Hg-203		1.0×10^{2}	2.7×10^{-9}	1.0×10^{5}	2.7×10^{-6}
Ho-166	Holmium (67)	1.0×10^{3}	2.7×10^{-8}	1.0×10^{5}	2.7×10^{-6}
Ho-166m		1.0×10^{1}	2.7×10^{-10}	1.0×10^{6}	2.7×10^{-5}
I-123	Iodine (53)	1.0×10^{2}	2.7×10^{-9}	1.0×10^{7}	2.7×10^{-4}
I-124		1.0×10^{1}	2.7×10^{-10}	1.0×10^{6}	2.7×10^{-5}
I-125		1.0×10^{3}	2.7×10^{-8}	1.0×10^{6}	2.7×10^{-5}
I-126		1.0×10^{2}	2.7×10^{-9}	1.0×10^{6}	2.7×10^{-5}
I-129		1.0×10^{2}	2.7×10^{-9}	1.0×10^{5}	2.7×10^{-6}
I-131		1.0×10^{2}	2.7×10^{-9}	1.0×10^{6}	2.7×10^{-5}
I-132		1.0×10^{1}	2.7×10^{-10}	1.0×10^{5}	2.7×10^{-6}
I-133		1.0×10^{1}	2.7×10^{-10}	1.0×10^{6}	2.7×10^{-5}
I-134		1.0×10^{1}	2.7×10^{-10}	1.0×10^{5}	2.7×10^{-6}
I-135		1.0×10^{1}	2.7×10^{-10}	1.0×10^{6}	2.7×10^{-5}
In-111	Indium (49)	1.0×10^{2}	2.7×10^{-9}	1.0×10^{6}	2.7×10^{-5}
In-113m		1.0×10^{2}	2.7×10^{-9}	1.0×10^{6}	2.7×10^{-5}
In-114m		1.0×10^{2}	2.7×10^{-9}	1.0×10^{6}	2.7×10^{-5}
In-115m		1.0×10^{2}	2.7×10^{-9}	1.0×10^{6}	2.7×10^{-5}
Ir-189	Iridium (77)	1.0×10^{2}	2.7×10^{-9}	1.0×10^{7}	2.7×10^{-4}
Ir-190		1.0×10^{1}	2.7×10^{-10}	1.0×10^{6}	2.7×10^{-5}
Ir-192		1.0×10^{1}	2.7×10^{-10}	1.0×10^{4}	2.7×10^{-7}
Ir-194		1.0×10^{2}	2.7×10^{-9}	1.0×10^{5}	2.7×10^{-6}
K-40	Potassium (19)	1.0×10^{2}	2.7×10^{-9}	1.0×10^{6}	2.7×10^{-5}
K-42		1.0×10^{2}	2.7×10^{-9}	1.0×10^{6}	2.7×10^{-5}
K-43		1.0×10^{1}	2.7×10^{-10}	1.0×10^{6}	2.7×10^{-5}
Kr-79	Krypton (36)	1.0×10^{3}	2.7×10^{-8}	1.0×10^{5}	2.7×10^{-6}
Kr-81		1.0×10^{4}	2.7×10^{-7}	1.0×10^{7}	2.7×10^{-4}
Kr-85		1.0×10^{5}	2.7×10^{-6}	1.0×10^{4}	2.7×10^{-7}
Kr-85m		1.0×10^{3}	2.7×10^{-8}	1.0×10^{10}	2.7×10^{-1}
Kr-87		1.0×10^{2}	2.7×10^{-9}	1.0×10^{9}	2.7×10^{-2}
La-137	Lanthanum (57)	1.0×10^{3}	2.7×10^{-8}	1.0×10^{7}	2.7×10^{-4}
La-140		1.0×10^{1}	2.7×10^{-10}	1.0×10^{5}	2.7×10^{-6}
Lu-172	Lutetium (71)	1.0×10^{1}	2.7×10^{-10}	1.0×10^{6}	2.7×10^{-5}
Lu-173		1.0×10^{2}	2.7×10^{-9}	1.0×10^{7}	2.7×10^{-4}
Lu-174		1.0×10^{2}	2.7×10^{-9}	1.0×10^{7}	2.7×10^{-4}
Lu-174m		1.0×10^{2}	2.7×10^{-9}	1.0×10^{7}	2.7×10^{-4}
Lu-177		1.0×10^{3}	2.7×10^{-8}	1.0×10^{7}	2.7×10^{-4}
Mg-28	Magnesium (12)	1.0×10^{1}	2.7×10^{-10}	1.0×10^{5}	2.7×10^{-6}
Mn-52	Manganese (25)	1.0×10^{1}	2.7×10^{-10}	1.0×10^{5}	2.7×10^{-6}
Mn-53		1.0×10^{4}	2.7×10^{-7}	1.0×10^{9}	2.7×10^{-2}
Mn-54		1.0×10^{1}	2.7×10^{-10}	1.0×10^{6}	2.7×10^{-5}
Mn-56		1.0×10^{1}	2.7×10^{-10}	1.0×10^{5}	2.7×10^{-6}
Mo-93	Molybdenum (42)	1.0×10^{3}	2.7×10^{-8}	1.0×10^{8}	2.7×10^{-3}
Mo-99		1.0×10^{2}	2.7×10^{-9}	1.0×10^{6}	2.7×10^{-5}
N-13	Nitrogen (7)	1.0×10^{2}	2.7×10^{-9}	1.0×10^{9}	2.7×10^{-2}
Na-22	Sodium (11)	1.0×10^{1}	2.7×10^{-10}	1.0×10^{6}	2.7×10^{-5}
Na-24		1.0×10^{1}	2.7×10^{-10}	1.0×10^{5}	2.7×10^{-6}
Nb-93m	Niobium (41)	1.0×10^{4}	2.7×10^{-7}	1.0×10^{7}	2.7×10^{-4}
Nb-94		1.0×10^{1}	2.7×10^{-10}	1.0×10^{6}	2.7×10^{-5}
Nb-95		1.0×10^{1}	2.7×10^{-10}	1.0×10^{6}	2.7×10^{-5}
Nb-97		1.0×10^{1}	2.7×10^{-10}	1.0×10^{6}	2.7×10^{-5}
Nd-147	Neodymium (60)	1.0×10^{2}	2.7×10^{-9}	1.0×10^{6}	2.7×10^{-5}
Nd-149		1.0×10^{2}	2.7×10^{-9}	1.0×10^{6}	2.7×10^{-5}
Ni-59	Nickel (28)	1.0×10^{4}	2.7×10^{-7}	1.0×10^{8}	2.7×10^{-3}
Ni-63		1.0×10^{5}	2.7×10^{-6}	1.0×10^{8}	2.7×10^{-3}
Ni-65		1.0×10^{1}	2.7×10^{-10}	1.0×10^{6}	2.7×10^{-5}
Np-235	Neptunium (93)	1.0×10^{3}	2.7×10^{-8}	1.0×10^{7}	2.7×10^{-4}
Np-236 (short-lived).		1.0×10^{3}	2.7×10^{-8}	1.0×10^{7}	2.7×10^{-4}
Np-236 (long-lived).		1.0×10^{2}	2.7×10^{-9}	1.0×10^{5}	2.7×10^{-6}
Np-237 (b)		1.0	2.7×10^{-11}	1.0×10^{3}	2.7×10^{-8}
Np-239		1.0×10^{2}	2.7×10^{-9}	1.0×10^{7}	2.7×10^{-4}
Os-185	Osmium (76)	1.0×10^{1}	2.7×10^{-10}	1.0×10^{6}	2.7×10^{-5}
Os-191		1.0×10^{2}	2.7×10^{-9}	1.0×10^{7}	2.7×10^{-4}
Os-191m		1.0×10^{3}	2.7×10^{-8}	1.0×10^{7}	2.7×10^{-4}
Os-193		1.0×10^{2}	2.7×10^{-9}	1.0×10^{6}	2.7×10^{-5}
Os-194		1.0×10^{2}	2.7×10^{-9}	1.0×10^{5}	2.7×10^{-6}

TABLE A–2—EXEMPT MATERIAL ACTIVITY CONCENTRATIONS AND EXEMPT CONSIGNMENT ACTIVITY LIMITS FOR RADIONUCLIDES—Continued

Symbol of radionuclide	Element and atomic number	Activity concentration for exempt material (Bq/g)	Activity concentration for exempt material (Ci/g)	Activity limit for exempt consignment (Bq)	Activity limit for exempt consignment (Ci)
P-32	Phosphorus (15)	1.0×10^{3}	2.7×10^{-8}	1.0×10^{5}	2.7×10^{-6}
P-33		1.0×10^{5}	2.7×10^{-6}	1.0×10^{8}	2.7×10^{-3}
Pa-230	Protactinium (91)	1.0×10^{1}	2.7×10^{-10}	1.0×10^{6}	2.7×10^{-5}
Pa-231		1.0	2.7×10^{-11}	1.0×10^{3}	2.7×10^{-8}
Pa-233		1.0×10^{2}	2.7×10^{-9}	1.0×10^{7}	2.7×10^{-4}
Pb-201	Lead (82)	1.0×10^{1}	2.7×10^{-10}	1.0×10^{6}	2.7×10^{-5}
Pb-202		1.0×10^{3}	2.7×10^{-8}	1.0×10^{6}	2.7×10^{-5}
Pb-203		1.0×10^{2}	2.7×10^{-9}	1.0×10^{6}	2.7×10^{-5}
Pb-205		1.0×10^{4}	2.7×10^{-7}	1.0×10^{7}	2.7×10^{-4}
Pb-210 (b)		1.0×10^{1}	2.7×10^{-10}	1.0×10^{4}	2.7×10^{-7}
Pb-212 (b)		1.0×10^{1}	2.7×10^{-10}	1.0×10^{5}	2.7×10^{-6}
Pd-103	Palladium (46)	1.0×10^{3}	2.7×10^{-8}	1.0×10^{8}	2.7×10^{-3}
Pd-107		1.0×10^{5}	2.7×10^{-6}	1.0×10^{8}	2.7×10^{-3}
Pd-109		1.0×10^{3}	2.7×10^{-8}	1.0×10^{6}	2.7×10^{-5}
Pm-143	Promethium (61)	1.0×10^{2}	2.7×10^{-9}	1.0×10^{6}	2.7×10^{-5}
Pm-144		1.0×10^{1}	2.7×10^{-10}	1.0×10^{6}	2.7×10^{-5}
Pm-145		1.0×10^{3}	2.7×10^{-8}	1.0×10^{7}	2.7×10^{-4}
Pm-147		1.0×10^{4}	2.7×10^{-7}	1.0×10^{7}	2.7×10^{-4}
Pm-148m		1.0×10^{1}	2.7×10^{-10}	1.0×10^{6}	2.7×10^{-5}
Pm-149		1.0×10^{3}	2.7×10^{-8}	1.0×10^{6}	2.7×10^{-5}
Pm-151		1.0×10^{2}	2.7×10^{-9}	1.0×10^{6}	2.7×10^{-5}
Po-210	Polonium (84)	1.0×10^{1}	2.7×10^{-10}	1.0×10^{4}	2.7×10^{-7}
Pr-142	Praseodymium (59)	1.0×10^{2}	2.7×10^{-9}	1.0×10^{5}	2.7×10^{-6}
Pr-143		1.0×10^{4}	2.7×10^{-7}	1.0×10^{6}	2.7×10^{-5}
Pt-188	Platinum (78)	1.0×10^{1}	2.7×10^{-10}	1.0×10^{6}	2.7×10^{-5}
Pt-191		1.0×10^{2}	2.7×10^{-9}	1.0×10^{6}	2.7×10^{-5}
Pt-193		1.0×10^{4}	2.7×10^{-7}	1.0×10^{7}	2.7×10^{-4}
Pt-193m		1.0×10^{3}	2.7×10^{-8}	1.0×10^{7}	2.7×10^{-4}
Pt-195m		1.0×10^{2}	2.7×10^{-9}	1.0×10^{6}	2.7×10^{-5}
Pt-197		1.0×10^{3}	2.7×10^{-8}	1.0×10^{6}	2.7×10^{-5}
Pt-197m		1.0×10^{2}	2.7×10^{-9}	1.0×10^{6}	2.7×10^{-5}
Pu-236	Plutonium (94)	1.0×10^{1}	2.7×10^{-10}	1.0×10^{4}	2.7×10^{-7}
Pu-237		1.0×10^{3}	2.7×10^{-8}	1.0×10^{7}	2.7×10^{-4}
Pu-238		1.0	2.7×10^{-11}	1.0×10^{4}	2.7×10^{-7}
Pu-239		1.0	2.7×10^{-11}	1.0×10^{4}	2.7×10^{-7}
Pu-240		1.0	2.7×10^{-11}	1.0×10^{3}	2.7×10^{-8}
Pu-241		1.0×10^{2}	2.7×10^{-9}	1.0×10^{5}	2.7×10^{-6}
Pu-242		1.0	2.7×10^{-11}	1.0×10^{4}	2.7×10^{-7}
Pu-244		1.0	2.7×10^{-11}	1.0×10^{4}	2.7×10^{-7}
Ra-223 (b)	Radium (88)	1.0×10^{2}	2.7×10^{-9}	1.0×10^{5}	2.7×10^{-6}
Ra-224 (b)		1.0×10^{1}	2.7×10^{-10}	1.0×10^{5}	2.7×10^{-6}
Ra-225		1.0×10^{2}	2.7×10^{-9}	1.0×10^{5}	2.7×10^{-6}
Ra-226 (b)		1.0×10^{1}	2.7×10^{-10}	1.0×10^{4}	2.7×10^{-7}
Ra-228 (b)		1.0×10^{1}	2.7×10^{-10}	1.0×10^{5}	2.7×10^{-6}
Rb-81	Rubidium (37)	1.0×10^{1}	2.7×10^{-10}	1.0×10^{6}	2.7×10^{-5}
Rb-83		1.0×10^{2}	2.7×10^{-9}	1.0×10^{6}	2.7×10^{-5}
Rb-84		1.0×10^{1}	2.7×10^{-10}	1.0×10^{6}	2.7×10^{-5}
Rb-86		1.0×10^{2}	2.7×10^{-9}	1.0×10^{5}	2.7×10^{-6}
Rb-87		1.0×10^{4}	2.7×10^{-7}	1.0×10^{7}	2.7×10^{-4}
Rb(nat)		1.0×10^{4}	2.7×10^{-7}	1.0×10^{7}	2.7×10^{-4}
Re-184	Rhenium (75)	1.0×10^{1}	2.7×10^{-10}	1.0×10^{6}	2.7×10^{-5}
Re-184m		1.0×10^{2}	2.7×10^{-9}	1.0×10^{6}	2.7×10^{-5}
Re-186		1.0×10^{3}	2.7×10^{-8}	1.0×10^{6}	2.7×10^{-5}
Re-187		1.0×10^{6}	2.7×10^{-5}	1.0×10^{9}	2.7×10^{-2}
Re-188		1.0×10^{2}	2.7×10^{-9}	1.0×10^{5}	2.7×10^{-6}
Re-189		1.0×10^{2}	2.7×10^{-9}	1.0×10^{6}	2.7×10^{-5}
Re(nat)		1.0×10^{6}	2.7×10^{-5}	1.0×10^{9}	2.7×10^{-2}
Rh-99	Rhodium (45)	1.0×10^{1}	2.7×10^{-10}	1.0×10^{6}	2.7×10^{-5}
Rh-101		1.0×10^{2}	2.7×10^{-9}	1.0×10^{7}	2.7×10^{-4}
Rh-102		1.0×10^{1}	2.7×10^{-10}	1.0×10^{6}	2.7×10^{-5}
Rh-102m		1.0×10^{2}	2.7×10^{-9}	1.0×10^{6}	2.7×10^{-5}
Rh-103m		1.0×10^{4}	2.7×10^{-7}	1.0×10^{8}	2.7×10^{-3}
Rh-105		1.0×10^{2}	2.7×10^{-9}	1.0×10^{7}	2.7×10^{-4}
Rn-222 (b)	Radon (86)	1.0×10^{1}	2.7×10^{-10}	1.0×10^{8}	2.7×10^{-3}
Ru-97	Ruthenium (44)	1.0×10^{2}	2.7×10^{-9}	1.0×10^{7}	2.7×10^{-4}
Ru-103		1.0×10^{2}	2.7×10^{-9}	1.0×10^{6}	2.7×10^{-5}
Ru-105		1.0×10^{1}	2.7×10^{-10}	1.0×10^{6}	2.7×10^{-5}
Ru-106 (b)		1.0×10^{2}	2.7×10^{-9}	1.0×10^{5}	2.7×10^{-6}

TABLE A–2—EXEMPT MATERIAL ACTIVITY CONCENTRATIONS AND EXEMPT CONSIGNMENT ACTIVITY LIMITS FOR RADIONUCLIDES—Continued

Symbol of radionuclide	Element and atomic number	Activity concentration for exempt material (Bq/g)	Activity concentration for exempt material (Ci/g)	Activity limit for exempt consignment (Bq)	Activity limit for exempt consignment (Ci)
S-35	Sulphur (16)	1.0×10^{5}	2.7×10^{-6}	1.0×10^{8}	2.7×10^{-3}
Sb-122	Antimony (51)	1.0×10^{2}	2.7×10^{-9}	1.0×10^{4}	2.7×10^{-7}
Sb-124		1.0×10^{1}	2.7×10^{-10}	1.0×10^{6}	2.7×10^{-5}
Sb-125		1.0×10^{2}	2.7×10^{-9}	1.0×10^{6}	2.7×10^{-5}
Sb-126		1.0×10^{1}	2.7×10^{-10}	1.0×10^{5}	2.7×10^{-6}
Sc-44	Scandium (21)	1.0×10^{1}	2.7×10^{-10}	1.0×10^{5}	2.7×10^{-6}
Sc-46		1.0×10^{1}	2.7×10^{-10}	1.0×10^{6}	2.7×10^{-5}
Sc-47		1.0×10^{2}	2.7×10^{-9}	1.0×10^{6}	2.7×10^{-5}
Sc-48		1.0×10^{1}	2.7×10^{-10}	1.0×10^{5}	2.7×10^{-6}
Se-75	Selenium (34)	1.0×10^{2}	2.7×10^{-9}	1.0×10^{6}	2.7×10^{-5}
Se-79		1.0×10^{4}	2.7×10^{-7}	1.0×10^{7}	2.7×10^{-4}
Si-31	Silicon (14)	1.0×10^{3}	2.7×10^{-8}	1.0×10^{6}	2.7×10^{-5}
Si-32		1.0×10^{3}	2.7×10^{-8}	1.0×10^{6}	2.7×10^{-5}
Sm-145	Samarium (62)	1.0×10^{2}	2.7×10^{-9}	1.0×10^{7}	2.7×10^{-4}
Sm-147		1.0×10^{1}	2.7×10^{-10}	1.0×10^{4}	2.7×10^{-7}
Sm-151		1.0×10^{4}	2.7×10^{-7}	1.0×10^{8}	2.7×10^{-3}
Sm-153		1.0×10^{2}	2.7×10^{-9}	1.0×10^{6}	2.7×10^{-5}
Sn-113	Tin (50)	1.0×10^{3}	2.7×10^{-8}	1.0×10^{7}	2.7×10^{-4}
Sn-117m		1.0×10^{2}	2.7×10^{-9}	1.0×10^{6}	2.7×10^{-5}
Sn-119m		1.0×10^{3}	2.7×10^{-8}	1.0×10^{7}	2.7×10^{-4}
Sn-121m		1.0×10^{3}	2.7×10^{-8}	1.0×10^{7}	2.7×10^{-4}
Sn-123		1.0×10^{3}	2.7×10^{-8}	1.0×10^{6}	2.7×10^{-5}
Sn-125		1.0×10^{2}	2.7×10^{-9}	1.0×10^{5}	2.7×10^{-6}
Sn-126		1.0×10^{1}	2.7×10^{-10}	1.0×10^{5}	2.7×10^{-6}
Sr-82	Strontium (38)	1.0×10^{1}	2.7×10^{-10}	1.0×10^{5}	2.7×10^{-6}
Sr-85		1.0×10^{2}	2.7×10^{-9}	1.0×10^{6}	2.7×10^{-5}
Sr-85m		1.0×10^{2}	2.7×10^{-9}	1.0×10^{7}	2.7×10^{-4}
Sr-87m		1.0×10^{2}	2.7×10^{-9}	1.0×10^{6}	2.7×10^{-5}
Sr-89		1.0×10^{3}	2.7×10^{-8}	1.0×10^{6}	2.7×10^{-5}
Sr-90 (b)		1.0×10^{2}	2.7×10^{-9}	1.0×10^{4}	2.7×10^{-7}
Sr-91		1.0×10^{1}	2.7×10^{-10}	1.0×10^{5}	2.7×10^{-6}
Sr-92		1.0×10^{1}	2.7×10^{-10}	1.0×10^{6}	2.7×10^{-5}
T(H-3)	Tritium (1)	1.0×10^{6}	2.7×10^{-5}	1.0×10^{9}	2.7×10^{-2}
Ta-178 (long-lived).	Tantalum (73)	1.0×10^{1}	2.7×10^{-10}	1.0×10^{6}	2.7×10^{-5}
Ta-179		1.0×10^{3}	2.7×10^{-8}	1.0×10^{7}	2.7×10^{-4}
Ta-182		1.0×10^{1}	2.7×10^{-10}	1.0×10^{4}	2.7×10^{-7}
Tb-157	Terbium (65)	1.0×10^{4}	2.7×10^{-7}	1.0×10^{7}	2.7×10^{-4}
Tb-158		1.0×10^{1}	2.7×10^{-10}	1.0×10^{6}	2.7×10^{-5}
Tb-160		1.0×10^{1}	2.7×10^{-10}	1.0×10^{6}	2.7×10^{-5}
Tc-95m	Technetium (43)	1.0×10^{1}	2.7×10^{-10}	1.0×10^{6}	2.7×10^{-5}
Tc-96		1.0×10^{1}	2.7×10^{-10}	1.0×10^{6}	2.7×10^{-5}
Tc-96m		1.0×10^{3}	2.7×10^{-8}	1.0×10^{7}	2.7×10^{-4}
Tc-97		1.0×10^{3}	2.7×10^{-8}	1.0×10^{8}	2.7×10^{-3}
Tc-97m		1.0×10^{3}	2.7×10^{-8}	1.0×10^{7}	2.7×10^{-4}
Tc-98		1.0×10^{1}	2.7×10^{-10}	1.0×10^{6}	2.7×10^{-5}
Tc-99		1.0×10^{4}	2.7×10^{-7}	1.0×10^{7}	2.7×10^{-4}
Tc-99m		1.0×10^{2}	2.7×10^{-9}	1.0×10^{7}	2.7×10^{-4}
Te-121	Tellurium (52)	1.0×10^{1}	2.7×10^{-10}	1.0×10^{6}	2.7×10^{-5}
Te-121m		1.0×10^{2}	2.7×10^{-9}	1.0×10^{6}	2.7×10^{-5}
Te-123m		1.0×10^{2}	2.7×10^{-9}	1.0×10^{7}	2.7×10^{-4}
Te-125m		1.0×10^{3}	2.7×10^{-8}	1.0×10^{7}	2.7×10^{-4}
Te-127		1.0×10^{3}	2.7×10^{-8}	1.0×10^{6}	2.7×10^{-5}
Te-127m		1.0×10^{3}	2.7×10^{-8}	1.0×10^{7}	2.7×10^{-4}
Te-129		1.0×10^{2}	2.7×10^{-9}	1.0×10^{6}	2.7×10^{-5}
Te-129m		1.0×10^{3}	2.7×10^{-8}	1.0×10^{6}	2.7×10^{-5}
Te-131m		1.0×10^{1}	2.7×10^{-10}	1.0×10^{6}	2.7×10^{-5}
Te-132		1.0×10^{2}	2.7×10^{-9}	1.0×10^{7}	2.7×10^{-4}
Th-227	Thorium (90)	1.0×10^{1}	2.7×10^{-10}	1.0×10^{4}	2.7×10^{-7}
Th-228 (b)		1.0	2.7×10^{-11}	1.0×10^{4}	2.7×10^{-7}
Th-229 (b)		1.0	2.7×10^{-11}	1.0×10^{3}	2.7×10^{-8}
Th-230		1.0	2.7×10^{-11}	1.0×10^{4}	2.7×10^{-7}
Th-231		1.0×10^{3}	2.7×10^{-8}	1.0×10^{7}	2.7×10^{-4}
Th-232		1.0×10^{1}	2.7×10^{-10}	1.0×10^{4}	2.7×10^{-7}
Th-234 (b)		1.0×10^{3}	2.7×10^{-8}	1.0×10^{5}	2.7×10^{-6}
Th (nat) (b)		1.0	2.7×10^{-11}	1.0×10^{3}	2.7×10^{-8}
Ti-44	Titanium (22)	1.0×10^{1}	2.7×10^{-10}	1.0×10^{5}	2.7×10^{-6}
Tl-200	Thallium (81)	1.0×10^{1}	2.7×10^{-10}	1.0×10^{6}	2.7×10^{-5}

TABLE A–2—EXEMPT MATERIAL ACTIVITY CONCENTRATIONS AND EXEMPT CONSIGNMENT ACTIVITY LIMITS FOR RADIONUCLIDES—Continued

Symbol of radionuclide	Element and atomic number	Activity concentration for exempt material (Bq/g)	Activity concentration for exempt material (Ci/g)	Activity limit for exempt consignment (Bq)	Activity limit for exempt consignment (Ci)
Tl-201		1.0×10^{2}	2.7×10^{-9}	1.0×10^{6}	2.7×10^{-5}
Tl-202		1.0×10^{2}	2.7×10^{-9}	1.0×10^{6}	2.7×10^{-5}
Tl-204		1.0×10^{4}	2.7×10^{-7}	1.0×10^{4}	2.7×10^{-7}
Tm-167	Thulium (69)	1.0×10^{2}	2.7×10^{-9}	1.0×10^{6}	2.7×10^{-5}
Tm-170		1.0×10^{3}	2.7×10^{-8}	1.0×10^{6}	2.7×10^{-5}
Tm-171		1.0×10^{4}	2.7×10^{-7}	1.0×10^{8}	2.7×10^{-3}
U-230 (fast lung absorption) (b),(d).	Uranium (92)	1.0×10^{1}	2.7×10^{-10}	1.0×10^{5}	2.7×10^{-6}
U-230 (medium lung absorption) (e).		1.0×10^{1}	2.7×10^{-10}	1.0×10^{4}	2.7×10^{-7}
U-230 (slow lung absorption) (f).		1.0×10^{1}	2.7×10^{-10}	1.0×10^{4}	2.7×10^{-7}
U-232 (fast lung absorption) (b),(d).		1.0	2.7×10^{-11}	1.0×10^{3}	2.7×10^{-8}
U-232 (medium lung absorption) (e).		1.0×10^{1}	2.7×10^{-10}	1.0×10^{4}	2.7×10^{-7}
U-232 (slow lung absorption) (f).		1.0×10^{1}	2.7×10^{-10}	1.0×10^{4}	2.7×10^{-7}
U-233 (fast lung absorption) (d).		1.0×10^{1}	2.7×10^{-10}	1.0×10^{4}	2.7×10^{-7}
U-233 (medium lung absorption) (e).		1.0×10^{2}	2.7×10^{-9}	1.0×10^{5}	2.7×10^{-6}
U-233 (slow lung absorption) (f).		1.0×10^{1}	2.7×10^{-10}	1.0×10^{5}	2.7×10^{-6}
U-234 (fast lung absorption) (d).		1.0×10^{1}	2.7×10^{-10}	1.0×10^{4}	2.7×10^{-7}
U-234 (medium lung absorption) (e).		1.0×10^{2}	2.7×10^{-9}	1.0×10^{5}	2.7×10^{-6}
U-234 (slow lung absorption) (f).		1.0×10^{1}	2.7×10^{-10}	1.0×10^{5}	2.7×10^{-6}
U-235 (all lung absorption types) (b),(d),(e),(f).		1.0×10^{1}	2.7×10^{-10}	1.0×10^{4}	2.7×10^{-7}
U-236 (fast lung absorption) (d).		1.0×10^{1}	2.7×10^{-10}	1.0×10^{4}	2.7×10^{-7}
U-236 (medium lung absorption) (e).		1.0×10^{2}	2.7×10^{-9}	1.0×10^{5}	2.7×10^{-6}
U-236 (slow lung absorption) (f).		1.0×10^{1}	2.7×10^{-10}	1.0×10^{4}	2.7×10^{-7}
U-238 (all lung absorption types) (b),(d),(e),(f).		1.0×10^{1}	2.7×10^{-10}	1.0×10^{4}	2.7×10^{-7}
U (nat) (b)		1.0	2.7×10^{-11}	1.0×10^{3}	2.7×10^{-8}
U (enriched to 20% or less)(g).		1.0	2.7×10^{-11}	1.0×10^{3}	2.7×10^{-8}
U (dep)		1.0	2.7×10^{-11}	1.0×10^{3}	2.7×10^{-8}
V-48	Vanadium (23)	1.0×10^{1}	2.7×10^{-10}	1.0×10^{5}	2.7×10^{-6}
V-49		1.0×10^{4}	2.7×10^{-7}	1.0×10^{7}	2.7×10^{-4}
W-178	Tungsten (74)	1.0×10^{1}	2.7×10^{-10}	1.0×10^{6}	2.7×10^{-5}
W-181		1.0×10^{3}	2.7×10^{-8}	1.0×10^{7}	2.7×10^{-4}

TABLE A–2—EXEMPT MATERIAL ACTIVITY CONCENTRATIONS AND EXEMPT CONSIGNMENT ACTIVITY LIMITS FOR RADIONUCLIDES—Continued

Symbol of radionuclide	Element and atomic number	Activity concentration for exempt material (Bq/g)	Activity concentration for exempt material (Ci/g)	Activity limit for exempt consignment (Bq)	Activity limit for exempt consignment (Ci)
W-185		1.0×10^4	2.7×10^{-7}	1.0×10^7	2.7×10^{-4}
W-187		1.0×10^2	2.7×10^{-9}	1.0×10^6	2.7×10^{-5}
W-188		1.0×10^2	2.7×10^{-9}	1.0×10^5	2.7×10^{-6}
Xe-122	Xenon (54)	1.0×10^2	2.7×10^{-9}	1.0×10^9	2.7×10^{-2}
Xe-123		1.0×10^2	2.7×10^{-9}	1.0×10^9	2.7×10^{-2}
Xe-127		1.0×10^3	2.7×10^{-8}	1.0×10^5	2.7×10^{-6}
Xe-131m		1.0×10^4	2.7×10^{-7}	1.0×10^4	2.7×10^{-7}
Xe-133		1.0×10^3	2.7×10^{-8}	1.0×10^4	2.7×10^{-7}
Xe-135		1.0×10^3	2.7×10^{-8}	1.0×10^{10}	2.7×10^{-1}
Y-87	Yttrium (39)	1.0×10^1	2.7×10^{-10}	1.0×10^6	2.7×10^{-5}
Y-88		1.0×10^1	2.7×10^{-10}	1.0×10^6	2.7×10^{-5}
Y-90		1.0×10^3	2.7×10^{-8}	1.0×10^5	2.7×10^{-6}
Y-91		1.0×10^3	2.7×10^{-8}	1.0×10^6	2.7×10^{-5}
Y-91m		1.0×10^2	2.7×10^{-9}	1.0×10^6	2.7×10^{-5}
Y-92		1.0×10^2	2.7×10^{-9}	1.0×10^5	2.7×10^{-6}
Y-93		1.0×10^2	2.7×10^{-9}	1.0×10^5	2.7×10^{-6}
Yb-169	Ytterbium (70)	1.0×10^2	2.7×10^{-9}	1.0×10^7	2.7×10^{-4}
Yb-175		1.0×10^3	2.7×10^{-8}	1.0×10^7	2.7×10^{-4}
Zn-65	Zinc (30)	1.0×10^1	2.7×10^{-10}	1.0×10^6	2.7×10^{-5}
Zn-69		1.0×10^4	2.7×10^{-7}	1.0×10^6	2.7×10^{-5}
Zn-69m		1.0×10^2	2.7×10^{-9}	1.0×10^6	2.7×10^{-5}
Zr-88	Zirconium (40)	1.0×10^2	2.7×10^{-9}	1.0×10^6	2.7×10^{-5}
Zr-93 (b)		1.0×10^3	2.7×10^{-8}	1.0×10^7	2.7×10^{-4}
Zr-95		1.0×10^1	2.7×10^{-10}	1.0×10^6	2.7×10^{-5}
Zr-97 (b)		1.0×10^1	2.7×10^{-10}	1.0×10^5	2.7×10^{-6}

[a] [Reserved]

[b] Parent nuclides and their progeny included in secular equilibrium are listed as follows:

Sr-90	Y-90
Zr-93	Nb-93m
Zr-97	Nb-97
Ru-106	Rh-106
Ag-108m	Ag-108
Cs-137	Ba-137m
Ce-144	Pr-144
Ba-140	La-140
Bi-212	Tl-208 (0.36), Po-212 (0.64)
Pb-210	Bi-210, Po-210
Pb-212	Bi-212, Tl-208 (0.36), Po-212 (0.64)
Rn-222	Po-218, Pb-214, Bi-214, Po-214
Ra-223	Rn-219, Po-215, Pb-211, Bi-211, Tl-207
Ra-224	Rn-220, Po-216, Pb-212, Bi-212, Tl-208 (0.36), Po-212 (0.64)
Ra-226	Rn-222, Po-218, Pb-214, Bi-214, Po-214, Pb-210, Bi-210, Po-210
Ra-228	Ac-228
Th-228	Ra-224, Rn-220, Po-216, Pb-212, Bi-212, Tl-208 (0.36), Po-212(0.64)
Th-229	Ra-225, Ac-225, Fr-221, At-217, Bi-213, Po-213, Pb-209
Th-nat	Ra-228, Ac-228, Th-228, Ra-224, Rn-220, Po-216, Pb-212, Bi-212, Tl-208 (0.36), Po-212 (0.64)
Th-234	Pa-234m
U-230	Th-226, Ra-222, Rn-218, Po-214
U-232	Th-228, Ra-224, Rn-220, Po-216, Pb-212, Bi-212, Tl-208 (0.36), Po-212 (0.64)
U-235	Th-231
U-238	Th-234, Pa-234m
U-nat	Th-234, Pa-234m, U-234, Th-230, Ra-226, Rn-222, Po-218, Pb-214, Bi-214, Po-214, Pb-210, Bi-210, Po-210
Np-237	Pa-233
Am-242m	Am-242
Am-243	Np-239

[c] [Reserved]

[d] These values apply only to compounds of uranium that take the chemical form of UF_6, UO_2F_2 and $UO_2(NO_3)_2$ in both normal and accident conditions of transport.

[e] These values apply only to compounds of uranium that take the chemical form of UO_3, UF_4, UCl_4 and hexavalent compounds in both normal and accident conditions of transport.
[f] These values apply to all compounds of uranium other than those specified in notes (d) and (e) of this table.
[g] These values apply to unirradiated uranium only.

TABLE A–3—GENERAL VALUES FOR A_1 AND A_2

Contents	A_1		A_2		Activity concentration for exempt material (Bq/g)	Activity concentration for exempt material (Ci/g)	Activity limits for exempt consignments (Bq)	Activity limits for exempt consignments (Ci)
	(TBq)	(Ci)	(TBq)	(Ci)				
Only beta or gamma emitting radionuclides are known to be present.	1×10^{-1}	2.7×10^{0}	2×10^{-2}	5.4×10^{-1}	1×10^{1}	2.7×10^{-10}	1×10^{4}	2.7×10^{-7}
Alpha emitting nuclides, but no neutron emitters, are known to be present (a).	2×10^{-1}	5.4×10^{0}	9×10^{-5}	2.4×10^{-3}	1×10^{-1}	2.7×10^{-12}	1×10^{3}	2.7×10^{-8}
Neutron emitting nuclides are known to be present or no relevant data are available.	1×10^{-3}	2.7×10^{-2}	9×10^{-5}	2.4×10^{-3}	1×10^{-1}	2.7×10^{-12}	1×10^{3}	2.7×10^{-8}

[a] If beta or gamma emitting nuclides are known to be present, the A_1 value of 0.1 TBq (2.7 Ci) should be used.

TABLE A–4—ACTIVITY-MASS RELATIONSHIPS FOR URANIUM

Uranium Enrichment [1] wt % U–235 present	Specific Activity	
	TBq/g	Ci/g
0.45	1.8×10^{-8}	5.0×10^{-7}
0.72	2.6×10^{-8}	7.1×10^{-7}
1	2.8×10^{-8}	7.6×10^{-7}
1.5	3.7×10^{-8}	1.0×10^{-6}
5	1.0×10^{-7}	2.7×10^{-6}
10	1.8×10^{-7}	4.8×10^{-6}
20	3.7×10^{-7}	1.0×10^{-5}
35	7.4×10^{-7}	2.0×10^{-5}
50	9.3×10^{-7}	2.5×10^{-5}
90	2.2×10^{-6}	5.8×10^{-5}
93	2.6×10^{-6}	7.0×10^{-5}
95	3.4×10^{-6}	9.1×10^{-5}

[1] The figures for uranium include representative values for the activity of the uranium-234 that is concentrated during the enrichment process.

[69 FR 3800, Jan. 26, 2004; 69 FR 58039, Sept. 29, 2004, as amended at 77 FR 39908, July 6, 2012; 80 FR 34014, June 12, 2015; 85 FR 65663, Oct. 16, 2020]

PART 72—LICENSING REQUIREMENTS FOR THE INDEPENDENT STORAGE OF SPENT NUCLEAR FUEL, HIGH-LEVEL RADIOACTIVE WASTE, AND REACTOR-RELATED GREATER THAN CLASS C WASTE

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AUTHORITY: Atomic Energy Act of 1954, secs. 51, 53, 57, 62, 63, 65, 69, 81, 161, 182, 183, 184, 186, 187, 189, 223, 234, 274 (42 U.S.C. 2071, 2073, 2077, 2092, 2093, 2095, 2099, 2111, 2201, 2210e, 2232, 2233, 2234, 2236, 2237, 2238, 2273, 2282, 2021); Energy Reorganization Act of 1974, secs. 201, 202, 206, 211 (42 U.S.C. 5841, 5842, 5846, 5851); National Environmental Policy Act of 1969 (42 U.S.C. 4332); Nuclear Waste Policy Act of 1982, secs. 117(a), 132, 133, 134, 135, 137, 141, 145(g), 148, 218(a) (42 U.S.C. 10137(a), 10152, 10153, 10154, 10155, 10157, 10161, 10165(g), 10168, 10198(a)); 44 U.S.C. 3504 note.

SOURCE: 53 FR 31658, Aug. 19, 1988, unless otherwise noted.

EDITORIAL NOTE: Nomenclature changes to part 72 appear at 80 FR 74981, Dec. 1, 2015, and at 81 FR 86910, Dec. 2, 2016.

Subpart A—General Provisions

§ 72.1 Purpose.

The regulations in this part establish requirements, procedures, and criteria for the issuance of licenses to receive, transfer, and possess power reactor spent fuel, power reactor-related Greater than Class C (GTCC) waste, and other radioactive materials associated with spent fuel storage in an independent spent fuel storage installation (ISFSI) and the terms and conditions under which the Commission will issue these licenses. The regulations in this part also establish requirements, procedures, and criteria for the issuance of licenses to the Department of Energy (DOE) to receive, transfer, package, and possess power reactor spent fuel, high-level radioactive waste, power reactor-related GTCC waste, and other radioactive materials associated with the storage of these materials in a monitored retrievable storage installation (MRS). The term Monitored Retrievable Storage Installation or MRS, as defined in § 72.3, is derived from the Nuclear Waste Policy Act (NWPA) and includes any installation that meets this definition. The regulations in this part also establish requirements, procedures, and criteria for the issuance of Certificates of Compliance approving spent fuel storage cask designs.

[66 FR 51838, Oct. 11, 2001]

§ 72.2 Scope.

(a) Except as provided in § 72.6(b), licenses issued under this part are limited to the receipt, transfer, packaging, and possession of:

(1) Power reactor spent fuel to be stored in a complex that is designed and constructed specifically for storage of power reactor spent fuel aged for at least one year, other radioactive materials associated with spent fuel storage, and power reactor-related GTCC waste in a solid form in an independent spent fuel storage installation (ISFSI); or

(2) Power reactor spent fuel to be stored in a monitored retrievable storage installation (MRS) owned by DOE that is designed and constructed specifically for the storage of spent fuel aged for at least one year, high-level

radioactive waste that is in a solid form, other radioactive materials associated with storage of these materials, and power reactor-related GTCC waste that is in a solid form.

(b) The regulations in this part pertaining to an independent spent fuel storage installation (ISFSI) and a spent fuel storage cask apply to all persons in the United States, including persons in Agreement States. The regulations in this part pertaining to a monitored retrievable storage installation (MRS) apply only to DOE.

(c) The requirements of this regulation are applicable, as appropriate, to both wet and dry modes of storage of—

(1) Spent fuel and solid reactor-related GTCC waste in an independent spent fuel storage installation (ISFSI); and

(2) Spent fuel, solid high-level radioactive waste, and solid reactor-related GTCC waste in a monitored retrievable storage installation (MRS).

(d) Licenses covering the storage of spent fuel in an existing spent fuel storage installation shall be issued in accordance with the requirements of this part as stated in § 72.40, as applicable.

(e) This part also gives notice to all persons who knowingly provide to any licensee, certificate holder, applicant for a license or certificate, contractor, or subcontractor, components, equipment, materials, or other goods or services, that relate to a licensee's, certificate holder's, or applicant's activities subject to this part, that they may be individually subject to NRC enforcement action for violation of § 72.12.

(f) Certificates of Compliance approving spent fuel storage cask designs shall be issued in accordance with the requirements of subpart L of this part.

[53 FR 31658, Aug. 19, 1988, as amended at 56 FR 40692, Aug. 15, 1991; 63 FR 1900, Jan. 13, 1998; 64 FR 33183, June 22, 1999; 64 FR 56121, Oct. 15, 1999; 66 FR 51838, Oct. 11, 2001]

§ 72.3 Definitions.

As used in this part:

Act means the Atomic Energy Act of 1954 (68 Stat. 919) including any amendments thereto.

Affected Indian Tribe means any Indian Tribe—

(1) Within whose reservation boundaries a monitored retrievable storage facility is proposed to be located;

(2) Whose federally defined possessory or usage rights to other lands outside of the reservation's boundaries arising out of congressionally ratified treaties may be substantially and adversely affected by the locating of such a facility: *Provided*, That the Secretary of the Interior finds, upon the petition of the appropriate governmental officials of the Tribe, that such effects are both substantial and adverse to the Tribe.

Affected unit of local government means any unit of local government with jurisdiction over the site where an MRS is proposed to be located.

AMP, for the purposes of this part, means a program for addressing aging effects that may include prevention, mitigation, condition monitoring, and performance monitoring.

As low as is reasonably achievable (ALARA) means as low as is reasonably achievable taking into account the state of technology, and the economics of improvement in relation to—

(1) Benefits to the public health and safety,

(2) Other societal and socioeconomic considerations, and

(3) The utilization of atomic energy in the public interest.

Atomic energy means all forms of energy released in the course of nuclear fission or nuclear transformation.

Byproduct material means—

(1) Any radioactive material (except special nuclear material) yielded in, or made radioactive by, exposure to the radiation incident to the process of producing or using special nuclear material;

(2)(i) Any discrete source of radium-226 that is produced, extracted, or converted after extraction, before, on, or after August 8, 2005, for use for a commercial, medical, or research activity; or

(ii) Any material that—

(A) Has been made radioactive by use of a particle accelerator; and

(B) Is produced, extracted, or converted after extraction, before, on, or after August 8, 2005, for use for a commercial, medical, or research activity; and

(3) Any discrete source of naturally occurring radioactive material, other than source material, that—

(i) The Commission, in consultation with the Administrator of the Environmental Protection Agency, the Secretary of Energy, the Secretary of Homeland Security, and the head of any other appropriate Federal agency, determines would pose a threat similar to the threat posed by a discrete source of radium-226 to the public health and safety or the common defense and security; and

(ii) Before, on, or after August 8, 2005, is extracted or converted after extraction for use in a commercial, medical, or research activity.

Certificate holder means a person who has been issued a Certificate of Compliance by the Commission for a spent fuel storage cask design.

Certificate of Compliance or *CoC* means the certificate issued by the Commission that approves the design of a spent fuel storage cask in accordance with the provisions of subpart L of this part.

Commencement of construction means any clearing of land, excavation, or other substantial action that would adversely affect the natural environment of a site, but does not mean:

(1) Changes desirable for the temporary use of the land for public recreational uses, necessary borings or excavations to determine subsurface materials and foundation conditions, or other preconstruction monitoring to establish background information related to the suitability of the site or to the protection of environmental values;

(2) Construction of environmental monitoring facilities;

(3) Procurement or manufacture of components of the installation; or

(4) Construction of means of access to the site as may be necessary to accomplish the objectives of paragraphs (1) and (2) of this definition.

Commission means the Nuclear Regulatory Commission or its duly authorized representatives.

Confinement systems means those systems, including ventilation, that act as barriers between areas containing radioactive substances and the environment.

Controlled area means that area immediately surrounding an ISFSI or MRS for which the licensee exercises authority over its use and within which ISFSI or MRS operations are performed.

Decommission means to remove a facility or site safely from service and reduce residual radioactivity to a level that permits—

(1) Release of the property for unrestricted use and termination of the license; or

(2) Release of the property under restricted conditions and termination of the license.

Design bases means that information that identifies the specific functions to be performed by a structure, system, or component of a facility or of a spent fuel storage cask and the specific values or ranges of values chosen for controlling parameters as reference bounds for design. These values may be restraints derived from generally accepted state-of-the-art practices for achieving functional goals or requirements derived from analysis (based on calculation or experiments) of the effects of a postulated event under which a structure, system, or component must meet its functional goals. The values for controlling parameters for external events include—

(1) Estimates of severe natural events to be used for deriving design bases that will be based on consideration of historical data on the associated parameters, physical data, or analysis of upper limits of the physical processes involved; and

(2) Estimates of severe external man-induced events to be used for deriving design bases that will be based on analysis of human activity in the region, taking into account the site characteristics and the risks associated with the event.

Design capacity means the quantity of spent fuel, high-level radioactive waste, or reactor-related GTCC waste, the maximum burn up of the spent fuel in MWD/MTU, the terabequerel (curie) content of the waste, and the total heat generation in Watts (btu/hour) that the storage installation is designed to accommodate.

DOE means the U.S. Department of Energy or its duly authorized representatives.

Floodplain means the lowland and relatively flat areas adjoining inland and coastal waters including floodprone areas of offshore islands. Areas subject to a one percent or greater chance of flooding in any given year are included.

Greater than Class C waste or GTCC waste means low-level radioactive waste that exceeds the concentration limits of radionuclides established for Class C waste in § 61.55 of this chapter.

High-level radioactive waste or *HLW* means (1) the highly radioacive material resulting from the reprocessing of spent nuclear fuel, including liquid waste produced directly in reprocessing and any solid material derived from such liquid waste that contains fission products in sufficient concentrations; and (2) other highly radioactive material that the Commission, consistent with existing law, determines by rule requires permanent isolation.

Historical data means a compilation of the available published and unpublished information concerning a particular type of event.

Independent spent fuel storage installation or *ISFSI* means a complex designed and constructed for the interim storage of spent nuclear fuel, solid reactor-related GTCC waste, and other radioactive materials associated with spent fuel and reactor-related GTCC waste storage. An ISFSI which is located on the site of another facility licensed under this part or a facility licensed under part 50 of this chapter and which shares common utilities and services with that facility or is physically connected with that other facility may still be considered independent.

Indian Tribe means an Indian Tribe as defined in the Indian Self Determination and Education Assistance Act (Pub. L. 93–638).

Monitored Retrievable Storage Installation or MRS means a complex designed, constructed, and operated by DOE for the receipt, transfer, handling, packaging, possession, safeguarding, and storage of spent nuclear fuel aged for at least one year, solidified high-level radioactive waste resulting from civilian nuclear activities, and solid reactor-related GTCC waste, pending shipment to a HLW repository or other disposal.

NEPA means the National Environmental Policy Act of 1969 including any amendments thereto.

NWPA means the Nuclear Waste Policy Act of 1982 including any amendments thereto.

Person means—

(1) Any individual, corporation, partnership, firm, association, trust, estate, public or private institution, group, Government agency other than the Commission or the Department of Energy (DOE), except that the DOE shall be considered a person within the meaning of the regulations in this part to the extent that its facilities and activities are subject to the licensing and related regulatory authority of the Commission pursuant to section 202 of the Energy Reorganization Act of 1974, as amended (88 Stat. 1244), and Sections 131, 132, 133, 135, 137, and 141 of the Nuclear Waste Policy Act of 1982 (96 Stat. 2229, 2230, 2232, 2241);

(2) Any State, any political subdivision of a State, or any political entity within a State;

(3) Any foreign government or nation, or any political subdivision of any such government or nation, or other entity; and

(4) Any legal successor, representative, agent, or agency of the foregoing.

Population means the people that may be affected by the change in environmental conditions due to the construction, operation, or decommissioning of an ISFSI or MRS.

Principal activities, as used in this part, means activities authorized by the license which are essential to achieving the purpose(s) for which the license was issued or amended, excluding activities incidental to decontamination or decommissioning.

Reconciliation means the process of evaluating and comparing licensee reports required under this part to the projected material balances generated by the Nuclear Materials Management and Safeguards System. This process is considered complete when the licensee resolves any differences between the reported and projected balances, including those listed for foreign obligated materials.

Region means the geographical area surrounding and including the site, which is large enough to contain all the features related to a phenomenon or to a particular event that could potentially impact the safe or environmentally sound construction, operation, or decommissioning of an independent spent fuel storage or monitored retrievable storage installation.

Reservation means—

(1) Any Indian reservation or dependent Indian community referred to in clause (a) or (b) of section 1151 of title 18, United States Code; or

(2) Any land selected by an Alaska Native village or regional corporation under the provisions of the Alaska Native Claims Settlement Act (43 U.S.C. 1601 *et seq.*).

Site means the real property on which the ISFSI or MRS is located.

Source material means—

(1) Uranium or thorium, or any combination thereof, in any physical or chemical form or

(2) Ores that contain by weight one-twentieth of one percent (0.05%) or more of:

(i) Uranium,

(ii) Thorium, or

(iii) Any combination thereof.

Source material does not include special nuclear material.

Special nuclear material means—

(1) Plutonium, uranium-233, uranium enriched in the isotope 233 or in the isotope 235, and any other material which the Commission, pursuant to the provisions of section 51 of the Act, determines to be special nuclear material, but does not include source material; or

(2) Any material artificially enriched by any of the foregoing but does not include source material.

Spent fuel storage cask or *cask* means all the components and systems associated with the container in which spent fuel or other radioactive materials associated with spent fuel are stored in an ISFSI.

Spent nuclear fuel or *Spent fuel* means fuel that has been withdrawn from a nuclear reactor following irradiation, has undergone at least one year's decay since being used as a source of energy in a power reactor, and has not been chemically separated into its constituent elements by reprocessing. Spent fuel includes the special nuclear material, byproduct material, source material, and other radioactive materials associated with fuel assemblies.

Structures, systems, and components important to safety means those features of the ISFSI, MRS, and spent fuel storage cask whose functions are—

(1) To maintain the conditions required to store spent fuel, high-level radioactive waste, or reactor-related GTCC waste safely;

(2) To prevent damage to the spent fuel, the high-level radioactive waste, or reactor-related GTCC waste container during handling and storage; or

(3) To provide reasonable assurance that spent fuel, high-level radioactive waste, or reactor-related GTCC waste can be received, handled, packaged, stored, and retrieved without undue risk to the health and safety of the public.

Term certified by the cask's Certificate of Compliance, for the purposes of this part, means, for an initial CoC, the period of time commencing with the CoC effective date and ending with the CoC expiration date, and for a renewed CoC, the period of time commencing with the most recent CoC renewal date and ending with the CoC expiration date.

TLAAs, for the purposes of this part, means those licensee or certificate holder calculations and analyses that:

(1) Involve structures, systems, and components important to safety within the scope of the license renewal, as delineated in subpart F of this part, or within the scope of the spent fuel storage certificate renewal, as delineated in subpart L of this part, respectively;

(2) Consider the effects of aging;

(3) Involve time-limited assumptions defined by the current operating term, for example, 40 years;

(4) Were determined to be relevant by the licensee or certificate holder in making a safety determination;

(5) Involve conclusions or provide the basis for conclusions related to the capability of structures, systems, and components to perform their intended safety functions; and

(6) Are contained or incorporated by reference in the design bases.

[53 FR 31658, Aug. 19, 1988, as amended at 59 FR 36038, July 15, 1994; 62 FR 39092, July 21, 1997; 64 FR 53614, Oct. 4, 1999; 64 FR 56121, Oct. 15, 1999; 66 FR 51839, Oct. 11, 2001; 72 FR 55933, Oct. 1, 2007; 73 FR 32462, June 9, 2008; 76 FR 8889, Feb. 16, 2011]

§ 72.4 Communications.

Except where otherwise specified, all communications and reports concerning the regulations in this part and applications filed under them should be sent by mail addressed: ATTN: Document Control Desk, Director, Division of Fuel Management, Office of Nuclear Material Safety and Safeguards, U.S. Nuclear Regulatory Commission, Washington, DC 20555–0001; by hand delivery to the NRC's offices at One White Flint North, 11555 Rockville Pike, Rockville, Maryland between 7:30 a.m. and 4:15 p.m. eastern time; or, where practicable, by electronic submission, for example, via Electronic Information Exchange, or CD-ROM. Electronic submissions must be made in a manner that enables the NRC to receive, read, authenticate, distribute, and archive the submission, and process and retrieve it a single page at a time. Detailed guidance on making electronic submissions can be obtained by visiting the NRC's Web site at *http://www.nrc.gov/site-help/e-submittals.html;* by e-mail to *MSHD.Resource@nrc.gov;* or by writing the Office of the Chief Information Officer, U.S. Nuclear Regulatory Commission, Washington, DC 20555–0001. The guidance discusses, among other topics, the formats the NRC can accept, the use of electronic signatures, and the treatment of nonpublic information. If the submission deadline date falls on a Saturday, or Sunday, or a Federal holiday, the next Federal working day becomes the official due date.

[68 FR 58818, Oct. 10, 2003, as amended at 74 FR 62684, Dec. 1, 2009; 75 FR 73945, Nov. 30, 2010; 79 FR 75741, Dec. 19, 2014; 80 FR 74981, Dec. 1, 2015; 84 FR 65646, Nov. 29, 2019]

§ 72.5 Interpretations.

Except as specifically authorized by the Commission in writing, no interpretation of the meaning of the regulations in this part by an officer or employee of the Commission, other than a written interpretation by the General Counsel, will be recognized to be binding upon the Commission.

§ 72.6 License required; types of licenses.

(a) Licenses for the receipt, handling, storage, and transfer of spent fuel or high-level radioactive waste are of two types: general and specific. Licenses for the receipt, handling, storage, and transfer of reactor-related GTCC are specific licenses. Any general license provided in this part is effective without the filing of an application with the Commission or the issuance of a licensing document to a particular person. A specific license is issued to a named person upon application filed pursuant to regulations in this part.

(b) A general license is hereby issued to receive title to and own spent fuel, high-level radioactive waste, or reactor-related GTCC waste without regard to quantity. Notwithstanding any other provision of this chapter, a general licensee under this paragraph is not authorized to acquire, deliver, receive, possess, use, or transfer spent fuel, high-level radioactive waste, or reactor-related GTCC waste except as authorized in a specific license.

(c) Except as authorized in a specific license and in a general license under subpart K of this part issued by the Commission in accordance with the regulations in this part, no person may acquire, receive, or possess—

(1) Spent fuel for the purpose of storage in an ISFSI; or

(2) Spent fuel, high-level radioactive waste, or radioactive material associated with high-level radioactive waste for the purpose of storage in an MRS.

[66 FR 51839, Oct. 11, 2001]

§ 72.7 Specific exemptions.

The Commission may, upon application by any interested person or upon its own initiative, grant such exemptions from the requirements of the regulations in this part as it determines are authorized by law and will not endanger life or property or the common defense and security and are otherwise in the public interest.

§ 72.8 Denial of licensing by Agreement States.

Agreement States may not issue licenses covering the storage of spent fuel and reactor-related GTCC waste in an ISFSI or the storage of spent fuel, high-level radioactive waste, and reactor-related GTCC waste in an MRS.

[66 FR 51839, Oct. 11, 2001]

§ 72.9 Information collection requirements: OMB approval.

(a) The Nuclear Regulatory Commission has submitted the information collection requirements contained in this part to the Office of Management and Budget (OMB) for approval as required by the Paperwork Reduction Act of 1995 (44 U.S.C. 3501 *et seq.*). OMB has approved the information collection requirements contained in this part under control number 3150–0132.

(b) The approved information collection requirements contained in this part appear in §§ 72.7, 72.11, 72.16, 72.22 through 72.34, 72.42, 72.44, 72.48 through 72.56, 72.62, 72.70, through 72.80, 72.90, 72.92, 72.94, 72.98, 72.100, 72.102, 72.103, 72.104, 72.108, 72.120, 72.126, 72.140 through 72.176, 72.180 through 72.186, 72.192, 72.206, 72.212, 72.218, 72.230, 72.232, 72.234, 72.236, 72.240, 72.242, 72.244, 72.248.

(c) In § 72.79, Form N–71 and associated forms are approved under control number 3150–0056, and DOC/IAEA Design Information Questionnaire forms, NRC Forms AP–1, AP–A, and associated forms are approved under control number 0694–0135.

[64 FR 56122, Oct. 15, 1999, as amended at 67 FR 67101, Nov. 4, 2002; 68 FR 54149, Sept. 16, 2003; 73 FR 78607, Dec. 23, 2008; 77 FR 39909, July 6, 2012; 85 FR 65663, Oct. 16, 2020]

§ 72.10 Employee protection.

(a) Discrimination by a Commission licensee, certificate holder, an applicant for a Commission license or a CoC, or a contractor or subcontractor of any of these, against an employee for engaging in certain protected activities, is prohibited. Discrimination includes discharge and other actions that relate to compensation, terms, conditions, or privileges of employment. The protected activities are established in section 211 of the Energy Reorganization Act of 1974, as amended, and in general are related to the administration or enforcement of a requirement imposed under the Atomic Energy Act or the Energy Reorganization Act.

(1) The protected activities include but are not limited to:

(i) Providing the Commission or his or her employer information about alleged violations of either of the statutes named in paragraph (a) introductory text of this section or possible violations of requirements imposed under either of those statutes;

(ii) Refusing to engage in any practice made unlawful under either of the statutes named in paragraph (a) introductory text or under these requirements if the employee has identified the alleged illegality to the employer;

(iii) Requesting the Commission to institute action against his or her employer for the administration or enforcement of these requirements;

(iv) Testifying in any Commission proceeding, or before Congress, or at any Federal or State proceeding regarding any provision (or proposed provision) of either of the statutes named in paragraph (a) introductory text.

(v) Assisting or participating in, or is about to assist or participate in, these activities.

(2) These activities are protected even if no formal proceeding is actually initiated as a result of the employee assistance or participation.

(3) This section has no application to any employee alleging discrimination prohibited by this section who, acting without direction from his or her employer (or the employer's agent), deliberately causes a violation of any requirement of the Energy Reorganization Act of 1974, as amended, or the Atomic Energy Act of 1954, as amended.

(b) Any employee who believes that he or she has been discharged or otherwise discriminated against by any person for engaging in protected activities specified in paragraph (a)(1) of this section may seek a remedy for the discharge or discrimination through an administrative proceeding in the Department of Labor. The administrative proceeding must be initiated within 180 days after an alleged violation occurs. The employee may do this by filing a complaint alleging the violation with

the Department of Labor, Employment Standards Administration, Wage and Hour Division. The Department of Labor may order reinstatement, back pay, and compensatory damages.

(c) A violation of paragraph (a), (e), or (f) of this section by a Commission licensee, certificate holder, applicant for a Commission license or a CoC, or a contractor or subcontractor of any of these may be grounds for:

(1) Denial, revocation, or suspension of the license or the CoC.

(2) Imposition of a civil penalty on the licensee, applicant, or a contractor or subcontractor of the licensee or applicant.

(3) Other enforcement action.

(d) Actions taken by an employer, or others, which adversely affect an employee may be predicated upon nondiscriminatory grounds. The prohibition applies when the adverse action occurs because the employee has engaged in protected activities. An employee's engagement in protected activities does not automatically render him or her immune from discharge or discipline for legitimate reasons or from adverse action dictated by nonprohibited considerations.

(e)(1) Each licensee, certificate holder, and applicant for a license or CoC must prominently post the revision of NRC Form 3, ''Notice to Employees,'' referenced in 10 CFR 19.11(c). This form must be posted at locations sufficient to permit employees protected by this section to observe a copy on the way to or from their place of work. The premises must be posted not later than 30 days after an application is docketed and remain posted while the application is pending before the Commission, during the term of the license or CoC, and for 30 days following license or CoC termination.

(2) Copies of NRC Form 3 may be obtained by writing to the Regional Administrator of the appropriate U.S. Nuclear Regulatory Commission Regional Office listed in Appendix D to Part 20 of this chapter, via email to *Forms.Resource@nrc.gov*, or by visiting the NRC's online library at *http://www.nrc.gov/reading-rm/doc-collections/forms/*.

(f) No agreement affecting the compensation, terms, conditions, or privileges of employment, including an agreement to settle a complaint filed by an employee with the Department of Labor pursuant to section 211 of the Energy Reorganization Act of 1974, as amended, may contain any provision which would prohibit, restrict, or otherwise discourage an employee from participating in protected activity as defined in paragraph (a)(1) of this section including, but not limited to, providing information to the NRC or to his or her employer on potential violations or other matters within NRC's regulatory responsibilities.

[58 FR 52414, Oct. 8, 1993, as amended at 60 FR 24552, May 9, 1995; 61 FR 6766, Feb. 22, 1996; 64 FR 56122, Oct. 15, 1999; 68 FR 58819, Oct. 10, 2003; 72 FR 63975, Nov. 14, 2007; 73 FR 30460, May 28, 2008; 79 FR 66606, Nov. 10, 2014]

§ 72.11 Completeness and accuracy of information.

(a) Information provided to the Commission by a licensee, certificate holder, or an applicant for a license or CoC; or information required by statute or by the Commission's regulations, orders, license or CoC conditions, to be maintained by the licensee or certificate holder, must be complete and accurate in all material respects.

(b) Each licensee, certificate holder, or applicant for a license or CoC must notify the Commission of information identified by the licensee, certificate holder, or applicant for a license or CoC as having, for the regulated activity, a significant implication for public health and safety or common defense and security. A licensee, certificate holder, or an applicant for a license or CoC violates this paragraph only if the licensee, certificate holder, or applicant for a license or CoC fails to notify the Commission of information that the licensee, certificate holder, or applicant for a license or CoC has identified as having a significant implication for public health and safety or common defense and security. Notification must be provided to the Administrator of the appropriate Regional Office within two working days of identifying the information. This requirement is not applicable to information which is already

required to be provided to the Commission by other reporting or updating requirements.

[64 FR 56122, Oct. 15, 1999]

§ 72.12 Deliberate misconduct.

(a) Any licensee, certificate holder, applicant for a license or certificate, employee of a licensee, certificate holder, or applicant for a license or certificate; or any contractor (including a supplier or consultant) or subcontractor, employee of a contractor or subcontractor of any licensee, certificate holder, or applicant for a license or certificate who knowingly provides to any licensee, certificate holder, applicant for a license or certificate, contractor, or subcontractor, any components, materials, or other goods or services that relate to a licensee's, certificate holder's, or applicant's activities subject to this part, may not:

(1) Engage in deliberate misconduct that causes or would have caused, if not detected, a licensee, certificate holder or applicant to be in violation of any rule, regulation, or order; or any term, condition, or limitation of any license or certificate issued by the Commission; or

(2) Deliberately submit to the NRC, a licensee, a certificate holder, an applicant for a license or certificate, or a licensee's, applicant's, or certificate holder's contractor or subcontractor, information that the person submitting the information knows to be incomplete or inaccurate in some respect material to the NRC.

(b) A person who violates paragraph (a)(1) or (a)(2) of this section may be subject to enforcement action in accordance with the procedures in 10 CFR part 2, subpart B.

(c) For the purposes of paragraph (a)(1) of this section, deliberate misconduct by a person means an intentional act or omission that the person knows:

(1) Would cause a licensee, certificate holder or applicant for a license or certificate to be in violation of any rule, regulation, or order; or any term, condition, or limitation, of any license or certificate issued by the Commission; or

(2) Constitutes a violation of a requirement, procedure, instruction, contract, purchase order, or policy of a licensee, certificate holder, applicant, contractor, or subcontractor.

[63 FR 1900, Jan. 13, 1998]

§ 72.13 Applicability.

(a) This section identifies those sections, under this part, that apply to the activities associated with a specific license, a general license, or a certificate of compliance.

(b) The following sections apply to activities associated with a specific license: §§ 72.1; 72.2(a) through (e); 72.3 through 72.13(b); 72.16 through 72.34; 72.40 through 72.62; 72.70 through 72.86; 72.90 through 72.108; 72.120 through 72.130; 72.140 through 72.176; 72.180 through 72.186; 72.190 through 72.194; and 72.200 through 72.206.

(c) The following sections apply to activities associated with a general license: 72.1; 72.2(a)(1), (b), (c), and (e); 72.3 through 72.6(c)(1); 72.7 through 72.13(a) and (c); 72.30(b), (c), (d), (e) and (f); 72.32(c) and (d); 72.44(b) and (f); 72.48; 72.50(a); 72.52(a), (b), (d), and (e); 72.60; 72.62; 72.72 through 72.80(f); 72.82 through 72.86; 72.104; 72.106; 72.122; 72.124; 72.126; 72.140 through 72.176; 72.190; 72.194; 72.210 through 72.220, and 72.240(a).

(d) The following sections apply to activities associated with a certificate of compliance: §§ 72.1; 72.2(e) and (f); 72.3; 72.4; 72.5; 72.7; 72.9 through 72.13(a) and (d); 72.48; 72.84(a); 72.86; 72.124; 72.140 through 72.176; 72.214; and 72.230 through 72.248.

[65 FR 50616, Aug. 21, 2000, as amended at 76 FR 35573, June 17, 2011]

Subpart B—License Application, Form, and Contents

§ 72.16 Filing of application for specific license.

(a) *Place of filing*. Each application for a license, or amendment thereof, under this part should be filed with the Director of the NRC's Division of Fuel Management, Office of Nuclear Material Safety and Safeguards in accordance with § 72.4.

(b) *Oath or affirmation*. Each application for a license or license amendment (including amendments to such applications), except for those filed by DOE,

must be executed in an original signed by the applicant or duly authorized officer thereof under oath or affirmation. Each application for a license or license amendment (including amendments to such applications) filed by DOE must be signed by the Secretary of Energy or the Secretary's authorized representative.

(c) *Copies of application on paper or CD-ROM*. If the application is on paper, it must be the signed original. The applicant shall maintain the capability to generate additional copies for distribution in accordance with instruction from the Director or the Director's designee.

(d) *Fees*. The application, amendment, and renewal fees applicable to a license covering an ISFSI are those shown in § 170.31 of this chapter.

(e) *Notice of docketing*. Upon receipt of an application for a license or license amendment under this part, the Director, Office of Nuclear Material Safety and Safeguards or the Director's designee will assign a docket number to the application, notify the applicant of the docket number, instruct the applicant to distribute copies retained by the applicant in accordance with paragraph (c) of this section, and cause a notice of docketing to be published in the FEDERAL REGISTER. The notice of docketing shall identify the site of the ISFSI or the MRS by locality and State and may include a notice of hearing or a notice of proposed action and opportunity for hearing as provided by § 72.46 of this part. In the case of an application for a license or an amendment to a license for an MRS, the Director, Office of Nuclear Material Safety and Safeguards, or the Director's designee, in accordance with § 72.200 of this part, shall send a copy of the notice of docketing to the Governor and legislature of any State in which an MRS is or may be located, to the Chief Executive of the local municipality, to the Governors of any contiguous States and to the governing body of any affected Indian Tribe.

[53 FR 31658, Aug. 19, 1988, as amended at 53 FR 43421, Oct. 27, 1988; 66 FR 51839, Oct. 11, 2001; 67 FR 3586, Jan. 25, 2002; 68 FR 58819, Oct. 10, 2003; 75 FR 73945, Nov. 30, 2010; 79 FR 75741, Dec. 19, 2014; 84 FR 65646, Nov. 29, 2019]

§ 72.18 Elimination of repetition.

In any application under this part, the applicant may incorporate by reference information contained in previous applications, statements, or reports filed with the Commission: Provided, That such references are clear and specific.

§ 72.20 Public inspection of application.

Applications and documents submitted to the Commission in connection with applications may be made available for public inspection in accordance with provisions of the regulations contained in parts 2 and 9 of this chapter.

§ 72.22 Contents of application: General and financial information.

Each application must state:

(a) Full name of applicant;

(b) Address of applicant;

(c) Description of business or occupation of applicant;

(d) If applicant is:

(1) An individual: Citizenship and age;

(2) A partnership: Name, citizenship, and address of each partner and the principal location at which the partnership does business;

(3) A corporation or an unincorporated association:

(i) The State in which it is incorporated or organized and the principal location at which it does business; and

(ii) The names, addresses, and citizenship of its directors and principal officers;

(4) Acting as an agent or representative of another person in filing the application: The identification of the principal and the information required under this paragraph with respect to such principal.

(5) The Department of Energy:

(i) The identification of the DOE organization responsible for the construction and operation of the ISFSI or MRS, including a description of any delegations of authority and assignments of responsibilities.

(ii) For each application for a license for an MRS, the provisions of the public law authorizing the construction and operation of the MRS.

(e) Except for DOE, information sufficient to demonstrate to the Commission the financial qualifications of the applicant to carry out, in accordance with the regulations in this chapter, the activities for which the license is sought. The information must state the place at which the activity is to be performed, the general plan for carrying out the activity, and the period of time for which the license is requested. The information must show that the applicant either possesses the necessary funds, or that the applicant has reasonable assurance of obtaining the necessary; funds or that by a combination of the two, the applicant will have the necessary funds available to cover the following:

(1) Estimated construction costs;

(2) Estimated operating costs over the planned life of the ISFSI; and

(3) Estimated decommissioning costs, and the necessary financial arrangements to provide reasonable assurance before licensing, that decommissioning will be carried out after the removal of spent fuel, high-level radioactive waste, and/or reactor-related GTCC waste from storage.

(f) Each applicant for a license under this part to receive, transfer, and possess power reactor spent fuel, power reactor-related Greater than Class C (GTCC) waste, and other radioactive materials associated with spent fuel storage in an independent spent fuel storage installation (ISFSI) shall protect Safeguards Information against unauthorized disclosure in accordance with the requirements in § 73.21 and the requirements of § 73.22 or § 73.23, as applicable.

[53 FR 31658, Aug. 19, 1988, as amended at 66 FR 51839, Oct. 11, 2001; 73 FR 63573, Oct. 24, 2008]

§ 72.24 Contents of application: Technical information.

Each application for a license under this part must include a Safety Analysis Report describing the proposed ISFSI or MRS for the receipt, handling, packaging, and storage of spent fuel, high-level radioactive waste, and/or reactor-related GTCC waste as appropriate, including how the ISFSI or MRS will be operated. The minimum information to be included in this report must consist of the following:

(a) A description and safety assessment of the site on which the ISFSI or MRS is to be located, with appropriate attention to the design bases for external events. Such assessment must contain an analysis and evaluation of the major structures, systems, and components of the ISFSI or MRS that bear on the suitability of the site when the ISFSI or MRS is operated at its design capacity. If the proposed ISFSI or MRS is to be located on the site of a nuclear power plant or other licensed facility, the potential interactions between the ISFSI or MRS and such other facility—including shared common utilities and services—must be evaluated.

(b) A description and discussion of the ISFSI or MRS structures with special attention to design and operating characteristics, unusual or novel design features, and principal safety considerations.

(c) The design of the ISFSI or MRS in sufficient detail to support the findings in § 72.40 for the term requested in the application, including:

(1) The design criteria for the ISFSI or MRS pursuant to subpart F of this part, with identification and justification for any additions to or departures from the general design criteria;

(2) the design bases and the relation of the design bases to the design criteria;

(3) Information relative to materials of construction, general arrangement, dimensions of principal structures, and descriptions of all structures, systems, and components important to safety, in sufficient detail to support a finding that the ISFSI or MRS will satisfy the design bases with an adequate margin for safety; and

(4) Applicable codes and standards.

(d) An analysis and evaluation of the design and performance of structures, systems, and components important to safety, with the objective of assessing the impact on public health and safety resulting from operation of the ISFSI or MRS and including determination of:

(1) The margins of safety during normal operations and expected operational occurrences during the life of the ISFSI or MRS; and

(2) The adequacy of structures, systems, and components provided for the prevention of accidents and the mitigation of the consequences of accidents, including natural and manmade phenomena and events.

(e) The means for controlling and limiting occupational radiation exposures within the limits given in part 20 of this chapter, and for meeting the objective of maintaining exposures as low as is reasonably achievable.

(f) The features of ISFSI or MRS design and operating modes to reduce to the extent practicable radioactive waste volumes generated at the installation.

(g) An identification and justification for the selection of those subjects that will be probable license conditions and technical specifications. These subjects must cover the design, construction, preoperational testing, operation, and decommissioning of the ISFSI or MRS.

(h) A plan for the conduct of operations, including the planned managerial and administrative controls system, and the applicant's organization, and program for training of personnel pursuant to subpart I.

(i) If the proposed ISFSI or MRS incorporates structures, systems, or components important to safety whose functional adequacy or reliability have not been demonstrated by prior use for that purpose or cannot be demonstrated by reference to performance data in related applications or to widely accepted engineering principles, an identification of these structures, systems, or components along with a schedule showing how safety questions will be resolved prior to the initial receipt of spent fuel, high-level radioactive waste, and/or reactor-related GTCC waste as appropriate for storage at the ISFSI or MRS.

(j) The technical qualifications of the applicant to engage in the proposed activities, as required by § 72.28.

(k) A description of the applicant's plans for coping with emergencies, as required by § 72.32.

(l) A description of the equipment to be installed to maintain control over radioactive materials in gaseous and liquid effluents produced during normal operations and expected operational occurrences. The description must identify the design objectives and the means to be used for keeping levels of radioactive material in effluents to the environment as low as is reasonably achievable and within the exposure limits stated in § 72.104. The description must include:

(1) An estimate of the quantity of each of the principal radionuclides expected to be released annually to the environment in liquid and gaseous effluents produced during normal ISFSI or MRS operations;

(2) A description of the equipment and processes used in radioactive waste systems; and

(3) A general description of the provisions for packaging, storage, and disposal of solid wastes containing radioactive materials resulting from treatment of gaseous and liquid effluents and from other sources.

(m) An analysis of the potential dose equivalent or committed dose equivalent to an individual outside the controlled area from accidents or natural phenomena events that result in the release of radioactive material to the environment or direct radiation from the ISFSI or MRS. The calculations of individual dose equivalent or committed dose equivalent must be performed for direct exposure, inhalation, and ingestion occurring as a result of the postulated design basis event.

(n) A description of the quality assurance program that satisfies the requirements of subpart G to be applied to the design, fabrication, construction, testing, operation, modification, and decommissioning of the structures, systems, and components of the ISFSI or MRS important to safety. The description must identify the structures, systems, and components important to safety. The program must also apply to managerial and administrative controls used to ensure safe operation of the ISFSI or MRS.

(o) A description of the detailed security measures for physical protection, including design features and the plans required by subpart H. For an application from DOE for an ISFSI or MRS, DOE will provide a description of the physical protection plan for protection against radiological sabotage as required by subpart H.

(p) A description of the program covering preoperational testing and initial operations.

(q) A description of the decommissioning plan required under § 72.30.

[53 FR 31658, Aug. 19, 1988, as amended at 63 FR 26961, May 15, 1998; 64 FR 53615, Oct. 4, 1999; 66 FR 51839, Oct. 11, 2001; 76 FR 8890, Feb. 16, 2011]

§ 72.26 Contents of application: Technical specifications.

Each application under this part shall include proposed technical specifications in accordance with the requirements of § 72.44 and a summary statement of the bases and justifications for these technical specifications.

§ 72.28 Contents of application: Applicant's technical qualifications.

Each application under this part must include:

(a) The technical qualifications, including training and experience, of the applicant to engage in the proposed activities;

(b) A description of the personnel training program required under subpart I;

(c) A description of the applicant's operating organization, delegations of responsibility and authority and the minimum skills and experience qualifications relevant to the various levels of responsibility and authority; and

(d) A commitment by the applicant to have and maintain an adequate complement of trained and certified installation personnel prior to the receipt of spent fuel, high-level radioactive waste, and/or reactor-related GTCC waste as appropriate for storage.

[53 FR 31658, Aug. 19, 1988, as amended at 66 FR 51840, Oct. 11, 2001]

§ 72.30 Financial assurance and recordkeeping for decommissioning.

(a) Each application under this part must include a proposed decommissioning plan that contains sufficient information on proposed practices and procedures for the decontamination of the site and facilities and for disposal of residual radioactive materials after all spent fuel, high-level radioactive waste, and reactor-related GTCC waste have been removed, in order to provide reasonable assurance that the decontamination and decommissioning of the ISFSI or MRS at the end of its useful life will provide adequate protection to the health and safety of the public. This plan must identify and discuss those design features of the ISFSI or MRS that facilitate its decontamination and decommissioning at the end of its useful life.

(b) Each holder of, or applicant for, a license under this part must submit for NRC review and approval a decommissioning funding plan that must contain:

(1) Information on how reasonable assurance will be provided that funds will be available to decommission the ISFSI or MRS.

(2) A detailed cost estimate for decommissioning, in an amount reflecting:

(i) The cost of an independent contractor to perform all decommissioning activities;

(ii) An adequate contingency factor; and

(iii) The cost of meeting the § 20.1402 of this chapter criteria for unrestricted use, provided that, if the applicant or licensee can demonstrate its ability to meet the provisions of § 20.1403 of this chapter, the cost estimate may be based on meeting the § 20.1403 criteria.

(3) Identification of and justification for using the key assumptions contained in the DCE.

(4) A description of the method of assuring funds for decommissioning from paragraph (e) of this section, including means for adjusting cost estimates and associated funding levels periodically over the life of the facility.

(5) The volume of onsite subsurface material containing residual radioactivity that will require remediation to meet the criteria for license termination.

(6) A certification that financial assurance for decommissioning has been provided in the amount of the cost estimate for decommissioning.

(c) At the time of license renewal and at intervals not to exceed 3 years, the decommissioning funding plan must be resubmitted with adjustments as necessary to account for changes in costs and the extent of contamination. If the amount of financial assurance will be adjusted downward, this can not be

done until the updated decommissioning funding plan is approved. The decommissioning funding plan must update the information submitted with the original or prior approved plan and must specifically consider the effect of the following events on decommissioning costs:

(1) Spills of radioactive material producing additional residual radioactivity in onsite subsurface material.

(2) Facility modifications.

(3) Changes in authorized possession limits.

(4) Actual remediation costs that exceed the previous cost estimate.

(d) If, in surveys made under 10 CFR 20.1501(a), residual radioactivity in soils or groundwater is detected at levels that would require such radioactivity to be reduced to a level permitting release of the property for unrestricted use under the decommissioning requirements in part 20 of this chapter, the licensee must submit a new or revised decommissioning funding plan within one year of when the survey is completed.

(e) The financial instrument must include the licensee's name, license number, and docket number; and the name, address, and other contact information of the issuer, and, if a trust is used, the trustee. When any of the foregoing information changes, the licensee must, within 30 days, submit financial instruments reflecting such changes. Financial assurance for decommissioning must be provided by one or more of the following methods:

(1) *Prepayment*. Prepayment is the deposit before the start of operation into an account segregated from licensee assets and outside the licensee's administrative control of cash or liquid assets such that the amount of funds would be sufficient to pay decommissioning costs. Prepayment must be made into a trust account, and the trustee and the trust must be acceptable to the Commission.

(2) *A surety method, insurance, or other guarantee method*. These methods guarantee that decommissioning costs will be paid. A surety method may be in the form of a surety bond, or letter of credit. A parent company guarantee of funds for decommissioning costs based on a financial test may be used if the guarantee and test are as contained in Appendix A to part 30 of this chapter. For commercial corporations that issue bonds, a guarantee of funds by the applicant or licensee for decommissioning costs based on a financial test may be used if the guarantee and test are as contained in Appendix C to part 30 of this chapter. For commercial companies that do not issue bonds, a guarantee of funds by the applicant or licensee for decommissioning costs may be used if the guarantee and test are as contained in Appendix D to part 30 of this chapter. Except for an external sinking fund, a parent company guarantee or a guarantee by the applicant or licensee may not be used in combination with other financial methods to satisfy the requirements of this section. A guarantee by the applicant or licensee may not be used in any situation where the applicant or licensee has a parent company holding majority control of the voting stock of the company. Any surety method or insurance used to provide financial assurance for decommissioning must contain the following conditions:

(i) The surety method or insurance must be open-ended or, if written for a specified term, such as five years, must be renewed automatically unless 90 days or more prior to the renewal date, the issuer notifies the Commission, the beneficiary, and the licensee of its intention not to renew. The surety method or insurance must also provide that the full face amount be paid to the beneficiary automatically prior to the expiration without proof of forfeiture if the licensee fails to provide a replacement acceptable to the Commission withing 30 days after receipt of notification or cancellation.

(ii) The surety method or insurance must be payable to a trust established for decommissioning costs. The trustee and trust must be acceptable to the Commission. An acceptable trustee includes an appropriate State or Federal government agency or an entity which has the authority to act as a trustee and whose trust operations are regulated and examined by a Federal or State agency.

(iii) The surety or insurance must remain in effect until the Commission has terminated the license.

(3) *An external sinking fund in which deposits are made at least annually, coupled with a surety method, insurance, or other guarantee method, the value of which may decrease by the amount being accumulated in the sinking fund.* An external sinking fund is a fund established and maintained by setting aside funds periodically in an account segregated from licensee assets and outside the licensee's administrative control in which the total amount of funds would be sufficient to pay decommissioning costs at the time termination of operation is expected. An external sinking fund must be in the form of a trust. If the other guarantee method is used, no surety or insurance may be combined with the external sinking fund. The surety, insurance, or other guarantee provisions must be as stated in paragraph (e)(2) of this section.

(4) In the case of Federal, State, or local government licensees, a statement of intent containing a cost estimate for decommissioning, and indicating that funds for decommissioning will be obtained when necessary.

(5) In the case of licensees who are issued a power reactor license under part 50 of this chapter or ISFSI licensees who are an electric utility, as defined in part 50 of this chapter, with a specific license issued under this part, the methods of 10 CFR 50.75(b), (e), and (h), as applicable. In the event that funds remaining to be placed into the licensee's ISFSI decommissioning external sinking fund are no longer approved for recovery in rates by a competent rate making authority, the licensee must make changes to provide financial assurance using one or more of the methods stated in paragraphs (1) through (4) of this section.

(6) When a governmental entity is assuming ownership of a site, an arrangement that is deemed acceptable by such governmental entity.

(f) Each person licensed under this part shall keep records of information important to the decommissioning of a facility in an identified location until the site is released for unrestricted use. If records important to the decommissioning of a facility are kept for other purposes, reference to these records and their locations may be used. Information the Commission considers important to decommissioning consists of—

(1) Records of spills or other unusual occurrences involving the spread of contamination in and around the facility, equipment, or site. These records may be limited to instances when contamination remains after any cleanup procedures or when there is reasonable likelihood that contaminants may have spread to inaccessible areas as in the case of possible seepage into porous materials such as concrete. These records must include any known information on identification of involved nuclides, quantities, forms, and concentrations.

(2) As-built drawings and modifications of structures and equipment in restricted areas where radioactive materials are used and/or stored, and of locations of possible inaccessible contamination such as buried pipes which may be subject to contamination. If required drawings are referenced, each relevant document need not be indexed individually. If drawings are not available, the licensee shall substitute appropriate records of available information concerning these areas and locations.

(3) A list contained in a single document and updated no less than every 2 years of the following:

(i) All areas designated and formerly designated as restricted areas as defined under 10 CFR 20.1003; and

(ii) All areas outside of restricted areas that require documentation under § 72.30(f)(1).

(4) Records of the cost estimate performed for the decommissioning funding plan and records of the funding method used for assuring funds are available for decommissioning.

(g) In providing financial assurance under this section, each licensee must use the financial assurance funds only for decommissioning activities and each licensee must monitor the balance of funds held to account for market variations. The licensee must replenish the funds, and report such actions to the NRC, as follows:

(1) If, at the end of a calendar year, the fund balance is below the amount necessary to cover the cost of decommissioning, but is not below 75 percent of the cost, the licensee must increase

the balance to cover the cost, and must do so within 30 days after the end of the calendar year.

(2) If, at any time, the fund balance falls below 75 percent of the amount necessary to cover the cost of decommissioning, the licensee must increase the balance to cover the cost, and must do so within 30 days of the occurrence.

(3) Within 30 days of taking the actions required by paragraph (g)(1) or (g)(2) of this section, the licensee must provide a written report of such actions to the Director, Office of Nuclear Material Safety and Safeguards, and state the new balance of the fund.

[53 FR 31658, Aug. 19, 1988, as amended at 55 FR 29191, July 18, 1990; 58 FR 39635, July 26, 1993; 58 FR 67662, Dec. 22, 1993; 58 FR 68732, Dec. 29, 1993; 59 FR 1618, Jan. 12, 1994; 61 FR 24675, May 16, 1996; 62 FR 39092, July 21, 1997; 63 FR 29544, June 1, 1998; 66 FR 51840, Oct. 11, 2001; 67 FR 78351, Dec. 24, 2002; 76 FR 35573, June 17, 2011; 79 FR 75741 Dec. 19, 2014]

§ 72.32 Emergency Plan.

(a) Each application for an ISFSI that is licensed under this part which is: Not located on the site of a nuclear power reactor, or not located within the exclusion area as defined in 10 CFR part 100 of a nuclear power reactor, or located on the site of a nuclear power reactor which does not have an operating license, or located on the site of a nuclear power reactor that is not authorized to operate must be accompanied by an Emergency Plan that includes the following information:

(1) *Facility description.* A brief description of the licensee's facility and area near the site.

(2) *Types of accidents.* An identification of each type of radioactive materials accident.

(3) *Classification of accidents.* A classification system for classifying accidents as ''alerts.''

(4) *Detection of accidents.* Identification of the means of detecting an accident condition.

(5) *Mitigation of consequences.* A brief description of the means of mitigating the consequences of each type of accident, including those provided to protect workers onsite, and a description of the program for maintaining the equipment.

(6) *Assessment of releases.* A brief description of the methods and equipment to assess releases of radioactive materials.

(7) *Responsibilities.* A brief description of the responsibilities of licensee personnel should an accident occur, including identification of personnel responsible for promptly notifying offsite response organizations and the NRC; also responsibilities for developing, maintaining, and updating the plan.

(8) *Notification and coordination.* A commitment to and a brief description of the means to promptly notify offsite response organizations and request offsite assistance, including medical assistance for the treatment of contaminated injured onsite workers when appropriate. A control point must be established. The notification and coordination must be planned so that unavailability of some personnel, parts of the facility, and some equipment will not prevent the notification and coordination. The licensee shall also commit to notify the NRC operations center immediately after notifications of the appropriate offsite response organizations and not later than one hour after the licensee declares an emergency.[10]

(9) *Information to be communicated.* A brief description of the types of information on facility status; radioactive releases; and recommended protective actions, if necessary, to be given to offsite response organizations and to the NRC.

(10) *Training.* A brief description of the training the licensee will provide workers on how to respond to an emergency and any special instructions and orientation tours the licensee would offer to fire, police, medical and other emergency personnel.

(11) *Safe condition.* A brief description of the means of restoring the facility to a safe condition after an accident.

(12) *Exercises.* (i) Provisions for conducting semiannual communications checks with offsite response organizations and biennial onsite exercises to

[1] These reporting requirements do not supersede or release licensees of complying with the requirements under the Emergency Planning and Community Right-to-Know Act of 1986, Title III, Pub. L. 99–499 or other State or Federal reporting requirements.

test response to simulated emergencies. Radiological/Health Physics, Medical, and Fire drills shall be conducted annually. Semiannual communications checks with offsite response organizations must include the check and update of all necessary telephone numbers. The licensee shall invite offsite response organizations to participate in the biennial exercise.

(ii) Participation of offsite response organizations in biennial exercises, although recommended, is not required. Exercises must use scenarios not known to most exercise participants. The licensee shall critique each exercise using individuals not having direct implementation responsibility for conducting the exercise. Critiques of exercises must evaluate the appropriateness of the plan, emergency procedures, facilities, equipment, training of personnel, and overall effectiveness of the response. Deficiencies found by the critiques must be corrected.

(13) *Hazardous chemicals.* A certification that the applicant has met its responsibilities under the Emergency Planning and Community Right-to-Know Act of 1986, Title III, Pub. L. 99–499, with respect to hazardous materials at the facility.

(14) *Comments on Plan.* The licensee shall allow the offsite response organizations expected to respond in case of an accident 60 days to comment on the initial submittal of the licensee's emergency plan before submitting it to NRC. Subsequent plan changes need not have the offsite comment period unless the plan changes affect the offsite response organizations. The licensee shall provide any comments received within the 60 days to the NRC with the emergency plan.

(15) *Offsite assistance.* The applicant's emergency plans shall include a brief description of the arrangements made for requesting and effectively using offsite assistance on site and provisions that exist for using other organizations capable of augmenting the planned onsite response.

(16) Arrangements made for providing information to the public.

(b) Each application for an MRS that is licensed under this part and each application for an ISFSI that is licensed under this part and that may process and/or repackage spent fuel, must be accompanied by an Emergency Plan that includes the following information:

(1) *Facility description.* A brief description of the licensee facility and area near the site.

(2) *Types of accidents.* An identification of each type of radioactive materials accident.

(3) *Classification of accidents.* A classification system for classifying accidents as ''alerts'' or ''site area emergencies.''

(4) *Detection of accidents.* Identification of the means of detecting an accident condition.

(5) *Mitigation of consequences.* A brief description of the means of mitigating the consequences of each type of accident, including those provided to protect workers on site, and a description of the program for maintaining the equipment.

(6) *Assessment of releases.* A brief description of the methods and equipment to assess releases of radioactive materials.

(7) *Responsibilities.* A brief description of the responsibilities of licensee personnel should an accident occur, including identification of personnel responsible for promptly notifying offsite response organizations and the NRC; also responsibilities for developing, maintaining, and updating the plan.

(8) *Notification and coordination.* A commitment to and a brief description of the means to promptly notify offsite response organizations and request offsite assistance, including medical assistance for the treatment of contaminated injured onsite workers when appropriate. A control point must be established. The notification and coordination must be planned so that unavailability of some personnel, parts of the facility, and some equipment will not prevent the notification and coordination. The licensee shall also commit to notify the NRC operations center immediately after notifications of the appropriate offsite response organizations and not later than one

hour after the licensee declares an emergency.[11]

(9) *Information to be communicated.* A brief description of the types of information on facility status; radioactive releases; and recommended protective actions, if necessary, to be given to offsite response organizations and to the NRC.

(10) *Training.* A brief description of the training the licensee will provide workers on how to respond to an emergency and any special instructions and orientation tours the licensee would offer to fire, police, medical and other emergency personnel.

(11) *Safe condition.* A brief description of the means of restoring the facility to a safe condition after an accident.

(12) *Exercises.* (i) Provisions for conducting quarterly communications checks with offsite response organizations and biennial onsite exercises to test response to simulated emergencies. Radiological/Health Physics, Medical, and Fire Drills shall be held semiannually. Quarterly communications checks with offsite response organizations must include the check and update of all necessary telephone numbers. The licensee shall invite offsite response organizations to participate in the biennial exercises.

(ii) Participation of offsite response organizations in the biennial exercises, although recommended, is not required. Exercises must use scenarios not known to most exercise participants. The licensee shall critique each exercise using individuals not having direct implementation responsibility for conducting the exercise. Critiques of exercises must evaluate the appropriateness of the plan, emergency procedures, facilities, equipment, training of personnel, and overall effectiveness of the response. Deficiencies found by the critiques must be corrected.

(13) *Hazardous chemicals.* A certification that the applicant has met its responsibilities under the Emergency Planning and Community Right-to-Know Act of 1986, Title III, Pub. L. 99–499, with respect to hazardous materials at the facility.

(14) *Comments on Plan.* The licensee shall allow the offsite response organizations expected to respond in case of an accident 60 days to comment on the initial submittal of the licensee's emergency plan before submitting it to NRC. Subsequent plan changes need not have the offsite comment period unless the plan changes affect the offsite response organizations. The licensee shall provide any comments received within the 60 days to the NRC with the emergency plan.

(15) *Offsite assistance.* The applicant's emergency plans shall include the following:

(i) A brief description of the arrangements made for requesting and effectively using offsite assistance on site and provisions that exist for using other organizations capable of augmenting the planned onsite response.

(ii) Provisions that exist for prompt communications among principal response organizations to offsite emergency personnel who would be responding onsite.

(iii) Adequate emergency facilities and equipment to support the emergency response onsite are provided and maintained.

(iv) Adequate methods, systems, and equipment for assessing and monitoring actual or potential consequences of a radiological emergency condition are available.

(v) Arrangements are made for medical services for contaminated and injured onsite individuals.

(vi) Radiological Emergency Response Training has been made available to those offsite who may be called to assist in an emergency onsite.

(16) Arrangements made for providing information to the public.

(c) For an ISFSI that is:

(1) located on the site, or

(2) located within the exclusion area as defined in 10 CFR part 100, of a nuclear power reactor licensed for operation by the Commission, the emergency plan required by 10 CFR 50.47 shall be deemed to satisfy the requirements of this section.

(d) A licensee with a license issued under this part may take reasonable

[2]These reporting requirements do not supersede or release licensees of complying with the requirements under the Emergency Planning and Community Right-to-Know Act of 1986, Title III, Pub. L. 99–499 or other State or Federal reporting requirements.

action that departs from a license condition or a technical specification (contained in a license issued under this part) in an emergency when this action is immediately needed to protect the public health and safety and no action consistent with license conditions and technical specifications that can provide adequate or equivalent protection is immediately apparent.

[60 FR 32441, June 22, 1995, as amended at 85 FR 65663, Oct. 16, 2020]

§ 72.34 Environmental report.

Each application for an ISFSI or MRS license under this part must be accompanied by an Environmental Report which meets the requirements of subpart A of part 51 of this chapter.

Subpart C—Issuance and Conditions of License

§ 72.40 Issuance of license.

(a) Except as provided in paragraph (c) of this section, the Commission will issue a license under this part upon a determination that the application for a license meets the standards and requirements of the Act and the regulations of the Commission, and upon finding that:

(1) The applicant's proposed ISFSI or MRS design complies with subpart F;

(2) The proposed site complies with the criteria in subpart E;

(3) If on the site of a nuclear power plant or other licensed activity or facility, the proposed ISFSI would not pose an undue risk to the safe operation of such nuclear power plant or other licensed activity or facility;

(4) The applicant is qualified by reason of training and experience to conduct the operation covered by the regulations in this part;

(5) The applicant's proposed operating procedures to protect health and to minimize danger to life or property are adequate;

(6) Except for DOE, the applicant for an ISFSI or MRS is financially qualified to engage in the proposed activities in accordance with the regulations in this part;

(7) The applicant's quality assurance plan complies with subpart G;

(8) The applicant's physical protection provisions comply with subpart H. DOE has complied with the safeguards and physical security provisions identified in § 72.24(o);

(9) The applicant's personnel training program complies with subpart I;

(10) Except for DOE, the applicant's decommissioning plan and its financing pursuant to § 72.30 provide reasonable assurance that the decontamination and decommissioning of the ISFSI or MRS at the end of its useful life will provide adequate protection to the health and safety of the public;

(11) The applicant's emergency plan complies with § 72.32;

(12) The applicable provisions of part 170 of this chapter have been satisfied;

(13) There is reasonable assurance that: (i) The activities authorized by the license can be conducted without endangering the health and safety of the public and (ii) these activities will be conducted in compliance with the applicable regulations of this chapter; and

(14) The issuance of the license will not be inimical to the common defense and security.

(b) A license to store spent fuel and reactor-related GTCC waste in the proposed ISFSI or to store spent fuel, high-level radioactive waste, and reactor-related GTCC waste in the proposed MRS may be denied if construction on the proposed facility begins before a finding approving issuance of the proposed license with any appropriate conditions to protect environmental values. Grounds for denial may be the commencement of construction prior to a finding by the Director, Office of Nuclear Materials Safety and Safeguards or designee or a finding after a public hearing by the presiding officer, Atomic Safety and Licensing Board, or the Commission acting as a collegial body, as appropriate, that the action called for is the issuance of the proposed license with any appropriate conditions to protect environmental values. This finding is to be made on the basis of information filed and evaluations made pursuant to subpart A of part 51 of this chapter or in the case of an MRS on the basis of evaluations made pursuant to sections 141(c) and (d) or 148(a) and (c) of NWPA (96 Stat.

2242, 2243, 42 U.S.C. 10161(c), (d); 101 Stat. 1330–235, 1330–236, 42 U.S.C. 10168(a), (c)), as appropriate, and after weighing the environmental, economic, technical and other benefits against environmental costs and considering available alternatives.

(c) For facilities that have been covered under previous licensing actions including the issuance of a construction permit under part 50 of this chapter, a reevaluation of the site is not required except where new information is discovered which could alter the original site evaluation findings. In this case, the site evaluation factors involved will be reevaluated.

[53 FR 31658, Aug. 19, 1988, as amended at 66 FR 51840, Oct. 11, 2001]

§ 72.42 Duration of license; renewal.

(a) Each license issued under this part must be for a fixed period of time to be specified in the license. The license term for an ISFSI must not exceed 40 years from the date of issuance. The license term for an MRS must not exceed 40 years from the date of issuance. Licenses for either type of installation may be renewed by the Commission at the expiration of the license term upon application by the licensee for a period not to exceed 40 years and under the requirements of this rule. Application for ISFSI license renewals must include the following:

(1) TLAAs that demonstrate that structures, systems, and components important to safety will continue to perform their intended function for the requested period of extended operation; and

(2) A description of the AMP for management of issues associated with aging that could adversely affect structures, systems, and components important to safety.

(b) Applications for renewal of a license should be filed in accordance with the applicable provisions of subpart B of this part at least 2 years before the expiration of the existing license. The application must also include design bases information as documented in the most recently updated FSAR as required by § 72.70. Information contained in previous applications, statements, or reports filed with the Commission under the license may be incorporated by reference provided that these references are clear and specific.

(c) In any case in which a licensee, not less than two years prior to expiration of its existing license, has filed an application in proper form for renewal of a license, the existing license shall not expire until a final decision concerning the application for renewal has been made by the Commission.

[53 FR 31658, Aug. 19, 1988, as amended at 76 FR 8890, Feb. 16, 2011]

§ 72.44 License conditions.

(a) Each license issued under this part shall include license conditions. The license conditions may be derived from the analyses and evaluations included in the Safety Analysis Report and amendments thereto submitted pursuant to § 72.24. License conditions pertain to design, construction and operation. The Commission may also include additional license conditions as it finds appropriate.

(b) Each license issued under this part shall be subject to the following conditions, even if they are not explicitly stated therein;

(1) Neither the license nor any right thereunder shall be transferred, assigned, or disposed of in any manner, either voluntarily or involuntarily, directly or indirectly, through transfer of control of the license to any person, unless the Commission shall, after securing full information, find that the transfer is in accordance with the provisions of the Atomic Energy Act of 1954, as amended, and give its consent in writing.

(2) The license shall be subject to revocation, suspension, modification, or amendment in accordance with the procedures provided by the Atomic Energy Act of 1954, as amended, and Commission regulations.

(3) Upon request of the Commission, the licensee shall, at any time before expiration of the license, submit written statements, signed under oath or affirmation if appropriate, to enable the Commission to determine whether or not the license should be modified, suspended, or revoked.

(4) The licensee shall have an NRC-approved program in effect that covers

the training and certification of personnel that meets the requirements of subpart I before the licensee may receive spent fuel and/or reactor-related GTCC waste for storage at an ISFSI or the receipt of spent fuel, high-level radioactive waste, and/or reactor-related GTCC waste for storage at an MRS.

(5) The license shall permit the operation of the equipment and controls that are important to safety of the ISFSI or the MRS only by personnel whom the licensee has certified as being adequately trained to perform such operations, or by uncertified personnel who are under the direct visual supervision of a certified individual.

(6)(i) Each licensee shall notify the appropriate NRC Regional Administrator, in writing, immediately following the filing of a voluntary or involuntary petition for bankruptcy under any Chapter of Title II (Bankruptcy) of the United States Code by or against:

(A) The licensee;

(B) An entity (as that term is defined in 11 U.S.C. 101(14)) controlling the licensee or listing the license or licensee as property of the estate; or

(C) An affiliate (as that term is defined in 11 U.S.C. 101(2)) of the licensee.

(ii) This notification must indicate:

(A) The bankruptcy court in which the petition for bankruptcy was filed; and

(B) The date of the filing of the petition.

(c) Each license issued under this part must include technical specifications. Technical specifications must include requirements in the following categories:

(1) *Functional and operating limits and monitoring instruments and limiting control settings.* (i) Functional and operating limits for an ISFSI or MRS are limits on fuel or waste handling and storage conditions that are found to be necessary to protect the integrity of the stored fuel or waste container, to protect employees against occupational exposures and to guard against the uncontrolled release of radioactive materials; and

(ii) Monitoring instruments and limiting control settings for an ISFSI or MRS are those related to fuel or waste handling and storage conditions having significant safety functions.

(2) *Limiting conditions.* Limiting conditions are the lowest functional capability or performance levels of equipment required for safe operation.

(3) *Surveillance requirements.* Surveillance requirements include:

(i) Inspection and monitoring of spent fuel, high-level radioactive waste, or reactor-related GTCC waste in storage;

(ii) Inspection, test and calibration activities to ensure that the necessary integrity of required systems and components is maintained;

(iii) Confirmation that operation of the ISFSI or MRS is within the required functional and operating limits; and

(iv) Confirmation that the limiting conditions required for safe storage are met.

(4) *Design features.* Design features include items that would have a significant effect on safety if altered or modified, such as materials of construction and geometric arrangements.

(5) *Administrative controls.* Administrative controls include the organization and management procedures, recordkeeping, review and audit, and reporting requirements necessary to assure that the operations involved in the storage of spent fuel and reactor-related GTCC waste in an ISFSI and the storage of spent fuel, high-level radioactive waste, and reactor-related GTCC waste in an MRS are performed in a safe manner.

(d) Each license authorizing the receipt, handling, and storage of spent fuel, high-level radioactive waste, and/or reactor-related GTCC waste under this part must include technical specifications that, in addition to stating the limits on the release of radioactive materials for compliance with limits of part 20 of this chapter and the ''as low as is reasonably achievable'' objectives for effluents, require that:

(1) Operating procedures for control of effluents be established and followed, and equipment in the radioactive waste treatment systems be maintained and used, to meet the requirements of § 72.104;

(2) An environmental monitoring program be established to ensure compliance with the technical specifications for effluents; and

(3) An annual report be submitted to the Commission in accordance with § 72.4, specifying the quantity of each of the principal radionuclides released to the environment in liquid and in gaseous effluents during the previous 12 months of operation and such other information as may be required by the Commission to estimate maximum potential radiation dose commitment to the public resulting from effluent releases. On the basis of this report and any additional information that the Commission may obtain from the licensee or others, the Commission may from time to time require the licensee to take such action as the Commission deems appropriate. The report must be submitted within 60 days after the end of the 12-month monitoring period.

(e) The licensee shall make no change that would decrease the effectiveness of the physical security plan prepared pursuant to § 72.180 without the prior approval of the Commission. A licensee desiring to make such a change shall submit an application for an amendment to the license pursuant to § 72.56. A licensee may make changes to the physical security plan without prior Commission approval, provided that such changes do not decrease the effectiveness of the plan. The licensee shall furnish to the Commission a report containing a description of each change within two months after the change is made, and shall maintain records of changes to the plan made without prior Commission approval for a period of 3 years from the date of the change.

(f) A licensee shall follow and maintain in effect an emergency plan that is approved by the Commission. The licensee may make changes to the approved plan without Commission approval only if such changes do not decrease the effectiveness of the plan. Within six months after any change is made, the licensee shall submit, in accordance with § 72.4, a report containing a description of any changes made in the plan addressed to Director, Division of Fuel Management, Office of Nuclear Material Safety and Safeguards, U.S. Nuclear Regulatory Commission, with a copy to the appropriate NRC Regional Office shown in appendix D to part 20 of this chapter. Proposed changes that decrease the effectiveness of the approved emergency plan must not be implemented unless the licensee has received prior approval of such changes from the Commission.

(g) A license issued to DOE under this part for an MRS authorized by section 142(b) of NWPA (101 Stat. 1330–232, 42 U.S.C. 10162(b)) must include the following conditions:

(1) Construction of the MRS may not begin until the Commission has authorized the construction of a repository under section 114(d) of NWPA (96 Stat. 2215, as amended by 101 Stat. 1330–230, 42 U.S.C. 10134 (d)) and part 60 or 63 of this chapter;

(2) Construction of the MRS or acceptance of spent nuclear fuel, high-level radioactive waste, and/or reactor-related GTCC waste at the MRS is prohibited during such time as the repository license is revoked by the Commission or construction of the repository ceases.

(3) The quantity of spent nuclear fuel or high-level radioactive waste at the site of the MRS at any one time may not exceed 10,000 metric tons of heavy metal until a repository authorized under NWPA and part 60 or 63 of this chapter first accepts spent nuclear fuel or solidified high-level radioactive waste; and

(4) The quantity of spent nuclear fuel or high-level radioactive waste at the site of the MRS at any one time may not exceed 15,000 metric tons of heavy metal.

(h) Each licensee shall protect Safeguards Information against unauthorized disclosure in accordance with the requirements of § 73.21 and the requirements of § 73.22 or § 73.23, as applicable.

[53 FR 31658, Aug. 19, 1988, as amended at 64 FR 33183, June 22, 1999; 66 FR 51840, Oct. 11, 2001; 66 FR 55815, Nov. 2, 2001; 67 FR 3586, Jan. 25, 2002; 68 FR 58819, Oct. 10, 2003; 73 FR 63573, Oct. 24, 2008; 75 FR 73945, Nov. 30, 2010; 79 FR 75741, Dec. 19, 2014; 84 FR 65646, Nov. 29, 2019]

§ 72.46 Public hearings.

(a) In connection with each application for a license under this part, the Commission shall issue or cause to be

issued a notice of proposed action and opportunity for hearing in accordance with § 2.105 or § 2.1107 of this chapter, as appropriate, or, if the Commission finds that a hearing is required in the public interest, a notice of hearing in accordance with § 2.104 of this chapter.

(b)(1) In connection with each application for an amendment to a license under this part, the Commission shall, except as provided in paragraph (b)(2) of this section, issue or cause to be issued a notice of proposed action and opportunity for hearing in accordance with § 2.105 or § 2.1107 of this chapter, as appropriate, or, if the Commission finds that a hearing is required in the public interest, a notice of hearing in accordance with § 2.104 of this chapter.

(2) The Director, Office of Nuclear Material Safety and Safeguards, or the Director's designee may dispense with a notice of proposed action and opportunity for hearing or a notice of hearing and take immediate action on an amendment to a license issued under this part upon a determination that the amendment does not present a genuine issue as to whether the health and safety of the public will be significantly affected. After taking the action, the Director or the Director's designee shall promptly publish a notice in the FEDERAL REGISTER of the action taken and of the right of interested persons to request a hearing on whether the action should be rescinded or modified. If the action taken amends an MRS license, the Director or the Director's designee shall also inform the appropriate State and local officials.

(c) The notice of proposed action and opportunity for hearing or the notice of hearing may be included in the notice of docketing required to be published by § 72.16 of this part.

(d) If no request for a hearing or petition for leave to intervene is filed within the time prescribed in the notice of proposed action and opportunity for hearing, the Director, Office of Nuclear Material Safety and Safeguards or the Director's designee may take the proposed action, and thereafter shall promptly inform the appropriate State and local officials and publish a notice in the FEDERAL REGISTER of the action taken. In accordance with § 2.764(c) of this chapter, the Director, Office of Nuclear Material Safety and Safeguards shall not issue an initial license for the construction and operation of an ISFSI located at a site other than a reactor site or an MRS until expressly authorized to do so by the Commission.

(e) If an application for (or an amendment to) a specific license issued under this part incorporates by reference information on the design of a spent fuel storage cask for which NRC approval pursuant to subpart L of this part has been issued or is being sought, the scope of any public hearing held to consider the application will not include any cask design issues.

[53 FR 31658, Aug. 19, 1988, as amended at 60 FR 20886, Apr. 28, 1995; 65 FR 50617, Aug. 21, 2000]

§ 72.48 Changes, tests, and experiments.

(a) Definitions for the purposes of this section:

(1) *Change* means a modification or addition to, or removal from, the facility or spent fuel storage cask design or procedures that affects a design function, method of performing or controlling the function, or an evaluation that demonstrates that intended functions will be accomplished.

(2) *Departure from a method of evaluation described in the FSAR (as updated) used in establishing the design bases or in the safety analyses* means:

(i) Changing any of the elements of the method described in the FSAR (as updated) unless the results of the analysis are conservative or essentially the same; or

(ii) Changing from a method described in the FSAR to another method unless that method has been approved by NRC for the intended application.

(3) *Facility* means either an independent spent fuel storage installation (ISFSI) or a Monitored Retrievable Storage facility (MRS).

(4) The *facility or spent fuel storage cask design as described in the Final Safety Analysis Report (FSAR) (as updated)* means:

(i) The structures, systems, and components (SSC) that are described in the FSAR (as updated),

(ii) The design and performance requirements for such SSCs described in the FSAR (as updated), and

(iii) The evaluations or methods of evaluation included in the FSAR (as updated) for such SSCs which demonstrate that their intended function(s) will be accomplished.

(5) *Final Safety Analysis Report (as updated)* means:

(i) For specific licensees, the Safety Analysis Report for a facility submitted and updated in accordance with § 72.70;

(ii) For general licensees, the Safety Analysis Report for a spent fuel storage cask design, as amended and supplemented; and

(iii) For certificate holders, the Safety Analysis Report for a spent fuel storage cask design submitted and updated in accordance with § 72.248.

(6) *Procedures as described in the Final Safety Analysis Report (as updated)* means those procedures that contain information described in the FSAR (as updated) such as how SSCs are operated and controlled (including assumed operator actions and response times).

(7) *Tests or experiments not described in the Final Safety Analysis Report (as updated)* means any activity where any SSC is utilized or controlled in a manner which is either:

(i) Outside the reference bounds of the design bases as described in the FSAR (as updated) or

(ii) Inconsistent with the analyses or descriptions in the FSAR (as updated).

(b) This section applies to:

(1) Each holder of a general or specific license issued under this part, and

(2) Each holder of a Certificate of Compliance (CoC) issued under this part.

(c)(1) A licensee or certificate holder may make changes in the facility or spent fuel storage cask design as described in the FSAR (as updated), make changes in the procedures as described in the FSAR (as updated), and conduct tests or experiments not described in the FSAR (as updated), without obtaining either:

(i) A license amendment pursuant to § 72.56 (for specific licensees) or

(ii) A CoC amendment submitted by the certificate holder pursuant to § 72.244 (for general licensees and certificate holders) if:

(A) A change to the technical specifications incorporated in the specific license is not required; or

(B) A change in the terms, conditions, or specifications incorporated in the CoC is not required; and

(C) The change, test, or experiment does not meet any of the criteria in paragraph (c)(2) of this section.

(2) A specific licensee shall obtain a license amendment pursuant to § 72.56, a certificate holder shall obtain a CoC amendment pursuant to § 72.244, and a general licensee shall request that the certificate holder obtain a CoC amendment pursuant to § 72.244, prior to implementing a proposed change, test, or experiment if the change, test, or experiment would:

(i) Result in more than a minimal increase in the frequency of occurrence of an accident previously evaluated in the FSAR (as updated);

(ii) Result in more than a minimal increase in the likelihood of occurrence of a malfunction of a system, structure, or component (SSC) important to safety previously evaluated in the FSAR (as updated);

(iii) Result in more than a minimal increase in the consequences of an accident previously evaluated in the FSAR (as updated);

(iv) Result in more than a minimal increase in the consequences of a malfunction of an SSC important to safety previously evaluated in the FSAR (as updated);

(v) Create a possibility for an accident of a different type than any previously evaluated in the FSAR (as updated);

(vi) Create a possibility for a malfunction of an SSC important to safety with a different result than any previously evaluated in the FSAR (as updated);

(vii) Result in a design basis limit for a fission product barrier as described in the FSAR (as updated) being exceeded or altered; or

(viii) Result in a departure from a method of evaluation described in the FSAR (as updated) used in establishing the design bases or in the safety analyses.

(3) In implementing this paragraph, the FSAR (as updated) is considered to include FSAR changes resulting from

evaluations performed pursuant to this section and analyses performed pursuant to § 72.56 or § 72.244 since the last update of the FSAR pursuant to § 72.70, or § 72.248 of this part.

(4) The provisions in this section do not apply to changes to the facility or procedures when the applicable regulations establish more specific criteria for accomplishing such changes.

(d)(1) The licensee and certificate holder shall maintain records of changes in the facility or spent fuel storage cask design, of changes in procedures, and of tests and experiments made pursuant to paragraph (c) of this section. These records must include a written evaluation which provides the bases for the determination that the change, test, or experiment does not require a license or CoC amendment pursuant to paragraph (c)(2) of this section.

(2) The licensee and certificate holder shall submit, as specified in § 72.4, a report containing a brief description of any changes, tests, and experiments, including a summary of the evaluation of each. A report shall be submitted at intervals not to exceed 24 months.

(3) The records of changes in the facility or spent fuel storage cask design shall be maintained until:

(i) Spent fuel is no longer stored in the facility or the spent fuel storage cask design is no longer being used, or

(ii) The Commission terminates the license or CoC issued pursuant to this part.

(4) The records of changes in procedures and of tests and experiments shall be maintained for a period of 5 years.

(5) The holder of a spent fuel storage cask design CoC, who permanently ceases operation, shall provide the records of changes to the new certificate holder or to the Commission, as appropriate, in accordance with § 72.234(d)(3).

(6)(i) A general licensee shall provide a copy of the record for any changes to a spent fuel storage cask design to the applicable certificate holder within 60 days of implementing the change.

(ii) A specific licensee using a spent fuel storage cask design, approved pursuant to subpart L of this part, shall provide a copy of the record for any changes to a spent fuel storage cask design to the applicable certificate holder within 60 days of implementing the change.

(iii) A certificate holder shall provide a copy of the record for any changes to a spent fuel storage cask design to any general or specific licensee using the cask design within 60 days of implementing the change.

[64 FR 53615, Oct. 4, 1999, as amended at 66 FR 11527, Feb. 26, 2001]

§ 72.50 Transfer of license.

(a) No license or any part included in a license issued under this part for an ISFSI or MRS shall be transferred, assigned, or in any manner disposed of, either voluntarily or involuntarily, directly or indirectly, through transfer of control of the license to any person, unless the Commission gives its consent in writing.

(b)(1) An application for transfer of a license must include as much of the information described in §§ 72.22 and 72.28 with respect to the identity and the technical and financial qualifications of the proposed transferee as would be required by those sections if the application were for an initial license. The application must also include a statement of the purposes for which the transfer of the license is requested and the nature of the transaction necessitating or making desirable the transfer of the license.

(2) The Commission may require any person who submits an application for the transfer of a license pursuant to the provisions of this section to file a written consent from the existing licensee, or a certified copy of an order or judgment of a court of competent jurisdiction, attesting to the person's right—subject to the licensing requirements of the Act and these regulations—to possession of the radioactive materials and the storage installation involved.

(3) The application shall describe the financial assurance that will be provided for the decommissioning of the facility under § 72.30.

(c) After appropriate notice to interested persons, including the existing licensee, and observance of such procedures as may be required by the Act or

regulations or orders of the Commission, the Commission will approve an application for the transfer of a license, if the Commission determines that:

(1) The proposed transferee is qualified to be the holder of the license; and

(2) Transfer of the license is consistent with applicable provisions of the law, and the regulations and orders issued by the Commission.

[53 FR 31658, Aug. 19, 1988, as amended at 76 FR 35574, June 17, 2011]

§ 72.52 Creditor regulations.

(a) This section does not apply to an ISFSI or MRS constructed and operated by DOE.

(b) Pursuant to section 184 of the Act, the Commission consents, without individual application, to the creation of any mortgage, pledge, or other lien on special nuclear material contained in spent fuel not owned by the United States that is the subject of a license or on any interest in special nuclear material in spent fuel; Provided:

(1) That the rights of any creditor so secured may be exercised only in compliance with and subject to the same requirements and restrictions as would apply to the licensee pursuant to the provisions of the license, the Atomic Energy Act of 1954, as amended, and regulations issued by the Commission pursuant to said Act; and

(2) That no creditor so secured may take possession of the spent fuel and/or reactor-related GTCC waste under the provisions of this section before—

(i) The Commission issues a license authorizing possession; or

(ii) The license is transferred.

(c) Any creditor so secured may apply for transfer of the license covering spent fuel and/or reactor-related GTCC waste by filing an application for transfer of the license under § 72.50(b). The Commission will act upon the application under § 72.50(c).

(d) Nothing contained in this regulation shall be deemed to affect the means of acquiring, or the priority of, any tax lien or other lien provided by law.

(e) As used in this section, ''creditor'' includes, without implied limitation—

(1) The trustee under any mortgage, pledge, or lien on spent fuel and/or reactor-related GTCC waste in storage made to secure any creditor;

(2) Any trustee or receiver of spent fuel and/or reactor-related GTCC waste appointed by a court of competent jurisdiction in any action brought for the benefit of any creditor secured by a mortgage, pledge, or lien;

(3) Any purchaser of the spent fuel and/or reactor-related GTCC waste at the sale thereof upon foreclosure of the mortgage, pledge, or lien or upon exercise of any power of sale contained therein; or

(4) Any assignee of any such purchaser.

[53 FR 31658, Aug. 19, 1988, as amended at 66 FR 51840, Oct. 11, 2001]

§ 72.54 Expiration and termination of licenses and decommissioning of sites and separate buildings or outdoor areas.

(a) Each specific license expires at the end of the day on the expiration date stated in the license except when a licensee has filed an application for renewal pursuant to § 72.42 not less than 24 months before the expiration of the existing license. If an application for renewal has been filed at least 24 months prior to the expiration date stated in the existing license, the existing license expires at the end of the day on which the Commission makes a final determination to deny the renewal application or, if the determination states an expiration date, the expiration date stated in the determination.

(b) Each specific license revoked by the Commission expires at the end of the day on the date of the Commission's final determination to revoke the license or on the expiration date stated in the determination or as otherwise provided by Commission Order.

(c) Each specific license continues in effect, beyond the expiration date if necessary, with respect to possession of licensed material until the Commission notifies the licensee in writing that the license is terminated. During this time, the licensee shall—

(1) Limit actions involving spent fuel, reactor-related GTCC waste, or other licensed material to those related to decommissioning; and

(2) Continue to control entry to restricted areas until they are suitable for release in accordance with NRC requirements.

(d) As required by § 72.42(b), or within 60 days of the occurrence of any of the following, consistent with the administrative directions in § 72.4, each licensee shall notify the NRC in writing, and submit within 12 months of this notification, a final decommissioning plan and begin decommissioning upon approval of the plan if—

(1) The licensee has decided to permanently cease principal activities, as defined in this part, at the entire site or any separate building or outdoor area that contains residual radioactivity such that the building or outdoor area is unsuitable for release in accordance with NRC requirements; or

(2) No principal activities under the license have been conducted for a period of 24 months; or

(3) No principal activities have been conducted for a period of 24 months in any separate building or outdoor area that contains residual radioactivity such that the building or outdoor area is unsuitable for release in accordance with NRC requirements.

(e) Coincident with the notification required by paragraph (d) of this section, the licensee shall maintain in effect all decommissioning financial assurances established by the licensee pursuant to § 72.30 in conjunction with a license issuance or renewal or as required by this section. The amount of the financial assurance must be increased, or may be decreased, as appropriate, to cover the detailed cost estimate for decommissioning established pursuant to paragraph (g)(5) of this section.

(1) Any licensee who has not provided financial assurance to cover the detailed cost estimate submitted with the decommissioning plan shall do so when this rule becomes effective November 24, 1995.

(2) Following approval of the decommissioning plan, a licensee may reduce the amount of the financial assurance as decommissioning proceeds and radiological contamination is reduced at the site with the approval of the Commission.

(f)(1) The Commission may grant a request to delay or postpone initiation of the decommissioning process if the Commission determines that this relief is not detrimental to the public health and safety and is otherwise in the public interest. The request must be submitted no later than 30 days before notification pursuant to paragraph (d) of this section. The schedule for decommissioning set forth in paragraph (d) of this section may not commence until the Commission has made a determination on the request.

(2) The Commission may approve an alternate schedule for submittal of the final decommissioning plan required pursuant to paragraph (d) of this section if the Commission determines that the alternate schedule is necessary to the effective conduct of decommissioning operations and presents no undue risk from radiation to the public health and safety, and is otherwise to the public interest.

(g) The proposed final decommissioning plan must include—

(1) A description of the current conditions of the site or separate building or outdoor area sufficient to evaluate the acceptability of the plan;

(2) The choice of the alternative for decommissioning with a description of the activities involved;

(3) A description of controls and limits on procedures and equipment to protect occupational and public health and safety;

(4) A description of the planned final radiation survey; and

(5) An updated detailed cost estimate for the chosen alternative for decommissioning, comparison of that estimate with present funds set aside for decommissioning, and plan for assuring the availability of adequate funds for completion of decommissioning including means for adjusting cost estimates and associated funding levels over any storage or surveillance period; and

(6) A description of technical specifications and quality assurance provisions in place during decommissioning.

(h) For final decommissioning plans in which the major dismantlement activities are delayed by first placing the ISFSI or MRS in storage, planning for these delayed activities may be less detailed. Updated detailed plans must be

submitted and approved prior to the start of these activities.

(i) If the final decommissioning plan demonstrates that the decommissioning will be completed as soon as practicable, performed in accordance with the regulations in this chapter, and will not be inimical to the common defense and security or to the health and safety of the public, and after notice to interested persons, the Commission will approve the plan subject to any appropriate conditions and limitations and issue an order authorizing decommissioning.

(j)(1) Except as provided in paragraph (k) of this section, each licensee shall complete decommissioning of the site or separate building or outdoor area as soon as practicable but no later than 24 months following approval of the final decommissioning plan by the Commission.

(2) Except as provided in paragraph (k) of this section, when decommissioning involves the entire site, each licensee shall request license termination as soon as practicable but no later than 24 months following approval of the final decommissioning plan by the Commission.

(k) The Commission may approve a request for an alternate schedule for completion of decommissioning of the site or separate building or outdoor area, and license termination if appropriate, if the Commission determines that the alternate schedule is warranted by consideration of the following:

(1) Whether it is technically feasible to complete decommissioning within the allotted 24-month period;

(2) Whether sufficient waste disposal capacity is available to allow completion of decommissioning within the allotted 24-month period;

(3) Whether a significant volume reduction in wastes requiring disposal will be achieved by allowing short-lived radionuclides to decay;

(4) Whether a significant reduction in radiation exposure to workers can be achieved by allowing short-lived radionuclides to decay; and

(5) Other site-specific factors that the Commission may consider appropriate on a case-by-case basis, such as regulatory requirements of other government agencies, lawsuits, groundwater treatment activities, monitored natural groundwater restoration, actions that could result in more environmental harm than deferred cleanup, and other factors beyond the control of the licensee.

(l) As the final step in decommissioning, the licensee shall—

(1) Certify the disposition of all licensed material, including accumulated wastes, by submitting a completed NRC Form 314 or equivalent information; and

(2) Conduct a radiation survey of the premises where the licensed activities were conducted and submit a report of the results of this survey, unless the licensee demonstrates in some other manner that the premises are suitable for release in accordance with the criteria for decommissioning in 10 CFR part 20, subpart E. The licensee shall, as appropriate—

(i) Report levels of gamma radiation in units of millisieverts (microroentgen) per hour at one meter from surfaces, and report levels of radioactivity, including alpha and beta, in units of megabecquerels (disintegrations per minute or microcuries) per 100 square centimeters removable and fixed for surfaces, megabecquerels (microcuries) per milliliter for water, and becquerels (picocuries) per gram for solids such as soils or concrete; and

(ii) Specify the survey instrument(s) used and certify that each instrument is properly calibrated and tested.

(m) Specific licenses, including expired licenses, will be terminated by written notice to the licensee when the Commission determines that—

(1) The decommissioning has been performed in accordance with the approved final decommissioning plan and the order authorizing decommissioning; and

(2)(i) A radiation survey has been performed which demonstrates that the premises are suitable for release in accordance with the criteria for decommissioning in 10 CFR part 20, subpart E; or

(ii) Other information submitted by the licensee is sufficient to demonstrate that the premises are suitable

for release in accordance with the criteria for decommissioning in 10 CFR part 20, subpart E.

(3) Records required by § 72.80(e) have been received.

[59 FR 36038, July 15, 1994, as amended at 60 FR 38240, July 26, 1995; 61 FR 24675, May 16, 1996; 61 FR 29638, June 12, 1996; 62 FR 39092, July 21, 1997; 62 FR 59276, Nov. 3, 1997; 66 FR 51840, Oct. 11, 2001]

§ 72.56 Application for amendment of license.

Whenever a holder of a specific license desires to amend the license (including a change to the license conditions), an application for an amendment shall be filed with the Commission fully describing the changes desired and the reasons for such changes, and following as far as applicable the form prescribed for original applications.

[64 FR 53616, Oct. 4, 1999]

§ 72.58 Issuance of amendment.

In determining whether an amendment to a license will be issued to the applicant, the Commission will be guided by the considerations that govern the issuance of initial licenses.

§ 72.60 Modification, revocation, and suspension of license.

(a) The terms and conditions of all licenses are subject to amendment, revision, or modification by reason of amendments to the Atomic Energy Act of 1954, as amended, or by reason or rules, regulations, or orders issued in accordance with the Act or any amendments thereto.

(b) Any license may be modified, revoked, or suspended in whole or in part for any of the following:

(1) Any material false statement in the application or in any statement of fact required under section 182 of the Act;

(2) Conditions revealed by the application or statement of fact or any report, record, inspection or other means which would warrant the Commission to refuse to grant a license on an original application;

(3) Failure to operate an ISFSI or MRS in accordance with the terms of the license;

(4) Violation of, or failure to observe, any of the terms and conditions of the Act, or of any applicable regulation, license, or order of the Commission.

(c) Upon revocation of a license, the Commission may immediately cause the retaking of possession of all special nuclear material contained in spent fuel and/or reactor-related GTCC waste held by the licensee. In cases found by the Commission to be of extreme importance to the national defense and security or to the health and safety of the public, the Commission may cause the taking of possession of any special nuclear material contained in spent fuel and/or reactor-related GTCC waste held by the licensee before following any of the procedures provided under sections 551–558 of title 5 of the United States Code.

[53 FR 31658, Aug. 19, 1988, as amended at 66 FR 51841, Oct. 11, 2001]

§ 72.62 Backfitting.

(a) As used in this section, *backfitting* means the addition, elimination, or modification, after the license has been issued, of:

(1) Structures, systems, or components of an ISFSI or MRS, or

(2) Procedures or organization required to operate an ISFSI or MRS.

(b) The Commission will require backfitting of an ISFSI or MRS if it finds that such action is necessary to assure adequate protection to occupational or public health and safety, or to bring the ISFSI or MRS into compliance with a license or the rules or orders of the Commission, or into conformance with written commitments by a licensee.

(c) The Commission may require the backfitting of an ISFSI or MRS if it finds:

(1) That there is a substantial increase in the overall protection of the occupational or public health and safety to be derived from the backfit, and

(2) That the direct and indirect costs of implementation for that ISFSI or MRS are justified in view of this increased protection.

(d) The Commission may at any time require a holder of a license to submit such information concerning the backfitting or the proposed backfitting

of an ISFSI or MRS as it deems appropriate.

Subpart D—Records, Reports, Inspections, and Enforcement

§ 72.70 Safety analysis report updating.

(a) Each specific licensee for an ISFSI or MRS shall update periodically, as provided in paragraphs (b) and (c) of this section, the final safety analysis report (FSAR) to assure that the information included in the report contains the latest information developed.

(1) Each licensee shall submit an original FSAR to the Commission, in accordance with § 72.4, within 90 days after issuance of the license.

(2) The original FSAR shall be based on the safety analysis report submitted with the application and reflect any changes and applicant commitments developed during the license approval and/or hearing process.

(b) Each update shall contain all the changes necessary to reflect information and analyses submitted to the Commission by the licensee or prepared by the licensee pursuant to Commission requirement since the submission of the original FSAR or, as appropriate, the last update to the FSAR under this section. The update shall include the effects[1] of:

(1) All changes made in the ISFSI or MRS or procedures as described in the FSAR;

(2) All safety analyses and evaluations performed by the licensee either in support of approved license amendments, or in support of conclusions that changes did not require a license amendment in accordance with § 72.48;

(3) All final analyses and evaluations of the design and performance of structures, systems, and components that are important to safety taking into account any pertinent information developed during final design, construction, and preoperational testing; and

(4) All analyses of new safety issues performed by or on behalf of the licensee at Commission request. The information shall be appropriately located within the updated FSAR.

(c)(1) The update of the FSAR must be filed in accordance with § 72.4. If the update is filed on paper, it should be filed on a page-replacement basis; if filed electronically, it should be filed on a full replacement basis. See Guidance for Electronic Submissions to the Commission at *http://www.nrc.gov/site-help/e-submittals.html*.

(2) A paper update filed on a page-replacement basis must include a list that identifies the current pages of the FSAR following page replacement. If the update is filed electronically on a full replacement basis, it must include a list of changed pages.

(3) Each replacement page shall include both a change indicator for the area changed, e.g., a bold line vertically drawn in the margin adjacent to the portion actually changed, and a page change identification (date of change or change number or both);

(4) The update shall include:

(i) A certification by a duly authorized officer of the licensee that either the information accurately presents changes made since the previous submittal, or that no such changes were made; and

(ii) An identification of changes made under the provisions of § 72.48, but not previously submitted to the Commission;

(5) The update shall reflect all changes implemented up to a maximum of 6 months prior to the date of filing; and

(6) Updates shall be filed every 24 months from the date of issuance of the license.

(d) The updated FSAR shall be retained by the licensee until the Commission terminates the license.

[64 FR 53616, Oct. 4, 1999, as amended at 68 FR 58819, Oct. 10, 2003; 74 FR 62684, Dec. 1, 2009]

§ 72.72 Material balance, inventory, and records requirements for stored materials.

(a) Each licensee shall keep records showing the receipt, inventory (including location), disposal, acquisition, and transfer of all special nuclear material with quantities as specified in § 74.13(a) of this chapter and for source material as specified in § 40.64 of this chapter.

[1] Effects of changes includes appropriate revisions of descriptions in the FSAR such that the FSAR (as updated) is complete and accurate.

The records must include as a minimum the name of shipper of the material to the ISFSI or MRS, the estimated quantity of radioactive material per item (including special nuclear material in spent fuel and reactor-related GTCC waste), item identification and seal number, storage location, onsite movements of each fuel assembly or storage canister, and ultimate disposal. These records for spent fuel and reactor-related GTCC waste at an ISFSI or for spent fuel, high-level radioactive waste, and reactor-related GTCC waste at an MRS must be retained for as long as the material is stored and for a period of 5 years after the material is disposed of or transferred out of the ISFSI or MRS.

(b) Each licensee shall conduct a physical inventory of all spent fuel, high-level radioactive waste, and reactor-related GTCC waste containing special nuclear material meeting the requirements in paragraph (a) of this section at intervals not to exceed 12 months unless otherwise directed by the Commission. The licensee shall retain a copy of the current inventory as a record until the Commission terminates the license.

(c) Each licensee shall establish, maintain, and follow written material control and accounting procedures that are sufficient to enable the licensee to account for material in storage. The licensee shall retain a copy of the current material control and accounting procedures until the Commission terminates the license.

(d) Records of spent fuel, high-level radioactive waste, and reactor-related GTCC waste containing special nuclear material meeting the requirements in paragraph (a) of this section must be kept in duplicate. The duplicate set of records must be kept at a separate location sufficiently remote from the original records that a single event would not destroy both sets of records. Records of spent fuel or reactor-related GTCC waste containing special nuclear material transferred out of an ISFSI or of spent fuel, high-level radioactive waste, or reactor-related GTCC waste containing special nuclear material transferred out of an MRS must be preserved for a period of five years after the date of transfer.

[53 FR 31658, Aug. 19, 1988, as amended at 66 FR 51841, Oct. 11, 2001; 73 FR 32462, June 9, 2008]

§ 72.74 Reports of accidental criticality or loss of special nuclear material.

(a) Each licensee shall notify the NRC Headquarters Operations Center by telephone at the numbers specified in appendix A to part 73 of this chapter within 1 hour of discovery of accidental criticality or any loss of special nuclear material.

(b) This notification must be made to the NRC Operations Center via the Emergency Notification System if the licensee is party to that system. If the Emergency Notification System is inoperative or unavailable, the licensee shall make the required notification via commercial telephonic service or any other dedicated telephonic system or any other method that will ensure that a report is received by the NRC Operations Center within one hour. The exemption of § 73.22(f)(3) of this chapter applies to all telephonic reports required by this section.

(c) Reports required under § 73.71 of this chapter need not be duplicated under the requirements of this section.

[53 FR 31658, Aug. 19, 1988, as amended at 59 FR 14087, Mar. 25, 1994, 81 FR 86910, Dec. 2, 2016; 85 FR 65664, Oct. 16, 2020]

§ 72.75 Reporting requirements for specific events and conditions.

(a) *Emergency notifications:* Each licensee shall notify the NRC Headquarters Operations Center upon the declaration of an emergency as specified in the licensee's approved emergency plan addressed in § 72.32. The licensee shall notify the NRC immediately after notification of the appropriate State or local agencies, but not later than one hour after the time the licensee declares an emergency.

(b) *Non-emergency notifications:* Four-hour reports. Each licensee shall notify the NRC as soon as possible but not later than four hours after the discovery of any of the following events or conditions involving spent fuel, HLW, or reactor-related GTCC waste:

(1) An action taken in an emergency that departs from a condition or a

technical specification contained in a license or certificate of compliance issued under this part when the action is immediately needed to protect the public health and safety, and no action consistent with license or certificate of compliance conditions or technical specifications that can provide adequate or equivalent protection is immediately apparent.

(2) Any event or situation related to the health and safety of the public or onsite personnel, or protection of the environment, for which a news release is planned or notification to other Government agencies has been or will be made. Such an event may include an onsite fatality or inadvertent release of radioactively contaminated materials.

(c) *Non-emergency notifications:* Eight-hour reports. Each licensee shall notify the NRC as soon as possible but not later than eight hours after the discovery of any of the following events or conditions involving spent fuel, HLW, or reactor-related GTCC waste:

(1) A defect in any spent fuel, HLW, or reactor-related GTCC waste storage structure, system, or component that is important to safety.

(2) A significant reduction in the effectiveness of any spent fuel, HLW, or reactor-related GTCC waste storage confinement system during use.

(3) Any event requiring the transport of a radioactively contaminated person to an offsite medical facility for treatment.

(d) *Non-emergency notifications:* 24-hour reports. Each licensee shall notify the NRC within 24 hours after the discovery of any of the following events involving spent fuel, HLW, or reactor-related GTCC waste:

(1) An event in which important to safety equipment is disabled or fails to function as designed when:

(i) The equipment is required by regulation, license condition, or certificate of compliance to be available and operable to prevent releases that could exceed regulatory limits, to prevent exposures to radiation or radioactive materials that could exceed regulatory limits, or to mitigate the consequences of an accident; and

(ii) No redundant equipment was available and operable to perform the required safety function.

(2) For notifications made under this paragraph, the licensee may delay the notification to the NRC if the end of the 24-hour period occurs outside of the NRC's normal working day (*i.e.*, 7:30 a.m. to 5:00 p.m. Eastern time), on a weekend, or a Federal holiday. In these cases, the licensee shall notify the NRC before 8:00 a.m. Eastern time on the next working day.

(e) *Initial notification:* Reports made by licensees in response to the requirements of this section must be made as follows:

(1) Licensees shall make reports required by paragraphs (a), (b), (c), or (d) of this section by telephone to the NRC Headquarters Operations Center at the numbers specified in appendix A to part 73 of this chapter.[1]

[1] Those licensees with an available Emergency Notification System (ENS) shall use the ENS to notify the NRC Headquarters Operations Center.

(2) When making a report under paragraphs (a), (b), (c), or (d) of this section, the licensee shall identify:

(i) The Emergency Class declared; or

(ii) Paragraph (b), ''four-hour reports,'' paragraph (c), ''eight-hour reports,'' or paragraph (d), ''24-hour reports,'' as the paragraph of this section requiring notification of the non-emergency event.

(3) To the extent that the information is available at the time of notification, the information provided in these reports must include:

(i) The caller's name and call back telephone number;

(ii) A description of the event, including date and time;

(iii) The exact location of the event;

(iv) The quantities and chemical and physical forms of the spent fuel, HLW, or reactor-related GTCC waste involved in the event; and

(v) Any personnel radiation exposure data.

(f) *Follow-up notification:* With respect to the telephone notifications made under paragraphs (a), (b), (c) or (d) of this section, in addition to making the required initial notification, each licensee shall during the course of the event:

(1) Immediately report any further degradation in the level of safety of the

ISFSI or MRS or other worsening conditions, including those that require the declaration of any of the Emergency Classes, if such a declaration has not been previously made; or any change from one Emergency Class to another; or a termination of the Emergency Class.

(2) Immediately report the results of ensuing evaluations or assessments of ISFSI or MRS conditions; the effectiveness of response or protective measures taken; and information related to ISFSI or MRS behavior that is not understood.

(3) Maintain an open, continuous communication channel with the NRC Headquarters Operations Center upon request by the NRC.

(g) *Preparation and submission of written reports.* Each licensee who makes an initial notification required by paragraphs (b)(1), (c)(1), (c)(2), or (d)(1) of this section shall also submit a written follow-up report to the Commission within 60 days of the initial notification. Written reports prepared pursuant to other regulations may be submitted to fulfill this requirement if the reports contain all the necessary information and the appropriate distribution is made. These written reports must be of sufficient quality to permit legible reproduction and optical scanning and must be submitted to the NRC in accordance with § 72.4. These reports must include the following information:

(1) A brief abstract describing the major occurrences during the event, including all component or system failures that contributed to the event and significant corrective action taken or planned to prevent recurrence;

(2) A clear, specific, narrative description of the event that occurred so that knowledgeable readers conversant with the design of an ISFSI or MRS, but not familiar with the details of a particular facility, can understand the complete event. The narrative description must include the following specific information as appropriate for the particular event:

(i) The ISFSI or MRS operating conditions before the event;

(ii) The status of structures, components, or systems that were inoperable at the start of the event and that contributed to the event;

(iii) The dates and approximate times of occurrences;

(iv) The cause of each component or system failure or personnel error, if known;

(v) The failure mode, mechanism, and effect of each failed component, if known;

(vi) A list of systems or secondary functions that were also affected for failures of components with multiple functions;

(vii) For wet spent fuel storage systems only, after the failure that rendered a train of a safety system inoperable, an estimate of the elapsed time from the discovery of the failure until the train was returned to service;

(viii) The method of discovery of each component or system failure or procedural error;

(ix) For each human performance related root cause, the licensee shall discuss the cause(s) and circumstances;

(x) For wet spent fuel storage systems only, any automatically and manually initiated safety system responses;

(xi) The manufacturer and model number (or other identification) of each component that failed during the event; and

(xii) The quantities and chemical and physical forms of the spent fuel, HLW, or reactor-related GTCC waste involved in the event;

(3) An assessment of the safety consequences and implications of the event. This assessment must include the availability of other systems or components that could have performed the same function as the components and systems that failed during the event;

(4) A description of any corrective actions planned as a result of the event, including those to reduce the probability of similar events occurring in the future;

(5) Reference to any previous similar events at the same facility that are known to the licensee;

(6) The name and telephone number of a person within the licensee's organization who is knowledgeable about the event and can provide additional

information concerning the event and the facility's characteristics; and

(7) The extent of exposure of individuals to radiation or to radioactive materials without identification of individuals by name.

(h) *Supplemental information:* The Commission may require the licensee to submit specific additional information beyond that required by paragraph (g) of this section if the Commission finds that supplemental material is necessary for complete understanding of an unusually complex or significant event. These requests for supplemental information will be made in writing, and the licensee shall submit, as specified in § 72.4, the requested information as a supplement to the initial written report.

(i) *Applicability:* The requirements of this section apply to:

(1)(i) Licensees issued a specific license under § 72.40; and

(ii) Licensees issued a general license under § 72.210, after the licensee has placed spent fuel on the ISFSI storage pad (if the ISFSI is located inside the collocated protected area, for a reactor licensed under part 50 of this chapter) or after the licensee has transferred spent fuel waste outside the reactor licensee's protected area to the ISFSI storage pad (if the ISFSI is located outside the collocated protected area, for a reactor licensed under part 50 of this chapter).

(2) Those non-emergency events specified in paragraphs (b), (c), and (d) of this section that occurred within 3 years of the date of discovery.

[68 FR 33615, June 5, 2003, as amended at 85 FR 65664, Oct. 16, 2020]

§ 72.76 Material status reports.

(a) Except as provided in paragraph (b) of this section, each licensee shall complete in computer-readable format and submit to the Commission a Material Balance Report and a Physical Inventory Listing Report as specified in the instructions in NUREG/BR–0007 and NMMSS Report D–24 ''Personal Computer Data Input for NRC Licensees.'' Copies of these instructions may be obtained either by writing to the U.S. Nuclear Regulatory Commission, Division of Fuel Management, Washington, DC 20555–0001, or by e-mail to *RidsNmssFcss@nrc.gov*. These reports, as specified by § 74.13 or 40.64 of this chapter, provide information concerning the special nuclear material and/or source material possessed, received, transferred, disposed of, or lost by the licensee. Each report must be submitted within 60 days of the beginning of the physical inventory required by § 72.72(b). The Commission may, when good cause is shown, permit a licensee to submit Material Balance Reports and Physical Inventory Listing Reports at other times. Each licensee required to report material balance and inventory information as described in this part, shall resolve any discrepancies identified during the report review and reconciliation process within 30 calendar days of notification of a discrepancy identified by NRC. The Commission's copy of this report must be submitted to the address specified in the instructions. These prescribed, computer-readable forms replace the DOE/NRC Forms 742 and 742C previously submitted in paper form.

(b) Any licensee who is required to submit routine material status reports pursuant to § 75.35 of this chapter (pertaining to implementation of the US/IAEA Safeguards Agreement) shall prepare and submit such reports only as provided in that section instead of as provided in paragraph (a) of this section.

[53 FR 31658, Aug. 19, 1988, as amended at 59 FR 35620, July 13, 1994; 66 FR 51841, Oct. 11, 2001; 67 FR 78143, Dec. 23, 2002; 68 FR 58819, Oct. 10, 2003; 73 FR 32462, June 9, 2008; 79 FR 75741, Dec. 19, 2014; 84 FR 65646, Nov. 29, 2019]

§ 72.78 Nuclear material transaction reports.

(a) Except as provided in paragraph (b) of this section, whenever the licensee transfers or receives or adjusts the inventory, in any manner, of special nuclear material as specified by § 74.15 and/or source material as specified by § 40.64 of this chapter, the licensee shall complete in computer-readable format a Nuclear Material Transaction Report as specified in the instructions in NUREG/BR–0006 and NMMSS Report D–24, ''Personal Computer Data Input for NRC Licensees.'' Copies of these instructions may be obtained either by writing to the U.S.

Nuclear Regulatory Commission, Division of Fuel Management, Washington, DC 20555–0001, or by e-mail to *RidsNmssFcss@nrc.gov*. Each licensee who transfers the material shall submit a Nuclear Material Transaction Report in computer-readable format as specified in the instructions no later than the close of business the next working day. Each licensee who receives the material shall submit a Nuclear Material Transaction Report in computer-readable format in accordance with instructions within ten (10) days after the material is received. Each ISFSI licensee who receives spent fuel from a foreign source shall complete both the supplier's and the receiver's portion of the Nuclear Material Transaction Report, verify the identity of the spent fuel, and indicate the results on the receiver's portion of the form. These prescribed computer-readable forms replace the DOE/NRC Form 741 which have been previously submitted in paper form.

(b) Any licensee who is required to submit Nuclear Material Transactions Reports pursuant to § 75.34 of this chapter (pertaining to implementation of the US/IAEA Safeguards Agreement) shall prepare and submit the reports only as provided in that section instead of as provided in paragraph (a) of this section.

[59 FR 35621, July 13, 1994, as amended at 66 FR 51841, Oct. 11, 2001; 68 FR 58819, Oct. 10, 2003; 73 FR 32463, June 9, 2008; 79 FR 75741, Dec. 19, 2014; 84 FR 65646, Nov. 29, 2019]

§ 72.79 Facility information and verification.

(a) In response to a written request by the Commission, each applicant for a certificate of compliance or license and each recipient of a certificate of compliance or specific or general license shall submit facility information, as described in § 75.10 of this chapter, on IAEA Design Information Questionnaire forms and site information on DOC/NRC Form AP–A and associated forms;

(b) Shall submit location information described in § 75.11 of this chapter on DOC/NRC Form AP–1 and associated forms; and

(c) Shall permit verification thereof by the International Atomic Energy Agency (IAEA) and take other action as necessary to implement the US/IAEA Safeguards Agreement, as described in part 75 of this chapter.

[73 FR 78607, Dec. 23, 2008, as amended at 85 FR 65663, Oct. 16, 2020]

§ 72.80 Other records and reports.

(a) Each licensee shall maintain any records and make any reports that may be required by the conditions of the license or by the rules, regulations, and orders of the Commission in effectuating the purposes of the Act.

(b) Each licensee shall furnish a copy of its annual financial report, including the certified financial statements, to the Commission. However, licensees who submit a Form 10–Q with the Securities and Exchange Commission or a Form 1 with the Federal Energy Regulatory Commission, need not submit the annual financial report or a certified financial statement under this paragraph.

(c) Records that are required by the regulations in this part or by the license conditions must be maintained for the period specified by the appropriate regulation or license condition. If a retention period is not otherwise specified, the above records must be maintained until the Commission terminates the license.

(d) Any record that must be maintained pursuant to this part may be either the original or a reproduced copy by any state of the art method provided that any reproduced copy is duly authenticated by authorized personnel and is capable of producing a clear and legible copy after storage for the period specified by Commission regulations.

(e) Before license termination, the licensee shall forward records required by § 20.2103(b)(4), of this chapter, and § 72.30(f) to the appropriate NRC Regional Office.

(f) If licensed activities are transferred or assigned in accordance with § 72.44(b)(1), the licensee shall transfer the records required by § 20.2103(b)(4), of this chapter, and § 72.30(f) to the new licensee and the new licensee will be responsible for maintaining these records until the license is terminated.

(g) Each specific licensee shall notify the Commission, in accordance with

§ 72.4, of its readiness to begin operation at least 90 days prior to the first storage of spent fuel, high-level waste, or reactor-related GTCC waste in an ISFSI or an MRS.

[53 FR 31658, Aug. 19, 1988, as amended at 61 FR 24675, May 16, 1996; 64 FR 53616, Oct. 4, 1999; 66 FR 51841, Oct. 11, 2001; 71 FR 29247, May 22, 2006; 76 FR 35574, June 17, 2011]

§ 72.82 Inspections and tests.

(a) Each licensee under this part shall permit duly authorized representatives of the Commission to inspect its records, premises, and activities and of spent fuel, high-level radioactive waste, or reactor-related GTCC waste in its possession related to the specific license as may be necessary to meet the objectives of the Act, including section 105 of the Act.

(b) Each licensee under this part shall make available to the Commission for inspection, upon reasonable notice, records kept by the licensee pertaining to its receipt, possession, packaging, or transfer of spent fuel, high-level radioactive waste, or reactor-related GTCC waste.

(c)(1) Each licensee under this part shall upon request by the Director, Office of Nuclear Material Safety and Safeguards or the appropriate NRC Regional Administrator provide rent-free office space for the exclusive use of the Commission inspection personnel. Heat, air conditioning, light, electrical outlets and janitorial services shall be furnished by each licensee. The office shall be convenient to and have full access to the installation and shall provide the inspector both visual and acoustic privacy.

(2) For a site with a single storage installation the space provided shall be adequate to accommodate a full-time inspector, a part-time secretary, and transient NRC personnel and will be generally commensurate with other office facilities at the site. A space of 250 sq. ft., either within the site's office complex or in an office trailer, or other onsite space, is suggested as a guide. For sites containing multiple facilities, additional space may be requested to accommodate additional full-time inspectors. The office space that is provided shall be subject to the approval of the Director, Office of Nuclear Material Safety and Safeguards or the appropriate NRC Regional Administrator. All furniture, supplies and Commission equipment will be furnished by the Commission.

(3) Each licensee under this part shall afford any NRC resident inspector assigned to that site, or other NRC inspectors identified by the Regional Administrator as likely to inspect the installation, immediate unfettered access, equivalent to access provided regular plant employees, following proper identification and compliance with applicable access control measures for security, radiological protection, and personal safety.

(d) Each licensee shall perform, or permit the Commission to perform, such tests as the Commission deems appropriate or necessary for the administrator of the regulations in this part.

[53 FR 31658, Aug. 19, 1988, as amended at 64 FR 17512, Apr. 12, 1999; 66 FR 51842, Oct. 11, 2001]

§ 72.84 Violations.

(a) The Commission may obtain an injunction or other court order to prevent a violation of the provisions of—

(1) The Atomic Energy Act of 1954, as amended;

(2) Title II of the Energy Reorganization Act of 1974, as amended; or

(3) A regulation or order issued pursuant to those Acts.

(b) The Commission may obtain a court order for the payment of a civil penalty imposed under section 234 of the Atomic Energy Act:

(1) For violations of—

(i) Sections 53, 57, 62, 63, 81, 82, 101, 103, 104, 107, or 109 of the Atomic Energy Act of 1954, as amended;

(ii) Section 206 of the Energy Reorganization Act;

(iii) Any rule, regulation, or order issued pursuant to the sections specified in paragraph (b)(1)(i) of this section;

(iv) Any term, condition, or limitation of any license issued under the sections specified in paragraph (b)(1)(i) of this section.

(2) For any violation for which a license may be revoked under Section 186 of the Atomic Energy Act of 1954, as amended.

[57 FR 55078, Nov. 24, 1992]

§ 72.86 Criminal penalties.

(a) Section 223 of the Atomic Energy Act of 1954, as amended, provides for criminal sanctions for willful violation of, attempted violation of, or conspiracy to violate, any regulation issued under sections 161b, 161i, or 161o of the Act. For purposes of section 223, all the regulations in part 72 are issued under one or more of sections 161b, 161i, or 161o, except for the sections listed in paragraph (b) of this section.

(b) The regulations in Part 72 that are not issued under sections 161b, 161i, or 161o for the purposes of section 223 are as follows: §§72.1, 72.2, 72.3, 72.4, 72.5, 72.7, 72.8, 72.9, 72.13, 72.16, 72.18, 72.20, 72.22, 72.24, 72.26, 72.28, 72.32, 72.34, 72.40, 72.46, 72.56, 72.58, 72.60, 72.62, 72.84, 72.86, 72.90, 72.96, 72.108, 72.120, 72.122, 72.124, 72.126, 72.128, 72.130, 72.182, 72.194, 72.200, 72.202, 72.204, 72.206, 72.210, 72.214, 72.220, 72.230, 72.238, and 72.240.

[57 FR 55078, Nov. 24, 1992, as amended at 59 FR 36040, July 13, 1994; 64 FR 53616, Oct. 4, 1999; 64 FR 56122, Oct. 15, 1999; 65 FR 50617, Aug. 21, 2000]

Subpart E—Siting Evaluation Factors

§ 72.90 General considerations.

(a) Site characteristics that may directly affect the safety or environmental impact of the ISFSI or MRS must be investigated and assessed.

(b) Proposed sites for the ISFSI or MRS must be examined with respect to the frequency and the severity of external natural and man-induced events that could affect the safe operation of the ISFSI or MRS.

(c) Design basis external events must be determined for each combination of proposed site and proposed ISFSI or MRS design.

(d) Proposed sites with design basis external events for which adequate protection cannot be provided through ISFSI or MRS design shall be deemed unsuitable for the location of the ISFSI or MRS.

(e) Pursuant to subpart A of part 51 of this chapter for each proposed site for an ISFSI and pursuant to sections 141 or 148 of NWPA, as appropriate (96 Stat. 2241, 101 Stat. 1330–235, 42 U.S.C. 10161, 10168) for each proposed site for an MRS, the potential for radiological and other environmental impacts on the region must be evaluated with due consideration of the characteristics of the population, including its distribution, and of the regional environs, including its historical and esthetic values.

(f) The facility must be sited so as to avoid to the extent possible the long-term and short-term adverse impacts associated with the occupancy and modification of floodplains.

§ 72.92 Design basis external natural events.

(a) Natural phenomena that may exist or that can occur in the region of a proposed site must be identified and assessed according to their potential effects on the safe operation of the ISFSI or MRS. The important natural phenomena that affect the ISFSI or MRS design must be identified.

(b) Records of the occurrence and severity of those important natural phenomena must be collected for the region and evaluated for reliability, accuracy, and completeness. The applicant shall retain these records until the license is issued.

(c) Appropriate methods must be adopted for evaluating the design basis external natural events based on the characteristics of the region and the current state of knowledge about such events.

§ 72.94 Design basis external man-induced events.

(a) The region must be examined for both past and present man-made facilities and activities that might endanger the proposed ISFSI or MRS. The important potential man-induced events that affect the ISFSI or MRS design must be identified.

(b) Information concerning the potential occurrence and severity of such events must be collected and evaluated for reliability, accuracy, and completeness.

(c) Appropriate methods must be adopted for evaluating the design basis external man-induced events, based on the current state of knowledge about such events.

§ 72.96 Siting limitations.

(a) An ISFSI which is owned and operated by DOE must not be located at any site within which there is a candidate site for a HLW repository. This limitation shall apply until such time as DOE decides that such candidate site is no longer a candidate site under consideration for development as a HLW repository.

(b) An MRS must not be sited in any State in which there is located any site approved for site characterization for a HLW repository. This limitation shall apply until such time as DOE decides that the candidate site is no longer a candidate site under consideration for development as a repository. This limitation shall continue to apply to any site selected for construction as a repository.

(c) If an MRS is located, or is planned to be located, within 50 miles of the first HLW repository, any Commission decision approving the first HLW repository application must limit the quantity of spent fuel or high-level radioactive waste that may be stored. This limitation shall prohibit the storage of a quantity of spent fuel containing in excess of 70,000 metric tons of heavy metal, or a quantity of solidified high-level radioactive waste resulting from the reprocessing of such a quantity of spent fuel, in both the repository and the MRS until such time as a second repository is in operation.

(d) An MRS authorized by section 142(b) of NWPA (101 Stat. 1330–232, 42 U.S.C. 10162(b)) may not be constructed in the State of Nevada. The quantity of spent nuclear fuel or high-level radioactive waste that may be stored at an MRS authorized by section 142(b) of NWPA shall be subject to the limitations in § 72.44(g) of this part instead of the limitations in paragraph (c) of this section.

§ 72.98 Identifying regions around an ISFSI or MRS site.

(a) The regional extent of external phenomena, man-made or natural, that are used as a basis for the design of the ISFSI or MRS must be identified.

(b) The potential regional impact due to the construction, operation or decommissioning of the ISFSI or MRS must be identified. The extent of regional impacts must be determined on the basis of potential measurable effects on the population or the environment from ISFSI or MRS activities.

(c) Those regions identified pursuant to paragraphs (a) and (b) of this section must be investigated as appropriate with respect to:

(1) The present and future character and the distribution of population,

(2) Consideration of present and projected future uses of land and water within the region, and

(3) Any special characteristics that may influence the potential consequences of a release of radioactive material during the operational lifetime of the ISFSI or MRS.

§ 72.100 Defining potential effects of the ISFSI or MRS on the region.

(a) The proposed site must be evaluated with respect to the effects on populations in the region resulting from the release of radioactive materials under normal and accident conditions during operation and decommissioning of the ISFSI or MRS; in this evaluation both usual and unusual regional and site characteristics shall be taken into account.

(b) Each site must be evaluated with respect to the effects on the regional environment resulting from construction, operation, and decommissioning for the ISFSI or MRS; in this evaluation both usual and unusual regional and site characteristics must be taken into account.

§ 72.102 Geological and seismological characteristics for applications before October 16, 2003 and applications for other than dry cask modes of storage.

(a)(1) East of the Rocky Mountain Front (east of approximately 104° west longitude), except in areas of known seismic activity including but not limited to the regions around New Madrid, MO, Charleston, SC, and Attica, NY, sites will be acceptable if the results from onsite foundation and geological investigation, literature review, and regional geological reconnaissance show no unstable geological characteristics, soil stability problems, or potential for vibratory ground motion at the site in excess of an appropriate response spectrum anchored at 0.2 g.

(2) For those sites that have been evaluated under paragraph (a)(1) of this section that are east of the Rocky Mountain Front, and that are not in areas of known seismic activity, a standardized design earthquake (DE) described by an appropriate response spectrum anchored at 0.25 g may be used. Alternatively, a site-specific DE may be determined by using the criteria and level of investigations required by appendix A of part 100 of this chapter.

(b) West of the Rocky Mountain Front (west of approximately 104° west longitude), and in other areas of known potential seismic activity, seismicity will be evaluated by the techniques of appendix A of part 100 of this chapter. Sites that lie within the range of strong near-field ground motion from historical earthquakes on large capable faults should be avoided.

(c) Sites other than bedrock sites must be evaluated for their liquefaction potential or other soil instability due to vibratory ground motion.

(d) Site-specific investigations and laboratory analyses must show that soil conditions are adequate for the proposed foundation loading.

(e) In an evaluation of alternative sites, those which require a minimum of engineered provisions to correct site deficiencies are preferred. Sites with unstable geologic characteristics should be avoided.

(f) The design earthquake (DE) for use in the design of structures must be determined as follows:

(1) For sites that have been evaluated under the criteria of appendix A of 10 CFR part 100, the DE must be equivalent to the safe shutdown earthquake (SSE) for a nuclear power plant.

(2) Regardless of the results of the investigations anywhere in the continental U.S., the DE must have a value for the horizontal ground motion of no less than 0.10 g with the appropriate response spectrum.

§ 72.103 Geological and seismological characteristics for applications for dry cask modes of storage on or after October 16, 2003.

(a)(1) East of the Rocky Mountain Front (east of approximately 104° west longitude), except in areas of known seismic activity including but not limited to the regions around New Madrid, MO; Charleston, SC; and Attica, NY; sites will be acceptable if the results from onsite foundation and geological investigation, literature review, and regional geological reconnaissance show no unstable geological characteristics, soil stability problems, or potential for vibratory ground motion at the site in excess of an appropriate response spectrum anchored at 0.2 g.

(2) For those sites that have been evaluated under paragraph (a)(1) of this section that are east of the Rocky Mountain Front, and that are not in areas of known seismic activity, a standardized design earthquake ground motion (DE) described by an appropriate response spectrum anchored at 0.25 g may be used. Alternatively, a site-specific DE may be determined by using the criteria and level of investigations required by paragraph (f) of this section. For a site with a co-located nuclear power plant (NPP), the existing geological and seismological design criteria for the NPP may be used. If the existing design criteria for the NPP is used and the site has multiple NPPs, then the criteria for the most recent NPP must be used.

(b) West of the Rocky Mountain Front (west of approximately 104° west longitude), and in other areas of known potential seismic activity east of the Rocky Mountain Front, seismicity must be evaluated by the techniques presented in paragraph (f) of this section. If an ISFSI or MRS is located on an NPP site, the existing geological and seismological design criteria for the NPP may be used. If the existing design criteria for the NPP is used and the site has multiple NPPs, then the criteria for the most recent NPP must be used.

(c) Sites other than bedrock sites must be evaluated for their liquefaction potential or other soil instability due to vibratory ground motion.

(d) Site-specific investigations and laboratory analyses must show that soil conditions are adequate for the proposed foundation loading.

(e) In an evaluation of alternative sites, those which require a minimum of engineered provisions to correct site deficiencies are preferred. Sites with

unstable geologic characteristics should be avoided.

(f) Except as provided in paragraphs (a)(2) and (b) of this section, the DE for use in the design of structures, systems, and components must be determined as follows:

(1) *Geological, seismological, and engineering characteristics.* The geological, seismological, and engineering characteristics of a site and its environs must be investigated in sufficient scope and detail to permit an adequate evaluation of the proposed site, to provide sufficient information to support evaluations performed to arrive at estimates of the DE, and to permit adequate engineering solutions to actual or potential geologic and seismic effects at the proposed site. The size of the region to be investigated and the type of data pertinent to the investigations must be determined based on the nature of the region surrounding the proposed site. Data on the vibratory ground motion, tectonic surface deformation, nontectonic deformation, earthquake recurrence rates, fault geometry and slip rates, site foundation material, and seismically induced floods and water waves must be obtained by reviewing pertinent literature and carrying out field investigations. However, each applicant shall investigate all geologic and seismic factors (for example, volcanic activity) that may affect the design and operation of the proposed ISFSI or MRS facility irrespective of whether these factors are explicitly included in this section.

(2) *Geologic and seismic siting factors.* The geologic and seismic siting factors considered for design must include a determination of the DE for the site, the potential for surface tectonic and nontectonic deformations, the design bases for seismically induced floods and water waves, and other design conditions as stated in paragraph (f)(2)(iv) of this section.

(i) Determination of the Design Earthquake Ground Motion (DE). The DE for the site is characterized by both horizontal and vertical free-field ground motion response spectra at the free ground surface. In view of the limited data available on vibratory ground motions for strong earthquakes, it usually will be appropriate that the design response spectra be smoothed spectra. The DE for the site is determined considering the results of the investigations required by paragraph (f)(1) of this section. Uncertainties are inherent in these estimates and must be addressed through an appropriate analysis, such as a probabilistic seismic hazard analysis (PSHA) or suitable sensitivity analyses.

(ii) Determination of the potential for surface tectonic and nontectonic deformations. Sufficient geological, seismological, and geophysical data must be provided to clearly establish if there is a potential for surface deformation.

(iii) Determination of design bases for seismically induced floods and water waves. The size of seismically induced floods and water waves that could affect a site from either locally or distantly generated seismic activity must be determined.

(iv) Determination of siting factors for other design conditions. Siting factors for other design conditions that must be evaluated include soil and rock stability, liquefaction potential, and natural and artificial slope stability. Each applicant shall evaluate all siting factors and potential causes of failure, such as, the physical properties of the materials underlying the site, ground disruption, and the effects of vibratory ground motion that may affect the design and operation of the proposed ISFSI or MRS.

(3) Regardless of the results of the investigations anywhere in the continental U.S., the DE must have a value for the horizontal ground motion of no less than 0.10 g with the appropriate response spectrum.

[68 FR 54159, Sept. 16, 2003]

§ 72.104 Criteria for radioactive materials in effluents and direct radiation from an ISFSI or MRS.

(a) During normal operations and anticipated occurrences, the annual dose equivalent to any real individual who is located beyond the controlled area must not exceed 0.25 mSv (25 mrem) to the whole body, 0.75 mSv (75 mrem) to the thyroid and 0.25 mSv (25 mrem) to any other critical organ as a result of exposure to:

(1) Planned discharges of radioactive materials, radon and its decay products excepted, to the general environment,

(2) Direct radiation from ISFSI or MRS operations, and

(3) Any other radiation from uranium fuel cycle operations within the region.

(b) Operational restrictions must be established to meet as low as is reasonably achievable objectives for radioactive materials in effluents and direct radiation levels associated with ISFSI or MRS operations.

(c) Operational limits must be established for radioactive materials in effluents and direct radiation levels associated with ISFSI or MRS operations to meet the limits given in paragraph (a) of this section.

[53 FR 31658, Aug. 19, 1988, as amended at 63 FR 54562, Oct. 13, 1998]

§ 72.106 Controlled area of an ISFSI or MRS.

(a) For each ISFSI or MRS site, a controlled area must be established.

(b) Any individual located on or beyond the nearest boundary of the controlled area may not receive from any design basis accident the more limiting of a total effective dose equivalent of 0.05 Sv (5 rem), or the sum of the deep-dose equivalent and the committed dose equivalent to any individual organ or tissue (other than the lens of the eye) of 0.5 Sv (50 rem). The lens dose equivalent may not exceed 0.15 Sv (15 rem) and the shallow dose equivalent to skin or any extremity may not exceed 0.5 Sv (50 rem). The minimum distance from the spent fuel, high-level radioactive waste, or reactor-related GTCC waste handling and storage facilities to the nearest boundary of the controlled area must be at least 100 meters.

(c) The controlled area may be traversed by a highway, railroad or waterway, so long as appropriate and effective arrangements are made to control traffic and to protect public health and safety.

[53 FR 31658, Aug. 19, 1988, as amended at 63 FR 54562, Oct. 13, 1998; 66 FR 51842, Oct. 11, 2001]

§ 72.108 Spent fuel, high-level radioactive waste, or reactor-related greater than Class C waste transportation.

The proposed ISFSI or MRS must be evaluated with respect to the potential impact on the environment of the transportation of spent fuel, high-level radioactive waste, or reactor-related GTCC waste within the region.

[66 FR 51842, Oct. 11, 2001]

Subpart F—General Design Criteria

§ 72.120 General considerations.

(a) As required by § 72.24, an application to store spent fuel or reactor-related GTCC waste in an ISFSI or to store spent fuel, high-level radioactive waste, or reactor-related GTCC waste in an MRS must include the design criteria for the proposed storage installation. These design criteria establish the design, fabrication, construction, testing, maintenance and performance requirements for structures, systems, and components important to safety as defined in § 72.3. The general design criteria identified in this subpart establish minimum requirements for the design criteria for an ISFSI or an MRS. Any omissions in these general design criteria do not relieve the applicant from the requirement of providing the necessary safety features in the design of the ISFSI or MRS.

(b) The ISFSI must be designed to store spent fuel and/or solid reactor-related GTCC waste.

(1) Reactor-related GTCC waste may not be stored in a cask that also contains spent fuel. This restriction does not include radioactive materials that are associated with fuel assemblies (e.g., control rod blades or assemblies, thimble plugs, burnable poison rod assemblies, or fuel channels);

(2) Liquid reactor-related GTCC wastes may not be received or stored in an ISFSI; and

(3) If the ISFSI is a water-pool type facility, the reactor-related GTCC waste must be in a durable solid form with demonstrable leach resistance.

(c) The MRS must be designed to store spent fuel, solid high-level radioactive waste, and/or solid reactor-related GTCC waste.

(1) Reactor-related GTCC waste may not be stored in a cask that also contains spent fuel. This restriction does not include radioactive materials associated with fuel assemblies (e.g., control rod blades or assemblies, thimble plugs, burnable poison rod assemblies, or fuel channels);

(2) Liquid high-level radioactive wastes or liquid reactor-related GTCC wastes may not be received or stored in an MRS; and

(3) If the MRS is a water-pool type facility, the high-level waste and reactor-related GTCC waste must be in a durable solid form with demonstrable leach resistance.

(d) The ISFSI or MRS must be designed, made of materials, and constructed to ensure that there will be no significant chemical, galvanic, or other reactions between or among the storage system components, spent fuel, reactor-related GTCC waste, and/or high level waste including possible reaction with water during wet loading and unloading operations or during storage in a water-pool type ISFSI or MRS. The behavior of materials under irradiation and thermal conditions must be taken into account.

(e) The NRC may authorize exceptions, on a case-by-case basis, to the restrictions in paragraphs (b) and (c) of this section regarding the commingling of spent fuel and reactor-related GTCC waste in the same cask.

[66 FR 51842, Oct. 11, 2001]

§ 72.122 Overall requirements.

(a) *Quality Standards*. Structures, systems, and components important to safety must be designed, fabricated, erected, and tested to quality standards commensurate with the importance to safety of the function to be performed.

(b) *Protection against environmental conditions and natural phenomena*. (1) Structures, systems, and components important to safety must be designed to accommodate the effects of, and to be compatible with, site characteristics and environmental conditions associated with normal operation, maintenance, and testing of the ISFSI or MRS and to withstand postulated accidents.

(2)(i) Structures, systems, and components important to safety must be designed to withstand the effects of natural phenomena such as earthquakes, tornadoes, lightning, hurricanes, floods, tsunami, and seiches, without impairing their capability to perform their intended design functions. The design bases for these structures, systems, and components must reflect:

(A) Appropriate consideration of the most severe of the natural phenomena reported for the site and surrounding area, with appropriate margins to take into account the limitations of the data and the period of time in which the data have accumulated, and

(B) Appropriate combinations of the effects of normal and accident conditions and the effects of natural phenomena.

(ii) The ISFSI or MRS also should be designed to prevent massive collapse of building structures or the dropping of heavy objects as a result of building structural failure on the spent fuel, high-level radioactive waste, or reactor-related GTCC waste or on to structures, systems, and components important to safety.

(3) Capability must be provided for determining the intensity of natural phenomena that may occur for comparison with design bases of structures, systems, and components important to safety.

(4) If the ISFSI or MRS is located over an aquifer which is a major water resource, measures must be taken to preclude the transport of radioactive materials to the environment through this potential pathway.

(c) *Protection against fires and explosions*. Structures, systems, and components important to safety must be designed and located so that they can continue to perform their safety functions effectively under credible fire and explosion exposure conditions. Noncombustible and heat-resistant materials must be used wherever practical throughout the ISFSI or MRS, particularly in locations vital to the control of radioactive materials and to the

maintenance of safety control functions. Explosion and fire detection, alarm, and suppression systems shall be designed and provided with sufficient capacity and capability to minimize the adverse effects of fires and explosions on structures, systems, and components important to safety. The design of the ISFSI or MRS must include provisions to protect against adverse effects that might result from either the operation or the failure of the fire suppression system.

(d) *Sharing of structures, systems, and components.* Structures, systems, and components important to safety must not be shared between an ISFSI or MRS and other facilities unless it is shown that such sharing will not impair the capability of either facility to perform its safety functions, including the ability to return to a safe condition in the event of an accident.

(e) *Proximity of sites.* An ISFSI or MRS located near other nuclear facilities must be designed and operated to ensure that the cumulative effects of their combined operations will not constitute an unreasonable risk to the health and safety of the public.

(f) *Testing and maintenance of systems and components.* Systems and components that are important to safety must be designed to permit inspection, maintenance, and testing.

(g) *Emergency capability.* Structures, systems, and components important to safety must be designed for emergencies. The design must provide for accessibility to the equipment of onsite and available offsite emergency facilities and services such as hospitals, fire and police departments, ambulance service, and other emergency agencies.

(h) *Confinement barriers and systems.* (1) The spent fuel cladding must be protected during storage against degradation that leads to gross ruptures or the fuel must be otherwise confined such that degradation of the fuel during storage will not pose operational safety problems with respect to its removal from storage. This may be accomplished by canning of consolidated fuel rods or unconsolidated assemblies or other means as appropriate.

(2) For underwater storage of spent fuel, high-level radioactive waste, or reactor-related GTCC waste in which the pool water serves as a shield and a confinement medium for radioactive materials, systems for maintaining water purity and the pool water level must be designed so that any abnormal operations or failure in those systems from any cause will not cause the water level to fall below safe limits. The design must preclude installations of drains, permanently connected systems, and other features that could, by abnormal operations or failure, cause a significant loss of water. Pool water level equipment must be provided to alarm in a continuously manned location if the water level in the storage pools falls below a predetermined level.

(3) Ventilation systems and off-gas systems must be provided where necessary to ensure the confinement of airborne radioactive particulate materials during normal or off-normal conditions.

(4) Storage confinement systems must have the capability for continuous monitoring in a manner such that the licensee will be able to determine when corrective action needs to be taken to maintain safe storage conditions. For dry spent fuel storage, periodic monitoring is sufficient provided that periodic monitoring is consistent with the dry spent fuel storage cask design requirements. The monitoring period must be based upon the spent fuel storage cask design requirements.

(5) The high-level radioactive waste and reactor-related GTCC waste must be packaged in a manner that allows handling and retrievability without the release of radioactive materials to the environment or radiation exposures in excess of part 20 limits. The package must be designed to confine the high-level radioactive waste for the duration of the license.

(i) *Instrumentation and control systems.* Instrumentation and control systems for wet spent fuel and reactor-related GTCC waste storage must be provided to monitor systems that are important to safety over anticipated ranges for normal operation and off-normal operation. Those instruments and control systems that must remain operational under accident conditions must be identified in the Safety Analysis Report. Instrumentation systems for dry

storage casks must be provided in accordance with cask design requirements to monitor conditions that are important to safety over anticipated ranges for normal conditions and off-normal conditions. Systems that are required under accident conditions must be identified in the Safety Analysis Report.

(j) *Control room or control area.* A control room or control area, if appropriate for the ISFSI or MRS design, must be designed to permit occupancy and actions to be taken to monitor the ISFSI or MRS safely under normal conditions, and to provide safe control of the ISFSI or MRS under off-normal or accident conditions.

(k) *Utility or other services.* (1) Each utility service system must be designed to meet emergency conditions. The design of utility services and distribution systems that are important to safety must include redundant systems to the extent necessary to maintain, with adequate capacity, the ability to perform safety functions assuming a single failure.

(2) Emergency utility services must be designed to permit testing of the functional operability and capacity, including the full operational sequence, of each system for transfer between normal and emergency supply sources; and to permit the operation of associated safety systems.

(3) Provisions must be made so that, in the event of a loss of the primary electric power source or circuit, reliable and timely emergency power will be provided to instruments, utility service systems, the central security alarm station, and operating systems, in amounts sufficient to allow safe storage conditions to be maintained and to permit continued functioning of all systems essential to safe storage.

(4) An ISFSI or MRS which is located on the site of another facility may share common utilities and services with such a facility and be physically connected with the other facility; however, the sharing of utilities and services or the physical connection must not significantly:

(i) Increase the probability or consequences of an accident or malfunction of components, structures, or systems that are important to safety; or

(ii) Reduce the margin of safety as defined in the basis for any technical specifications of either facility.

(l) *Retrievability.* Storage systems must be designed to allow ready retrieval of spent fuel, high-level radioactive waste, and reactor-related GTCC waste for further processing or disposal.

[53 FR 31658, Aug. 19, 1988, as amended at 64 FR 33184, June 22, 1999; 66 FR 51842, Oct. 11, 2001]

§ 72.124 Criteria for nuclear criticality safety.

(a) *Design for criticality safety.* Spent fuel handling, packaging, transfer, and storage systems must be designed to be maintained subcritical and to ensure that, before a nuclear criticality accident is possible, at least two unlikely, independent, and concurrent or sequential changes have occurred in the conditions essential to nuclear criticality safety. The design of handling, packaging, transfer, and storage systems must include margins of safety for the nuclear criticality parameters that are commensurate with the uncertainties in the data and methods used in calculations and demonstrate safety for the handling, packaging, transfer and storage conditions and in the nature of the immediate environment under accident conditions.

(b) *Methods of criticality control.* When practicable, the design of an ISFSI or MRS must be based on favorable geometry, permanently fixed neutron absorbing materials (poisons), or both. Where solid neutron absorbing materials are used, the design must provide for positive means of verifying their continued efficacy. For dry spent fuel storage systems, the continued efficacy may be confirmed by a demonstration or analysis before use, showing that significant degradation of the neutron absorbing materials cannot occur over the life of the facility.

(c) *Criticality monitoring.* A criticality monitoring system shall be maintained in each area where special nuclear material is handled, used, or stored which will energize clearly audible alarm signals if accidental criticality occurs. Underwater monitoring is not required when special nuclear material is handled or stored beneath water shielding.

Monitoring of dry storage areas where special nuclear material is packaged in its stored configuration under a license issued under this subpart is not required.

[53 FR 31658, Aug. 19, 1988, as amended at 64 FR 33184, June 22, 1999]

§ 72.126 Criteria for radiological protection.

(a) *Exposure control.* Radiation protection systems must be provided for all areas and operations where onsite personnel may be exposed to radiation or airborne radioactive materials. Structures, systems, and components for which operation, maintenance, and required inspections may involve occupational exposure must be designed, fabricated, located, shielded, controlled, and tested so as to control external and internal radiation exposures to personnel. The design must include means to:

(1) Prevent the accumulation of radioactive material in those systems requiring access;

(2) Decontaminate those systems to which access is required;

(3) Control access to areas of potential contamination or high radiation within the ISFSI or MRS;

(4) Measure and control contamination of areas requiring access;

(5) Minimize the time required to perform work in the vicinity of radioactive components; for example, by providing sufficient space for ease of operation and designing equipment for ease of repair and replacement; and

(6) Shield personnel from radiation exposure.

(b) *Radiological alarm systems.* Radiological alarm systems must be provided in accessible work areas as appropriate to warn operating personnel of radiation and airborne radioactive material concentrations above a given setpoint and of concentrations of radioactive material in effluents above control limits. Radiation alarm systems must be designed with provisions for calibration and testing their operability.

(c) *Effluent and direct radiation monitoring.* (1) As appropriate for the handling and storage system, effluent systems must be provided. Means for measuring the amount of radionuclides in effluents during normal operations and under accident conditions must be provided for these systems. A means of measuring the flow of the diluting medium, either air or water, must also be provided.

(2) Areas containing radioactive materials must be provided with systems for measuring the direct radiation levels in and around these areas.

(d) *Effluent control.* The ISFSI or MRS must be designed to provide means to limit to levels as low as is reasonably achievable the release of radioactive materials in effluents during normal operations; and control the release of radioactive materials under accident conditions. Analyses must be made to show that releases to the general environment during normal operations and anticipated occurrences will be within the exposure limit given in § 72.104. Analyses of design basis accidents must be made to show that releases to the general environment will be within the exposure limits given in § 72.106. Systems designed to monitor the release of radioactive materials must have means for calibration and testing their operability.

§ 72.128 Criteria for spent fuel, high-level radioactive waste, reactor-related greater than Class C waste, and other radioactive waste storage and handling.

(a) *Spent fuel, high-level radioactive waste, and reactor-related GTCC waste storage and handling systems.* Spent fuel storage, high-level radioactive waste storage, reactor-related GTCC waste storage and other systems that might contain or handle radioactive materials associated with spent fuel, high-level radioactive waste, or reactor-related GTCC waste, must be designed to ensure adequate safety under normal and accident conditions. These systems must be designed with—

(1) A capability to test and monitor components important to safety,

(2) Suitable shielding for radioactive protection under normal and accident conditions,

(3) Confinement structures and systems,

(4) A heat-removal capability having testability and reliability consistent with its importance to safety, and

(5) means to minimize the quantity of radioactive wastes generated.

(b) *Waste treatment.* Radioactive waste treatment facilities must be provided. Provisions must be made for the packing of site-generated low-level wastes in a form suitable for storage onsite awaiting transfer to disposal sites.

[53 FR 31658, Aug. 19, 1988, as amended at 66 FR 51843, Oct. 11, 2001]

§ 72.130 Criteria for decommissioning.

The ISFSI or MRS must be designed for decommissioning. Provisions must be made to facilitate decontamination of structures and equipment, minimize the quantity of radioactive wastes and contaminated equipment, and facilitate the removal of radioactive wastes and contaminated materials at the time the ISFSI or MRS is permanently decommissioned.

Subpart G—Quality Assurance

SOURCE: 64 FR 56122, Oct. 15, 1999, unless otherwise noted.

§ 72.140 Quality assurance requirements.

(a) *Purpose.* This subpart describes quality assurance requirements that apply to design, purchase, fabrication, handling, shipping, storing, cleaning, assembly, inspection, testing, operation, maintenance, repair, modification of structures, systems, and components, and decommissioning that are important to safety. As used in this subpart, ''quality assurance'' comprises all those planned and systematic actions necessary to provide adequate confidence that a structure, system, or component will perform satisfactorily in service. Quality assurance includes quality control, which comprises those quality assurance actions related to control of the physical characteristics and quality of the material or component to predetermined requirements. The certificate holder and applicant for a CoC are responsible for the quality assurance requirements as they apply to the design, fabrication, and testing of a spent fuel storage cask until possession of the spent fuel storage cask is transferred to the licensee. The licensee and the certificate holder are also simultaneously responsible for these quality assurance requirements through the oversight of contractors and subcontractors.

(b) *Establishment of program.* Each licensee, applicant for a license, certificate holder, applicant for a CoC shall establish, maintain, and execute a quality assurance program satisfying each of the applicable criteria of this subpart, and satisfying any specific provisions which are applicable to the licensee's, applicant's for a license, certificate holder's, and applicant's for a CoC activities. The licensee, applicant for a license, certificate holder, and applicant for a CoC shall execute the applicable criteria in a graded approach to an extent that is commensurate with the quality assurance requirements' importance to safety. The quality assurance program must cover the activities identified in this subpart throughout the life of the activity. For licensees, this includes activities from the site selection through decommissioning prior to termination of the license. For certificate holders, this includes activities from development of the spent fuel storage cask design through termination of the CoC.

(c) *Approval of program.* (1) Each licensee, applicant for a license, certificate holder, or applicant for a CoC shall file a description of its quality assurance program, including a discussion of which requirements of this subpart are applicable and how they will be satisfied, in accordance with § 72.4.

(2) Each licensee shall obtain Commission approval of its quality assurance program prior to receipt of spent fuel and/or reactor-related GTCC waste at the ISFSI or spent fuel, high-level radioactive waste, and/or reactor-related GTCC waste at the MRS. Each licensee or applicant for a specific license shall obtain Commission approval of its quality assurance program before commencing fabrication or testing of a spent fuel storage cask.

(3) Each certificate holder or applicant for a CoC shall obtain Commission approval of its quality assurance program before commencing fabrication or testing of a spent fuel storage cask.

(d) *Previously-approved programs.* A quality assurance program previously

approved by the Commission as satisfying the requirements of Appendix B to part 50 of this chapter, subpart H to part 71 of this chapter, or subpart G to this part will be accepted as satisfying the requirements of paragraph (b) of this section, except that a licensee, applicant for a license, certificate holder, and applicant for a CoC who is using an Appendix B or subpart H quality assurance program shall also meet the recordkeeping requirements of § 72.174. In filing the description of the quality assurance program required by paragraph (c) of this section, each licensee, applicant for a license, certificate holder, and applicant for a CoC shall notify the NRC, in accordance with § 72.4, of its intent to apply its previously-approved quality assurance program to ISFSI activities or spent fuel storage cask activities. The notification shall identify the previously-approved quality assurance program by date of submittal to the Commission, docket number, and date of Commission approval.

[53 FR 31658, Aug. 19, 1988, as amended at 65 FR 50617, Aug. 21, 2000; 66 FR 51843, Oct. 11, 2001]

§ 72.142 Quality assurance organization.

(a) The licensee, applicant for a license, certificate holder, and applicant for a CoC shall be responsible for the establishment and execution of the quality assurance program. The licensee and certificate holder may delegate to others, such as contractors, agents, or consultants, the work of establishing and executing the quality assurance program, but the licensee and the certificate holder shall retain responsibility for the program. The licensee, applicant for a license, certificate holder, and applicant for a CoC shall clearly establish and delineate in writing the authority and duties of persons and organizations performing activities affecting the functions of structures, systems, and components which are important to safety. These activities include performing the functions associated with attaining quality objectives and the quality assurance functions.

(b) The quality assurance functions are—

(1) Assuring that an appropriate quality assurance program is established and effectively executed; and

(2) Verifying, by procedures such as checking, auditing, and inspection, that activities affecting the functions that are important to safety have been correctly performed. The persons and organizations performing quality assurance functions shall have sufficient authority and organizational freedom to identify quality problems; to initiate, recommend, or provide solutions; and to verify implementation of solutions.

(c) The persons and organizations performing quality assurance functions shall report to a management level that ensures that the required authority and organizational freedom, including sufficient independence from cost and schedule considerations when these considerations are opposed to safety considerations, are provided. Because of the many variables involved, such as the number of personnel, the type of activity being performed, and the location or locations where activities are performed, the organizational structure for executing the quality assurance program may take various forms, provided that the persons and organizations assigned the quality assurance functions have the required authority and organizational freedom. Irrespective of the organizational structure, the individual(s) assigned the responsibility for assuring effective execution of any portion of the quality assurance program, at any location where activities subject to this section are being performed, must have direct access to the levels of management necessary to perform this function.

§ 72.144 Quality assurance program.

(a) The licensee, applicant for a license, certificate holder, and applicant for a CoC shall establish, at the earliest practicable time consistent with the schedule for accomplishing the activities, a quality assurance program which complies with the requirements of this subpart. The licensee, applicant for a license, certificate holder, and applicant for a CoC shall document the quality assurance program by written procedures or instructions and shall carry out the program in accordance

with these procedures throughout the period during which the ISFSI or MRS is licensed or the spent fuel storage cask is certified. The licensee, applicant for a license, certificate holder, and applicant for a CoC shall identify the structures, systems, and components to be covered by the quality assurance program, the major organizations participating in the program, and the designated functions of these organizations.

(b) The licensee, applicant for a license, certificate holder, and applicant for a CoC, through their quality assurance program(s), shall provide control over activities affecting the quality of the identified structures, systems, and components to an extent commensurate with the importance to safety and, as necessary, to ensure conformance with the approved design of each ISFSI, MRS, or spent fuel storage cask. The licensee, applicant for a license, certificate holder, and applicant for a CoC shall ensure that activities affecting quality are accomplished under suitably controlled conditions. Controlled conditions include the use of appropriate equipment; suitable environmental conditions for accomplishing the activity, such as adequate cleanliness; and assurance that all prerequisites for the given activity have been satisfied. The licensee, applicant for a license, certificate holder, and applicant for a CoC shall take into account the need for special controls, processes, test equipment, tools and skills to attain the required quality and the need for verification of quality by inspection and test.

(c) The licensee, applicant for a license, certificate holder, and applicant for a CoC shall base the requirements and procedures of their quality assurance program(s) on the following considerations concerning the complexity and proposed use of the structures, systems, or components:

(1) The impact of malfunction or failure of the item on safety;

(2) The design and fabrication complexity or uniqueness of the item;

(3) The need for special controls and surveillance over processes and equipment;

(4) The degree to which functional compliance can be demonstrated by inspection or test; and

(5) The quality history and degree of standardization of the item.

(d) The licensee, applicant for a license, certificate holder, and applicant for a CoC shall provide for indoctrination and training of personnel performing activities affecting quality as necessary to ensure that suitable proficiency is achieved and maintained.

(e) The licensee, applicant for a license, certificate holder, and applicant for a CoC shall review the status and adequacy of the quality assurance program at established intervals. Management of other organizations participating in the quality assurance program must regularly review the status and adequacy of that part of the quality assurance program which they are executing.

§ 72.146 Design control.

(a) The licensee, applicant for a license, certificate holder, and applicant for a CoC shall establish measures to ensure that applicable regulatory requirements and the design basis, as specified in the license or CoC application for those structures, systems, and components to which this section applies, are correctly translated into specifications, drawings, procedures, and instructions. These measures must include provisions to ensure that appropriate quality standards are specified and included in design documents and that deviations from standards are controlled. Measures must be established for the selection and review for suitability of application of materials, parts, equipment, and processes that are essential to the functions of the structures, systems, and components which are important to safety.

(b) The licensee, applicant for a license, certificate holder, and applicant for a CoC shall establish measures for the identification and control of design interfaces and for coordination among participating design organizations. These measures must include the establishment of written procedures among participating design organizations for the review, approval, release, distribution, and revision of documents involving design interfaces. The design

control measures must provide for verifying or checking the adequacy of design by methods such as design reviews, alternate or simplified calculational methods, or by a suitable testing program. For the verifying or checking process, the licensee and certificate holder shall designate individuals or groups other than those who were responsible for the original design, but who may be from the same organization. Where a test program is used to verify the adequacy of a specific design feature in lieu of other verifying or checking processes, the licensee and certificate holder shall include suitable qualification testing of a prototype or sample unit under the most adverse design conditions. The licensee, applicant for a license, certificate holder, and applicant for a CoC shall apply design control measures to items such as the following: criticality physics, radiation, shielding, stress, thermal, hydraulic, and accident analyses; compatibility of materials; accessibility for inservice inspection, maintenance, and repair; features to facilitate decontamination; and delineation of acceptance criteria for inspections and tests.

(c) The licensee, applicant for a license, certificate holder, and applicant for a CoC shall subject design changes, including field changes, to design control measures commensurate with those applied to the original design. Changes in the conditions specified in the license or CoC require prior NRC approval.

§ 72.148 Procurement document control.

The licensee, applicant for a license, certificate holder, and applicant for a CoC shall establish measures to assure that applicable regulatory requirements, design bases, and other requirements which are necessary to assure adequate quality are included or referenced in the documents for procurement of material, equipment, and services, whether purchased by the licensee, certificate holder, or by their contractors and subcontractors. To the extent necessary, the licensee, applicant for a license, certificate holder, and applicant for a CoC, shall require contractors or subcontractors to provide a quality assurance program consistent with the applicable provisions of this subpart.

§ 72.150 Instructions, procedures, and drawings.

The licensee, applicant for a license, certificate holder, and applicant for a CoC shall prescribe activities affecting quality by documented instructions, procedures, or drawings of a type appropriate to the circumstances and shall require that these instructions, procedures, and drawings be followed. The instructions, procedures, and drawings must include appropriate quantitative or qualitative acceptance criteria for determining that important activities have been satisfactorily accomplished.

§ 72.152 Document control.

The licensee, applicant for a license, certificate holder, and applicant for a CoC shall establish measures to control the issuance of documents such as instructions, procedures, and drawings, including changes, which prescribe all activities affecting quality. These measures must assure that documents, including changes, are reviewed for adequacy, approved for release by authorized personnel, and distributed and used at the location where the prescribed activity is performed. These measures must ensure that changes to documents are reviewed and approved.

§ 72.154 Control of purchased material, equipment, and services.

(a) The licensee, applicant for a license, certificate holder, and applicant for a CoC shall establish measures to ensure that purchased material, equipment, and services, whether purchased directly or through contractors and subcontractors, conform to the procurement documents. These measures must include provisions, as appropriate, for source evaluation and selection, objective evidence of quality furnished by the contractor or subcontractor, inspection at the contractor or subcontractor source, and examination of products upon delivery.

(b) The licensee, applicant for a license, certificate holder, and applicant for a CoC shall have available documentary evidence that material and

equipment conform to the procurement specifications prior to installation or use of the material and equipment. The licensee and certificate holder shall retain or have available this documentary evidence for the life of the ISFSI, MRS, or spent fuel storage cask. The licensee and certificate holder shall ensure that the evidence is sufficient to identify the specific requirements met by the purchased material and equipment.

(c) The licensee, applicant for a license, certificate holder, and applicant for a CoC, or a designee of either, shall assess the effectiveness of the control of quality by contractors and subcontractors at intervals consistent with the importance, complexity, and quantity of the product or services.

§ 72.156 Identification and control of materials, parts, and components.

The licensee, applicant for a license, certificate holder, and applicant for a CoC shall establish measures for the identification and control of materials, parts, and components. These measures must ensure that identification of the item is maintained by heat number, part number, serial number, or other appropriate means, either on the item or on records traceable to the item as required, throughout fabrication, installation, and use of the item. These identification and control measures must be designed to prevent the use of incorrect or defective materials, parts, and components.

§ 72.158 Control of special processes.

The licensee, applicant for a license, certificate holder, and applicant for a CoC shall establish measures to ensure that special processes, including welding, heat treating, and nondestructive testing, are controlled and accomplished by qualified personnel using qualified procedures in accordance with applicable codes, standards, specifications, criteria, and other special requirements.

§ 72.160 Licensee and certificate holder inspection.

The licensee, applicant for a license, certificate holder, and applicant for a CoC shall establish and execute a program for inspection of activities affecting quality by or for the organization performing the activity to verify conformance with the documented instructions, procedures, and drawings for accomplishing the activity. The inspection must be performed by individuals other than those who performed the activity being inspected. Examinations, measurements, or tests of material or products processed must be performed for each work operation where necessary to assure quality. If direct inspection of processed material or products cannot be carried out, indirect control by monitoring processing methods, equipment, and personnel must be provided. Both inspection and process monitoring must be provided when quality control is inadequate without both. If mandatory inspection hold points that require witnessing or inspecting by the licensee's or certificate holder's designated representative, and beyond which work should not proceed without the consent of its designated representative, are required, the specific hold points must be indicated in appropriate documents.

§ 72.162 Test control.

The licensee, applicant for a license, certificate holder, and applicant for a CoC shall establish a test program to ensure that all testing, required to demonstrate that the structures, systems, and components will perform satisfactorily in service, is identified and performed in accordance with written test procedures that incorporate the requirements of this part and the requirements and acceptance limits contained in the ISFSI, MRS, or spent fuel storage cask license or CoC. The test procedures must include provisions to ensure that all prerequisites for the given test are met, that adequate test instrumentation is available and used, and that the test is performed under suitable environmental conditions. The licensee, applicant for a license, certificate holder, and applicant for a CoC shall document and evaluate the test results to ensure that test requirements have been satisfied.

§ 72.164 Control of measuring and test equipment.

The licensee, applicant for a license, certificate holder, and applicant for a

CoC shall establish measures to ensure that tools, gauges, instruments, and other measuring and testing devices used in activities affecting quality are properly controlled, calibrated, and adjusted at specified periods to maintain accuracy within necessary limits.

§ 72.166 Handling, storage, and shipping control.

The licensee, applicant for a license, certificate holder, and applicant for a CoC shall establish measures to control, in accordance with work and inspection instructions, the handling, storage, shipping, cleaning, and preservation of materials and equipment to prevent damage or deterioration. When necessary for particular products, special protective environments, such as inert gas atmosphere, and specific moisture content and temperature levels must be specified and provided.

§ 72.168 Inspection, test, and operating status.

(a) The licensee, applicant for a license, certificate holder, and applicant for a CoC shall establish measures to indicate, by the use of markings such as stamps, tags, labels, routing cards, or other suitable means, the status of inspections and tests performed upon individual items of the ISFSI, MRS, or spent fuel storage cask. These measures must provide for the identification of items which have satisfactorily passed required inspections and tests where necessary to preclude inadvertent bypassing of the inspections and tests.

(b) The licensee shall establish measures to identify the operating status of structures, systems, and components of the ISFSI or MRS, such as tagging valves and switches, to prevent inadvertent operation.

§ 72.170 Nonconforming materials, parts, or components.

The licensee, applicant for a license, certificate holder, and applicant for a CoC shall establish measures to control materials, parts, or components that do not conform to their requirements in order to prevent their inadvertent use or installation. These measures must include, as appropriate, procedures for identification, documentation, segregation, disposition, and notification to affected organizations. Nonconforming items must be reviewed and accepted, rejected, repaired, or reworked in accordance with documented procedures.

§ 72.172 Corrective action.

The licensee, applicant for a license, certificate holder, and applicant for a CoC shall establish measures to ensure that conditions adverse to quality, such as failures, malfunctions, deficiencies, deviations, defective material and equipment, and nonconformances, are promptly identified and corrected. In the case of a significant condition identified as adverse to quality, the measures must ensure that the cause of the condition is determined and corrective action is taken to preclude repetition. The identification of the significant condition adverse to quality, the cause of the condition, and the corrective action taken must be documented and reported to appropriate levels of management.

§ 72.174 Quality assurance records.

The licensee, applicant for a license, certificate holder, and applicant for a CoC shall maintain sufficient records to furnish evidence of activities affecting quality. The records must include the following: design records, records of use, and the results of reviews, inspections, tests, audits, monitoring of work performance, and materials analyses. The records must include closely related data such as qualifications of personnel, procedures, and equipment. Inspection and test records must, at a minimum, identify the inspector or data recorder, the type of observation, the results, the acceptability, and the action taken in connection with any noted deficiencies. Records must be identifiable and retrievable. Records pertaining to the design, fabrication, erection, testing, maintenance, and use of structures, systems, and components important to safety must be maintained by or under the control of the licensee or certificate holder until the NRC terminates the license or CoC.

§ 72.176 Audits.

The licensee, applicant for a license, certificate holder, and applicant for a

CoC shall carry out a comprehensive system of planned and periodic audits to verify compliance with all aspects of the quality assurance program and to determine the effectiveness of the program. The audits must be performed in accordance with written procedures or checklists by appropriately trained personnel not having direct responsibilities in the areas being audited. Audited results must be documented and reviewed by management having responsibility in the area audited. Follow-up action, including reaudit of deficient areas, must be taken where indicated.

Subpart H—Physical Protection

§ 72.180 Physical protection plan.

The licensee shall establish, maintain, and follow a detailed plan for physical protection as described in § 73.51 of this chapter. The licensee shall retain a copy of the current plan as a record until the Commission terminates the license for which the procedures were developed and, if any portion of the plan is superseded, retain the superseded material for 3 years after each change or until termination of the license. The plan must describe how the applicant will meet the requirements of § 73.51 of this chapter and provide physical protection during onsite transportation to and from the proposed ISFSI or MRS and include within the plan the design for physical protection, the licensee's safeguards contingency plan, and the security organization personnel training and qualification plan. The plan must list tests, inspections, audits, and other means to be used to demonstrate compliance with such requirements.

[63 FR 26961, May 15, 1998]

§ 72.182 Design for physical protection.

The design for physical protection must show the site layout and the design features provided to protect the ISFSI or MRS from sabotage. It must include:

(a) The design criteria for the physical protection of the proposed ISFSI or MRS;

(b) The design bases and the relation of the design bases to the design criteria submitted pursuant to paragraph (a) of this section; and

(c) Information relative to materials of construction, equipment, general arrangement, and proposed quality assurance program sufficient to provide reasonable assurance that the final security system will conform to the design bases for the principal design criteria submitted pursuant to paragraph (a) of this section.

§ 72.184 Safeguards contingency plan.

(a) The requirements of the licensee's safeguards contingency plan for responding to threats and radiological sabotage must be as defined in appendix C to part 73 of this chapter. This plan must include Background, Generic Planning Base, Licensee Planning Base, and Responsibility Matrix, the first four categories of information relating to nuclear facilities licensed under part 50 of this chapter. (The fifth and last category of information, Procedures, does not have to be submitted for approval.)

(b) The licensee shall prepare and maintain safeguards contingency plan procedures in accordance with appendix C to 10 CFR part 73 for effecting the actions and decisions contained in the Responsibility Matrix of the licensee's safeguards contingency plan. The licensee shall retain a copy of the current procedures as a record until the Commission terminates the license for which the procedures were developed and, if any portion of the procedures is superseded, retain the superseded material for three years after each change.

[53 FR 31658, Aug. 19, 1988, as amended at 57 FR 33429, July 29, 1992]

§ 72.186 Change to physical security and safeguards contingency plans.

(a) The licensee shall make no change that would decrease the safeguards effectiveness of the physical security plan, guard training plan or the first four categories of information (Background, Generic Planning Base, Licensee Planning Base, and Responsibility Matrix) contained in the licensee safeguards contingency plan without prior approval of the Commission. A licensee desiring to make a change must

submit an application for a license amendment pursuant to § 72.56.

(b) The licensee may, without prior Commission approval, make changes to the physical security plan, guard training plan, or the safeguards contingency plan, if the changes do not decrease the safeguards effectiveness of these plans. The licensee shall maintain records of changes to any such plan made without prior approval for a period of three years from the date of the change, and shall, within two months after the change is made, submit a report addressed to Director, Office of Nuclear Material Safety and Safeguards, U.S. Nuclear Regulatory Commission, in accordance with § 72.4, containing a description of each change. A copy of the report must be sent to the Regional Administrator of the appropriate NRC Regional Office specified in appendix A to part 73 of this chapter.

[53 FR 31658, Aug. 19, 1988, as amended at 67 FR 3586, Jan. 25, 2002; 68 FR 58819, Oct. 10, 2003; 75 FR 73945, Nov. 30, 2010; 79 FR 75741, Dec. 19, 2014; 83 FR 58723, Nov. 21, 2018]

Subpart I—Training and Certification of Personnel

§ 72.190 Operator requirements.

Operation of equipment and controls that have been identified as important to safety in the Safety Analysis Report and in the license must be limited to trained and certified personnel or be under the direct visual supervision of an individual with training and certification in the operation. Supervisory personnel who personally direct the operation of equipment and controls that are important to safety must also be certified in such operations.

§ 72.192 Operator training and certification program.

The applicant for a license under this part shall establish a program for training, proficiency testing, and certification of ISFSI or MRS personnel. This program must be submitted to the Commission for approval with the license application.

§ 72.194 Physical requirements.

The physical condition and the general health of personnel certified for the operation of equipment and controls that are important to safety must not be such as might cause operational errors that could endanger other in-plant personnel or the public health and safety. Any condition that might cause impaired judgment or motor coordination must be considered in the selection of personnel for activities that are important to safety. These conditions need not categorically disqualify a person, if appropriate provisions are made to accommodate such defect.

Subpart J—Provision of MRS Information to State Governments and Indian Tribes

§ 72.200 Provision of MRS information.

(a) The Director, Office of Nuclear Material Safety and Safeguards, or the Director's designee shall provide to the Governor and legislature of any State in which an MRS authorized under the Nuclear Waste Policy Act of 1982, as amended, is or may be located, to the Governors of any contiguous States, to each affected unit of local government and to the governing body of any affected Indian Tribe, timely and complete information regarding determinations or plans made by the Commission with respect to siting, development, design, licensing, construction, operation, regulation or decommissioning of such monitored retrievable storage facility.

(b) Notwithstanding paragraph (a) of this section, the Director or the Director's designee is not required to distribute any document to any entity if, with respect to such document, that entity or its counsel is included on a service list prepared pursuant to part 2 of this chapter.

(c) Copies of all communications by the Director or the Director's designee under this section must be made available at the NRC Web site, *http://www.nrc.gov*, and/or at the NRC Public Document Room, and must be furnished to DOE.

[53 FR 31658, Aug. 19, 1988, as amended at 64 FR 48954, Sept. 9, 1999]

§ 72.202 Participation in license reviews.

States, local governmental bodies and affected, Federally-recognized Indian Tribes may participate in license reviews as provided in Subpart C of Part 2 of this chapter.

[69 FR 2280, Jan. 14, 2004]

§ 72.204 Notice to States.

If the Governor and legislature of a State have jointly designated on their behalf a single person or entity to receive notice and information from the Commission under this part, the Commission will provide such notice and information to the jointly designated person or entity instead of the Governor and the legislature separately.

§ 72.206 Representation.

Any person who acts under this subpart as a representative for a State (or for the Governor or legislature thereof) or for an affected Indian Tribe shall include in the request or other submission, or at the request of the Commission, a statement of the basis of his or her authority to act in such representative capacity.

Subpart K—General License for Storage of Spent Fuel at Power Reactor Sites

SOURCE: 55 FR 29191, July 18, 1990, unless otherwise noted.

§ 72.210 General license issued.

A general license is hereby issued for the storage of spent fuel in an independent spent fuel storage installation at power reactor sites to persons authorized to possess or operate nuclear power reactors under 10 CFR part 50 or 10 CFR part 52.

[72 FR 49561, Aug. 28, 2007]

§ 72.212 Conditions of general license issued under § 72.210.

(a)(1) The general license is limited to that spent fuel which the general licensee is authorized to possess at the site under the specific license for the site.

(2) This general license is limited to storage of spent fuel in casks approved under the provisions of this part.

(3) The general license for the storage of spent fuel in each cask fabricated under a Certificate of Compliance shall commence upon the date that the particular cask is first used by the general licensee to store spent fuel, shall continue through any renewals of the Certificate of Compliance, unless otherwise specified in the Certificate of Compliance, and shall terminate when the cask's Certificate of Compliance expires. For any cask placed into service during the final renewal term of a Certificate of Compliance, or during the term of a Certificate of Compliance that was not renewed, the general license for that cask shall terminate after a storage period not to exceed the length of the term certified by the cask's Certificate of Compliance. Upon expiration of the general license, all casks subject to that general license must be removed from service.

(b) The general licensee must:

(1) Notify the Nuclear Regulatory Commission using instructions in § 72.4 at least 90 days before first storage of spent fuel under this general license. The notice may be in the form of a letter, but must contain the licensee's name, address, reactor license and docket numbers, and the name and means of contacting a person responsible for providing additional information concerning spent fuel under this general license. A copy of the submittal must be sent to the administrator of the appropriate Nuclear Regulatory Commission regional office listed in appendix D to part 20 of this chapter.

(2) Register use of each cask with the Nuclear Regulatory Commission no later than 30 days after using that cask to store spent fuel. This registration may be accomplished by submitting a letter using instructions in § 72.4 containing the following information: the licensee's name and address, the licensee's reactor license and docket numbers, the name and title of a person responsible for providing additional information concerning spent fuel storage under this general license, the cask

certificate number, the CoC amendment number to which the cask conforms, unless loaded under the initial certificate, cask model number, and the cask identification number. A copy of each submittal must be sent to the administrator of the appropriate Nuclear Regulatory Commission regional office listed in appendix D to part 20 of this chapter.

(3) Ensure that each cask used by the general licensee conforms to the terms, conditions, and specifications of a CoC or an amended CoC listed in § 72.214.

(4) In applying the changes authorized by an amended CoC to a cask loaded under the initial CoC or an earlier amended CoC, register each such cask with the Nuclear Regulatory Commission no later than 30 days after applying the changes authorized by the amended CoC. This registration may be accomplished by submitting a letter using instructions in § 72.4 containing the following information: the licensee's name and address, the licensee's reactor license and docket numbers, the name and title of a person responsible for providing additional information concerning spent fuel storage under this general license, the cask certificate number, the CoC amendment number to which the cask conforms, cask model number, and the cask identification number. A copy of each submittal must be sent to the administrator of the appropriate Nuclear Regulatory Commission regional office listed in appendix D to part 20 of this chapter.

(5) Perform written evaluations, before use and before applying the changes authorized by an amended CoC to a cask loaded under the initial CoC or an earlier amended CoC, which establish that:

(i) The cask, once loaded with spent fuel or once the changes authorized by an amended CoC have been applied, will conform to the terms, conditions, and specifications of a CoC or an amended CoC listed in § 72.214;

(ii) Cask storage pads and areas have been designed to adequately support the static and dynamic loads of the stored casks, considering potential amplification of earthquakes through soil-structure interaction, and soil liquefaction potential or other soil instability due to vibratory ground motion; and

(iii) The requirements of § 72.104 have been met. A copy of this record shall be retained until spent fuel is no longer stored under the general license issued under § 72.210.

(6) Review the Safety Analysis Report referenced in the CoC or amended CoC and the related NRC Safety Evaluation Report, prior to use of the general license, to determine whether or not the reactor site parameters, including analyses of earthquake intensity and tornado missiles, are enveloped by the cask design bases considered in these reports. The results of this review must be documented in the evaluation made in paragraph (b)(5) of this section.

(7) Evaluate any changes to the written evaluations required by paragraphs (b)(5) and (b)(6) of this section using the requirements of § 72.48(c). A copy of this record shall be retained until spent fuel is no longer stored under the general license issued under § 72.210.

(8) Before use of the general license, determine whether activities related to storage of spent fuel under this general license involve a change in the facility Technical Specifications or require a license amendment for the facility pursuant to § 50.59(c) of this chapter. Results of this determination must be documented in the evaluations made in paragraph (b)(5) of this section.

(9) Protect the spent fuel against the design basis threat of radiological sabotage in accordance with the same provisions and requirements as are set forth in the licensee's physical security plan pursuant to § 73.55 of this chapter with the following additional conditions and exceptions:

(i) The physical security organization and program for the facility must be modified as necessary to assure that activities conducted under this general license do not decrease the effectiveness of the protection of vital equipment in accordance with § 73.55 of this chapter;

(ii) Storage of spent fuel must be within a protected area, in accordance with § 73.55(e) of this chapter, but need not be within a separate vital area. Existing protected areas may be expanded or new protected areas added for the

purpose of storage of spent fuel in accordance with this general license;

(iii) For the purpose of this general license, personnel searches required by § 73.55(h) of this chapter before admission to a new protected area may be performed by physical pat-down searches of persons in lieu of firearms and explosives detection equipment;

(iv) The observational capability required by § 73.55(i)(3) of this chapter as applied to a new protected area may be provided by a guard or watchman on patrol in lieu of video surveillance technology;

(v) For the purpose of this general license, the licensee is exempt from requirements to interdict and neutralize threats in § 73.55 of this chapter; and

(vi) Each general licensee that receives and possesses power reactor spent fuel and other radioactive materials associated with spent fuel storage shall protect Safeguards Information against unauthorized disclosure in accordance with the requirements of § 73.21 and the requirements of § 73.22 or § 73.23 of this chapter, as applicable.

(10) Review the reactor emergency plan, quality assurance program, training program, and radiation protection program to determine if their effectiveness is decreased and, if so, prepare the necessary changes and seek and obtain the necessary approvals.

(11) Maintain a copy of the CoC and, for those casks to which the licensee has applied the changes of an amended CoC, the amended CoC, and the documents referenced in such Certificates, for each cask model used for storage of spent fuel, until use of the cask model is discontinued. The licensee shall comply with the terms, conditions, and specifications of the CoC and, for those casks to which the licensee has applied the changes of an amended CoC, the terms, conditions, and specifications of the amended CoC, including but not limited to, the requirements of any AMP put into effect as a condition of the NRC approval of a CoC renewal application in accordance with § 72.240.

(12) Accurately maintain the record provided by the CoC holder for each cask that shows, in addition to the information provided by the CoC holder, the following:

(i) The name and address of the CoC holder or lessor;

(ii) The listing of spent fuel stored in the cask; and

(iii) Any maintenance performed on the cask.

(13) Conduct activities related to storage of spent fuel under this general license only in accordance with written procedures.

(14) Make records and casks available to the Commission for inspection.

(c) The record described in paragraph (b)(12) of this section must include sufficient information to furnish documentary evidence that any testing and maintenance of the cask has been conducted under an NRC-approved quality assurance program.

(d) In the event that a cask is sold, leased, loaned, or otherwise transferred to another registered user, the record described in paragraph (b)(12) of this section must also be transferred to and must be accurately maintained by the new registered user. This record must be maintained by the current cask user during the period that the cask is used for storage of spent fuel and retained by the last user until decommissioning of the cask is complete.

(e) Fees for inspections related to spent fuel storage under this general license are those shown in § 170.31 of this chapter.

[55 FR 29191, July 18, 1990, as amended at 64 FR 53616, Oct. 4, 1999; 68 FR 54160, Sept. 16, 2003; 73 FR 63573, Oct. 24, 2008; 74 FR 13970, Mar. 27, 2009; 76 FR 8890, Feb. 16, 2011]

§ 72.214 List of approved spent fuel storage casks.

The following casks are approved for storage of spent fuel under the conditions specified in their Certificates of Compliance.

Certificate Number: 1004.

Initial Certificate Effective Date: January 23, 1995, superseded by Initial Certificate, Revision 1, on April 25, 2017, superseded by Renewed Initial Certificate, Revision 1, on December 11, 2017.

Renewed Initial Certificate, Revision 1, Effective Date: December 11, 2017.

Amendment Number 1 Effective Date: April 27, 2000, superseded by Amendment Number 1, Revision 1, on April 25, 2017, superseded by Renewed Amendment Number 1, Revision 1, on December 11, 2017.

Renewed Amendment Number 1, Revision 1, Effective Date: December 11, 2017.

Amendment Number 2 Effective Date: September 5, 2000, superseded by Amendment Number 2, Revision 1, on April 25, 2017, superseded by Renewed Amendment Number 2, Revision 1, on December 11, 2017.

Renewed Amendment Number 2, Revision 1, Effective Date: December 11, 2017.

Amendment Number 3 Effective Date: September 12, 2001, superseded by Amendment Number 3, Revision 1, on April 25, 2017, superseded by Renewed Amendment Number 3, Revision 1, on December 11, 2017.

Renewed Amendment Number 3, Revision 1, Effective Date: December 11, 2017.

Amendment Number 4 Effective Date: February 12, 2002, superseded by Amendment Number 4, Revision 1, on April 25, 2017, superseded by Renewed Amendment Number 4, Revision 1, on December 11, 2017.

Renewed Amendment Number 4, Revision 1, Effective Date: December 11, 2017.

Amendment Number 5 Effective Date: January 7, 2004, superseded by Amendment Number 5, Revision 1, on April 25, 2017, superseded by Renewed Amendment Number 5, Revision 1, on December 11, 2017.

Renewed Amendment Number 5, Revision 1, Effective Date: December 11, 2017.

Amendment Number 6 Effective Date: December 22, 2003, superseded by Amendment Number 6, Revision 1, on April 25, 2017, superseded by Renewed Amendment Number 6, Revision 1, on December 11, 2017.

Renewed Amendment Number 6, Revision 1, Effective Date: December 11, 2017.

Amendment Number 7 Effective Date: March 2, 2004, superseded by Amendment Number 7, Revision 1, on April 25, 2017, superseded by Renewed Amendment Number 7, Revision 1, on December 11, 2017.

Renewed Amendment Number 7, Revision 1, Effective Date: December 11, 2017.

Amendment Number 8 Effective Date: December 5, 2005, superseded by Amendment Number 8, Revision 1, on April 25, 2017, superseded by Renewed Amendment Number 8, Revision 1, on December 11, 2017.

Renewed Amendment Number 8, Revision 1, Effective Date: December 11, 2017.

Amendment Number 9 Effective Date: April 17, 2007, superseded by Amendment Number 9, Revision 1, on April 25, 2017, superseded by Renewed Amendment Number 9, Revision 1, on December 11, 2017.

Renewed Amendment Number 9, Revision 1, Effective Date: December 11, 2017.

Amendment Number 10 Effective Date: August 24, 2009, superseded by Amendment Number 10, Revision 1, on April 25, 2017, superseded by Renewed Amendment Number 10, Revision 1, on December 11, 2017.

Renewed Amendment Number 10, Revision 1, Effective Date: December 11, 2017.

Amendment Number 11 Effective Date: January 7, 2014, superseded by Amendment Number 11, Revision 1, on April 25, 2017, superseded by Renewed Amendment Number 11, Revision 1, on December 11, 2017.

Renewed Amendment Number 11, Revision 1, Effective Date: December 11, 2017, as corrected (ADAMS Accession No. ML18018A043).

Amendment Number 12 Effective Date: Amendment not issued by the NRC.

Amendment Number 13 Effective Date: May 24, 2014, superseded by Amendment Number 13, Revision 1, on April 25, 2017, superseded by Renewed Amendment Number 13, Revision 1, on December 11, 2017.

Renewed Amendment Number 13, Revision 1, Effective Date: December 11, 2017, as corrected (ADAMS Accession No. ML18018A100).

Amendment Number 14 Effective Date: April 25, 2017, superseded by Renewed Amendment Number 14, on December 11, 2017.

Renewed Amendment Number 14 Effective Date: December 11, 2017.

Renewed Amendment Number 15 Effective Date: January 22, 2019.

Renewed Amendment Number 16 Effective Date: September 14, 2020.

Renewed Amendment Number 17 Effective Date: June 7, 2021.

SAR Submitted by: TN Americas LLC.

SAR Title: Final Safety Analysis Report for the Standardized NUHOMS® Horizontal Modular Storage System for Irradiated Nuclear Fuel.

Docket Number: 72–1004.

Certificate Expiration Date: January 23, 2015.

Renewed Certificate Expiration Date: January 23, 2055.

Model Number: NUHOMS®–24P, –24PHB, –24PTH, –32PT, –32PTH1, –37PTH, –52B, –61BT, –61BTH, and –69BTH.

Certificate Number: 1007.

Initial Certificate Effective Date: May 7, 1993, superseded by Renewed Initial Certificate, on September 20, 2017.

Renewed Initial Certificate Effective Date: September 20, 2017.

Amendment Number 1 Effective Date: May 30, 2000, superseded by Renewed Amendment Number 1, on September 20, 2017.

Renewed Amendment Number 1 Effective Date: September 20, 2017.

Amendment Number 2 Effective Date: September 5, 2000, superseded by Renewed Amendment Number 2, on September 20, 2017.

Renewed Amendment Number 2 Effective Date: September 20, 2017.

Amendment Number 3 Effective Date: May 21, 2001, superseded by Renewed Amendment Number 3, on September 20, 2017.

Renewed Amendment Number 3 Effective Date: September 20, 2017.

Amendment Number 4 Effective Date: February 3, 2003, superseded by Renewed Amendment Number 4, on September 20, 2017.

Renewed Amendment Number 4 Effective Date: September 20, 2017.

Amendment Number 5 Effective Date: September 13, 2005, superseded by Renewed Amendment Number 5, on September 20, 2017.

Renewed Amendment Number 5 Effective Date: September 20, 2017.

Amendment Number 6 Effective Date: June 5, 2006, superseded by Renewed Amendment Number 6, on September 20, 2017.

Renewed Amendment Number 6 Effective Date: September 20, 2017.

SAR Submitted by: EnergySolutions™ Corporation.

SAR Title: Final Safety Analysis Report for the VSC–24 Ventilated Storage Cask System.

Docket Number: 72–1007.

Renewed Certificate Expiration Date: May 7, 2053.

Model Number: VSC–24.

Certificate Number: 1008.

Initial Certificate Effective Date: October 4, 1999, superseded by Renewed Initial Certificate, on December 15, 2021.

Amendment Number 1 Effective Date: December 26, 2000, superseded by Renewed Amendment Number 1, on December 15, 2021.

Amendment Number 2 Effective Date: May 29, 2001, superseded by Renewed Amendment Number 2, on December 15, 2021.

Amendment Number 3 Effective Date: November 5, 2019, superseded by Renewed Amendment Number 3, on December 15, 2021.

SAR Submitted by: Holtec International.

SAR Title: Final Safety Analysis Report for the HI–STAR 100 Cask System.

Docket Number: 72–1008.

Certificate Expiration Date: October 4, 2019.

Renewed Certificate Expiration Date: October 4, 2059.

Model Number: HI–STAR 100 (MPC–24, MPC–32, MPC–68, MPC–68F).

Certificate Number: 1014.

Initial Certificate Effective Date: May 31, 2000.

Amendment Number 1 Effective Date: July 15, 2002.

Amendment Number 2 Effective Date: June 7, 2005.

Amendment Number 3 Effective Date: May 29, 2007.

Amendment Number 4 Effective Date: January 8, 2008.

Amendment Number 5 Effective Date: July 14, 2008.

Amendment Number 6 Effective Date: August 17, 2009.

Amendment Number 7 Effective Date: December 28, 2009.

Amendment Number 8 Effective Date: May 2, 2012, as corrected on November 16, 2012 (ADAMS Accession No. ML12213A170); superseded by Amendment Number 8, Revision 1, Effective Date: February 16, 2016.

Amendment Number 8, Revision 1, Effective Date: February 16, 2016.

Amendment Number 9 Effective Date: March 11, 2014, superseded by Amendment Number 9, Revision 1, on March 21, 2016.

Amendment Number 9, Revision 1, Effective Date: March 21, 2016, as corrected (ADAMS Accession No. ML17236A451).

Amendment Number 10 Effective Date: May 31, 2016, as corrected (ADAMS Accession No. ML17236A452).

Amendment Number 11 Effective Date: February 25, 2019, as corrected (ADAMS Accession No. ML19343B024).

Amendment Number 12 Effective Date: February 25, 2019, as corrected on May 30, 2019 (ADAMS Accession No. ML19109A111); further corrected December 23, 2019 (ADAMS Accession No. ML19343A908).

Amendment Number 13 Effective Date: May 13, 2019, as corrected on May 30, 2019 (ADAMS Accession No. ML19109A122); further corrected December 23, 2019 (ADAMS Accession No. ML19343B156).

Amendment Number 14 Effective Date: December 17, 2019, as corrected (ADAMS Accession No. ML19343B287).

Amendment Number 15 Effective Date: June 14, 2021.

Safety Analysis Report (SAR) Submitted by: Holtec International.

SAR Title: Final Safety Analysis Report for the HI–STORM 100 Cask System.

Docket Number: 72–1014.

Certificate Expiration Date: May 31, 2020.

Model Number: HI–STORM 100.

Certificate Number: 1015.

Initial Certificate Effective Date: November 20, 2000.

Amendment Number 1 Effective Date: February 20, 2001.

Amendment Number 2 Effective Date: December 31, 2001.

Amendment Number 3 Effective Date: March 31, 2004.

Amendment Number 4 Effective Date: October 11, 2005.

Amendment Number 5 Effective Date: January 12, 2009.

Amendment Number 6 Effective Date: January 7, 2019.

Amendment Number 7 Effective Date: July 29, 2019.

Amendment Number 8 Effective Date: October 19, 2021.

SAR Submitted by: NAC International, Inc.

SAR Title: Final Safety Analysis Report for the NAC–UMS Universal Storage System.

Docket Number: 72–1015.

Certificate Expiration Date: November 20, 2020.

Model Number: NAC–UMS.

Certificate Number: 1021.

Initial Certificate Effective Date: April 19, 2000.
Amendment Number 1 Effective Date: February 20, 2001.
SAR Submitted by: Transnuclear, Inc.
SAR Title: Final Safety Analysis Report for the TN–32 Dry Storage Cask.
Docket Number: 72–1021.
Certificate Expiration Date: April 19, 2020.
Model Number: TN–32, TN–32A, TN–32B.

Certificate Number: 1025.
Initial Certificate Effective Date: April 10, 2000.
Amendment Number 1 Effective Date: November 13, 2001.
Amendment Number 2 Effective Date: May 29, 2002.
Amendment Number 3 Effective Date: October 1, 2003.
Amendment Number 4 Effective Date: October 27, 2004.
Amendment Number 5 Effective Date: July 24, 2007.
Amendment Number 6 Effective Date: October 4, 2010.
Amendment Number 7 Effective Date: March 4, 2019.
Amendment Number 8 Effective Date: March 4, 2019.
SAR Submitted by: NAC International, Inc.
SAR Title: Final Safety Analysis Report for the NAC Multi-Purpose Canister System (NAC–MPC System).
Docket Number: 72–1025.
Certificate Expiration Date: April 10, 2020.
Model Number: NAC–MPC.

Certificate Number: 1026.
Initial Certificate Effective Date: February 15, 2001.
Amendment Number 1 Effective Date: May 14, 2001.
Amendment Number 2 Effective Date: January 28, 2002.
Amendment Number 3 Effective Date: May 7, 2003.
Amendment Number 4 Effective Date: July 3, 2006.
SAR Submitted by: BNG Fuel Solutions Corporation.
SAR Title: Final Safety Analysis Report for the FuelSolutions™ Spent Fuel Management System.
Docket Number: 72–1026.
Certificate Expiration Date: February 15, 2021.
Model Number: WSNF–220, WSNF–221, and WSNF–223 systems; W–150 storage cask; W–100 transfer cask; and the W–21 and W–74 canisters.

Certificate Number: 1027.
Initial Certificate Effective Date: May 30, 2000.
Amendment Number 1 Effective Date: October 30, 2007.
SAR Submitted by: Transnuclear, Inc.
SAR Title: Final Safety Analysis Report for the TN–68 Dry Storage Cask.
Docket Number: 72–1027.
Certificate Expiration Date: May 28, 2020.
Model Number: TN–68.

Certificate Number: 1029.
Initial Certificate Effective Date: February 5, 2003, superseded by Renewed Initial.
Certificate Effective Date: October 27, 2021.
Amendment Number 1 Effective Date: May 16, 2005, superseded by Renewed.
Amendment Number 1 Effective Date: October 27, 2021.
Amendment Number 2 Effective Date: Amendment not issued by the NRC.
Amendment Number 3 Effective Date: February 23, 2015, superseded by Renewed.
Amendment Number 3 Effective Date: October 27, 2021.
Amendment Number 4 Effective Date: March 12, 2019, superseded by Renewed.
Amendment Number 4 Effective Date: October 27, 2021.
SAR Submitted by: Transnuclear, Inc., now TN Americas, LLC.
Renewal SAR Submitted by: TN Americas, LLC.
SAR Title: Final Safety Analysis Report for the Standardized Advanced NUHOMS® Horizontal Modular Storage System for Irradiated Nuclear Fuel.
Docket Number: 72–1029.
Certificate Expiration Date: February 5, 2023.
Renewed Certificate Expiration Date: February 5, 2063.
Model Number: Standardized Advanced NUHOMS®–24PT1, –24PT4, and –32PTH2.

Certificate Number: 1030.
Initial Certificate Effective Date: January 10, 2007.
Amendment Number 1 Effective Date: March 29, 2011.
Amendment Number 2 Effective Date: October 14, 2014.
SAR Submitted by: Transnuclear, Inc.
SAR Title: Final Safety Analysis Report for the NUHOMS® HD Horizontal Modular Storage System for Irradiated Nuclear Fuel.
Docket Number: 72–1030.
Certificate Expiration Date: January 10, 2027.
Model Number: NUHOMS® HD–32PTH.

Certificate Number: 1031.
Initial Certificate Effective Date: February 4, 2009, superseded by Initial Certificate, Revision 1, on February 1, 2016.
Initial Certificate, Revision 1, Effective Date: February 1, 2016.
Amendment Number 1 Effective Date: August 30, 2010, superseded by Amendment Number 1, Revision 1, on February 1, 2016.
Amendment Number 1, Revision 1, Effective Date: February 1, 2016.

Amendment Number 2 Effective Date: January 30, 2012, superseded by Amendment Number 2, Revision 1, on February 1, 2016.
Amendment Number 2, Revision 1, Effective Date: February 1, 2016.
Amendment Number 3 Effective Date: July 25, 2013, superseded by Amendment Number 3, Revision 1, on February 1, 2016.
Amendment Number 3, Revision 1, Effective Date: February 1, 2016.
Amendment Number 4 Effective Date: April 14, 2015.
Amendment Number 5 Effective Date: June 29, 2015.
Amendment Number 6 Effective Date: December 21, 2016.
Amendment Number 7 Effective Date: August 21, 2017, as corrected (ADAMS Accession No. ML19045A346).
Amendment Number 8, Effective Date: March 24, 2020.
Amendment Number 9, Effective Date: December 7, 2020.
SAR Submitted by: NAC International, Inc.
SAR Title: Final Safety Analysis Report for the MAGNASTOR® System.
Docket Number: 72–1031.
Certificate Expiration Date: February 4, 2029.
Model Number: MAGNASTOR®.

Certificate Number: 1032.
Initial Certificate Effective Date: June 13, 2011, superseded by Amendment Number 0, Revision 1, on April 25, 2016.
Amendment Number 0, Revision 1, Effective Date: April 25, 2016.
Amendment Number 1 Effective Date: December 17, 2014, superseded by Amendment Number 1, Revision 1, on June 2, 2015.
Amendment Number 1, Revision 1, Effective Date: June 2, 2015.
Amendment Number 2 Effective Date: November 7, 2016.
Amendment Number 3 Effective Date: September 11, 2017.
Amendment Number 4 Effective Date: July 14, 2020.
Amendment Number 5 Effective Date: July 27, 2020.
SAR Submitted by: Holtec International, Inc.
SAR Title: Final Safety Analysis Report for the Holtec International HI–STORM FW System.
Docket Number: 72–1032.
Certificate Expiration Date: June 12, 2031.
Model Number: HI–STORM FW MPC–37, MPC–89.

Certificate Number: 1040.
Initial Certificate Effective Date: April 6, 2015.
Amendment Number 1 Effective Date: September 8, 2015.
Amendment Number 2 Effective Date: January 9, 2017.
Amendment Number 3 [Reserved]
Amendment Number 4 Effective Date: January 25, 2021.
SAR Submitted by: Holtec International, Inc.
SAR Title: Final Safety Analysis Report for the Holtec International HI–STORM UMAX Canister Storage System.
Docket Number: 72–1040.
Certificate Expiration Date: April 6, 2035.
Model Number: MPC–37, MPC–89.

Certificate Number: 1042.
Initial Certificate Effective Date: June 7, 2017
Amendment Number 1 Effective Date: June 17, 2020.
Amendment Number 2 Effective Date: October 26, 2021.
SAR Submitted by: TN Americas LLC.
SAR Title: Final Safety Analysis Report for the NUHOMS® EOS Dry Spent Fuel Storage System.
Docket Number: 72–1042.
Certificate Expiration Date: June 7, 2037.
Model Number: EOS–37PTH, EOS–89BTH, 61BTH Type 2.

[55 FR 29191, July 18, 1990]

EDITORIAL NOTE: For FEDERAL REGISTER citations affecting § 72.214, see the List of CFR Sections Affected, which appears in the Finding Aids section of the printed volume and at *www.govinfo.gov*.

EFFECTIVE DATE NOTE 1: At 86 FR 61053, Nov. 5, 2021, § 72.214 was amended by revising Certificate of Compliance No. 1021, effective Jan. 19, 2022. For the convenience of the user, the revised text is set forth as follows:

§ 72.214 List of approved spent fuel storage casks.

* * * * *

Certificate Number: 1021.
Initial Certificate Effective Date: April 19, 2000, superseded by Renewed Initial Certificate on January 19, 2022.
Amendment Number 1 Effective Date: February 20, 2001, superseded by Renewed Amendment Number 1 on January 19, 2022.
SAR Submitted by: Transnuclear, Inc., now TN Americas LLC.
Renewal SAR Submitted by: TN Americas LLC.
SAR Title: Final Safety Analysis Report for the TN–32 Dry Storage Cask.
Docket Number: 72–1021.
Certificate Expiration Date: April 19, 2020.
Renewed Certificate Expiration Date: April 19, 2060.
Model Number: TN–32, TN–32A, TN–32B.

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EFFECTIVE DATE NOTE 2: At 86 FR 69983, Dec. 9, 2021, § 72.214 was amended by revising Renewed Certificate Number 1027, effective Feb. 22, 2022. For the convenience of the user, the revised text is set forth as follows:

§ 72.214 List of approved spent fuel storage casks.

* * * * *

Certificate Number: 1027.

Initial Certificate Effective Date: May 30, 2000, superseded by Renewed Initial Certificate on February 22, 2022.

Amendment Number 1 Effective Date: October 30, 2007, superseded by Renewed Amendment Number 1 on February 22, 2022.

SAR Submitted by: Transnuclear, Inc., now TN Americas LLC.

Renewal SAR Submitted by: TN Americas LLC.

SAR Title: Final Safety Analysis Report for the TN–68 Dry Storage Cask.

Docket Number: 72–1027.

Certificate Expiration Date: May 28, 2020.

Renewed Certificate Expiration Date: May 28, 2060.

Model Number: TN–68.

* * * * *

§ 72.216 [Reserved]

§ 72.218 Termination of licenses.

(a) The notification regarding the program for the management of spent fuel at the reactor required by § 50.54(bb) of this chapter must include a plan for removal of the spent fuel stored under this general license from the reactor site. The plan must show how the spent fuel will be managed before starting to decommission systems and components needed for moving, unloading, and shipping this spent fuel.

(b) An application for termination of a reactor operating license issued under 10 CFR part 50 and submitted under § 50.82 of this chapter, or a combined license issued under 10 CFR part 52 and submitted under § 52.110 of this chapter, must contain a description of how the spent fuel stored under this general license will be removed from the reactor site.

(c) The reactor licensee shall send a copy of submittals under § 72.218(a) and (b) to the administrator of the appropriate Nuclear Regulatory Commission regional office shown in appendix D to part 20 of this chapter.

[55 FR 29191, July 18, 1990, as amended at 72 FR 49561, Aug. 28, 2007; 86 FR 43403, Aug. 9, 2021]

§ 72.220 Violations.

This general license is subject to the provisions of § 72.84 for violation of the regulations under this part.

Subpart L—Approval of Spent Fuel Storage Casks

SOURCE: 55 FR 29193, July 18, 1990, unless otherwise noted.

§ 72.230 Procedures for spent fuel storage cask submittals.

(a) An application for approval of a spent fuel storage cask design must be submitted in accordance with the instructions contained in § 72.4. A safety analysis report describing the proposed cask design and how the cask should be used to store spent fuel safely must be included with the application.

(b) Casks that have been certified for transportation of spent fuel under part 71 of this chapter may be approved for storage of spent fuel under this subpart. An application must be submitted in accordance with the instructions contained in § 72.4, for a proposed term not to exceed 40 years. A copy of the CoC issued for the cask under part 71 of this chapter, and drawings and other documents referenced in the certificate, must be included with the application. A safety analysis report showing that the cask is suitable for storage of spent fuel, for the term proposed in the application, must also be included.

(c) *Public inspection*. An application for the approval of a cask for storage of spent fuel may be made available for public inspection under § 72.20.

(d) *Fees*. Fees for reviews and evaluations related to issuance of a spent fuel storage cask Certificate of Compliance and inspections related to storage cask fabrication are those shown in § 170.31 of this chapter.

[55 FR 29193, July 18, 1990, as amended at 76 FR 8891, Feb. 16, 2011]

§ 72.232 Inspection and tests.

(a) The certificate holder and applicant for a CoC shall permit, and make provisions for, the NRC to inspect the premises and facilities where a spent fuel storage cask is designed, fabricated, and tested.

(b) The certificate holder and applicant for a CoC shall make available to the NRC for inspection, upon reasonable notice, records kept by them pertaining to the design, fabrication, and testing of spent fuel storage casks.

(c) The certificate holder and applicant for a CoC shall perform, and make provisions that permit the NRC to perform, tests that the Commission deems necessary or appropriate for the administration of the regulations in this part.

(d) The certificate holder and applicant for a CoC shall submit a notification under § 72.4 at least 45 days prior to starting fabrication of the first spent fuel storage cask under a Certificate of Compliance.

[64 FR 56126, Oct. 15, 1999]

§ 72.234 Conditions of approval.

(a) The certificate holder and applicant for a CoC shall ensure that the design, fabrication, testing, and maintenance of a spent fuel storage cask comply with the requirements in § 72.236.

(b) The certificate holder and applicant for a CoC shall ensure that the design, fabrication, testing, and maintenance of spent fuel storage casks are conducted under a quality assurance program that meets the requirements of subpart G of this part.

(c) An applicant for a CoC may begin fabrication of spent fuel storage casks before the Commission issues a CoC for the cask; however, applicants who begin fabrication of casks without a CoC do so at their own risk. A cask fabricated before the CoC is issued shall be made to conform to the issued CoC before being placed in service or before spent fuel is loaded.

(d)(1) The certificate holder shall ensure that a record is established and maintained for each spent fuel storage cask fabricated under the CoC.

(2) This record must include:

(i) The NRC CoC number;

(ii) The spent fuel storage cask model number;

(iii) The spent fuel storage cask identification number;

(iv) Date fabrication was started;

(v) Date fabrication was completed;

(vi) Certification that the spent fuel storage cask was designed, fabricated, tested, and repaired in accordance with a quality assurance program accepted by NRC;

(vii) Certification that inspections required by § 72.236(j) were performed and found satisfactory; and

(viii) The name and address of the licensee using the spent fuel storage cask.

(3) The certificate holder shall supply the original of this record to the licensees using the spent fuel storage cask. A current copy of a composite record of all spent fuel storage casks manufactured under a CoC, showing the information in paragraph (d)(2) of this section, must be initiated and maintained by the certificate holder for each model spent fuel storage cask. If the certificate holder permanently ceases production of spent fuel storage casks under a CoC, the certificate holder shall send this composite record to the Commission using instructions in § 72.4.

(e) The certificate holder and the licensees using the spent fuel storage cask shall ensure that the composite record required by paragraph (d) of this section is available to the Commission for inspection.

(f) The certificate holder shall ensure that written procedures and appropriate tests are established prior to use of the spent fuel storage casks. A copy of these procedures and tests must be provided to each licensee using the spent fuel storage cask.

[64 FR 56126, Oct. 15, 1999, as amended at 65 FR 50617, Aug. 21, 2000]

§ 72.236 Specific requirements for spent fuel storage cask approval and fabrication.

The certificate holder and applicant for a CoC shall ensure that the requirements of this section are met.

(a) Specifications must be provided for the spent fuel to be stored in the spent fuel storage cask, such as, but not limited to, type of spent fuel (*i.e.*, BWR, PWR, both), maximum allowable

enrichment of the fuel prior to any irradiation, burn-up (*i.e.*, megawatt-days/MTU), minimum acceptable cooling time of the spent fuel prior to storage in the spent fuel storage cask, maximum heat designed to be dissipated, maximum spent fuel loading limit, condition of the spent fuel (*i.e.*, intact assembly or consolidated fuel rods), the inerting atmosphere requirements.

(b) Design bases and design criteria must be provided for structures, systems, and components important to safety.

(c) The spent fuel storage cask must be designed and fabricated so that the spent fuel is maintained in a subcritical condition under credible conditions.

(d) Radiation shielding and confinement features must be provided sufficient to meet the requirements in §§ 72.104 and 72.106.

(e) The spent fuel storage cask must be designed to provide redundant sealing of confinement systems.

(f) The spent fuel storage cask must be designed to provide adequate heat removal capacity without active cooling systems.

(g) The spent fuel storage cask must be designed to store the spent fuel safely for the term proposed in the application, and permit maintenance as required.

(h) The spent fuel storage cask must be compatible with wet or dry spent fuel loading and unloading facilities.

(i) The spent fuel storage cask must be designed to facilitate decontamination to the extent practicable.

(j) The spent fuel storage cask must be inspected to ascertain that there are no cracks, pinholes, uncontrolled voids, or other defects that could significantly reduce its confinement effectiveness.

(k) The spent fuel storage cask must be conspicuously and durably marked with—

(1) A model number;

(2) A unique identification number; and

(3) An empty weight.

(l) The spent fuel storage cask and its systems important to safety must be evaluated, by appropriate tests or by other means acceptable to the NRC, to demonstrate that they will reasonably maintain confinement of radioactive material under normal, off-normal, and credible accident conditions.

(m) To the extent practicable in the design of spent fuel storage casks, consideration should be given to compatibility with removal of the stored spent fuel from a reactor site, transportation, and ultimate disposition by the Department of Energy.

(n) Safeguards Information shall be protected against unauthorized disclosure in accordance with the requirements of § 73.21 and the requirements of § 73.22 or § 73.23 of this chapter, as applicable.

[64 FR 56126, Oct. 15, 1999, as amended at 65 FR 50617, Aug. 21, 2000; 73 FR 63573, Oct. 24, 2008; 76 FR 8891, Feb. 16, 2011]

§ 72.238 Issuance of an NRC Certificate of Compliance.

A Certificate of Compliance for a cask model will be issued by NRC for a term not to exceed 40 years on a finding that the requirements in § 72.236(a) through (i) are met.

[76 FR 8891, Feb. 16, 2011]

§ 72.240 Conditions for spent fuel storage cask renewal.

(a) The certificate holder may apply for renewal of the design of a spent fuel storage cask for a term not to exceed 40 years. In the event that the certificate holder does not apply for a cask design renewal, any licensee using a spent fuel storage cask, a representative of such licensee, or another certificate holder may apply for a renewal of that cask design for a term not to exceed 40 years.

(b) The application for renewal of the design of a spent fuel storage cask must be submitted not less than 30 days before the expiration date of the CoC. When the applicant has submitted a timely application for renewal, the existing CoC will not expire until the application for renewal has been determined by the NRC.

(c) The application must be accompanied by a safety analysis report (SAR). The SAR must include the following:

(1) Design bases information as documented in the most recently updated final safety analysis report (FSAR) as required by § 72.248;

(2) Time-limited aging analyses that demonstrate that structures, systems, and components important to safety will continue to perform their intended function for the requested period of extended operation; and

(3) A description of the AMP for management of issues associated with aging that could adversely affect structures, systems, and components important to safety.

(d) The design of a spent fuel storage cask will be renewed if the conditions in subpart G of this part and § 72.238 are met, and the application includes a demonstration that the storage of spent fuel has not, in a significant manner, adversely affected structures, systems, and components important to safety.

(e) In approving the renewal of the design of a spent fuel storage cask, the NRC may revise the CoC to include terms, conditions, and specifications that will ensure the safe operation of the cask during the renewal term, including but not limited to, terms, conditions, and specifications that will require the implementation of an AMP.

[76 FR 8891, Feb. 16, 2011]

§ 72.242 Recordkeeping and reports.

(a) Each certificate holder or applicant shall maintain any records and produce any reports that may be required by the conditions of the CoC or by the rules, regulations, and orders of the NRC in effectuating the purposes of the Act.

(b) Records that are required by the regulations in this part or by conditions of the CoC must be maintained for the period specified by the appropriate regulation or the CoC conditions. If a retention period is not specified, the records must be maintained until the NRC terminates the CoC.

(c) Any record maintained under this part may be either the original or a reproduced copy by any state-of-the-art method provided that any reproduced copy is duly authenticated by authorized personnel and is capable of producing a clear and legible copy after storage for the period specified by NRC regulations.

(d) Each certificate holder shall submit a written report to the NRC within 30 days of discovery of a design or fabrication deficiency, for any spent fuel storage cask which has been delivered to a licensee, when the design or fabrication deficiency affects the ability of structures, systems, and components important to safety to perform their intended safety function. The written report shall be sent to the NRC in accordance with the requirements of § 72.4. The report shall include the following:

(1) A brief abstract describing the deficiency, including all component or system failures that contributed to the deficiency and corrective action taken or planned to prevent recurrence;

(2) A clear, specific, narrative description of what occurred so that knowledgeable readers familiar with the design of the spent fuel storage cask, but not familiar with the details of a particular cask, can understand the deficiency. The narrative description shall include the following specific information as appropriate for the particular event:

(i) Dates and approximate times of discovery;

(ii) The cause of each component or system failure, if known;

(iii) The failure mode, mechanism, and effect of each failed component, if known;

(iv) A list of systems or secondary functions that were also affected for failures of components with multiple functions;

(v) The method of discovery of each component or system failure;

(vi) The manufacturer and model number (or other identification) of each component that failed during the event;

(vii) The model and serial numbers of the affected spent fuel storage casks;

(viii) The licensees that have affected spent fuel storage casks;

(3) An assessment of the safety consequences and implications of the deficiency. This assessment shall include the availability of other systems or components that could have performed the same function as the components and systems that were affected;

(4) A description of any corrective actions planned as a result of the deficiency, including those to reduce the probability of similar occurrences in the future;

(5) Reference to any previous similar deficiencies at the same facility that are known to the certificate holder; and

(6) The name and telephone number of a person within the certificate holder's organization who is knowledgeable about the deficiency and can provide additional information.

[64 FR 56127, Oct. 15, 1999]

§ 72.244 Application for amendment of a certificate of compliance.

Whenever a certificate holder desires to amend the CoC (including a change to the terms, conditions or specifications of the CoC), an application for an amendment shall be filed with the Commission fully describing the changes desired and the reasons for such changes, and following as far as applicable the form prescribed for original applications.

[64 FR 53617, Oct. 4, 1999]

§ 72.246 Issuance of amendment to a certificate of compliance.

In determining whether an amendment to a CoC will be issued to the applicant, the Commission will be guided by the considerations that govern the issuance of an initial CoC.

[64 FR 53617, Oct. 4, 1999]

§ 72.248 Safety analysis report updating.

(a) Each certificate holder for a spent fuel storage cask design shall update periodically, as provided in paragraph (b) of this section, the final safety analysis report (FSAR) to assure that the information included in the report contains the latest information developed.

(1) Each certificate holder shall submit an original FSAR to the Commission, in accordance with § 72.4, within 90 days after the spent fuel storage cask design has been approved pursuant to § 72.238.

(2) The original FSAR shall be based on the safety analysis report submitted with the application and reflect any changes and applicant commitments developed during the cask design review process. The original FSAR shall be updated to reflect any changes to requirements contained in the issued Certificate of Compliance (CoC).

(b) Each update shall contain all the changes necessary to reflect information and analyses submitted to the Commission by the certificate holder or prepared by the certificate holder pursuant to Commission requirement since the submission of the original FSAR or, as appropriate, the last update to the FSAR under this section. The update shall include the effects[1] of:

(1) All changes made in the spent fuel storage cask design or procedures as described in the FSAR;

(2) All safety analyses and evaluations performed by the certificate holder either in support of approved CoC amendments, or in support of conclusions that changes did not require a CoC amendment in accordance with § 72.48; and

(3) All analyses of new safety issues performed by or on behalf of the certificate holder at Commission request. The information shall be appropriately located within the updated FSAR.

(c)(1) The update of the FSAR must be filed in accordance with § 72.4. If the update is filed on paper, then it should be filed on a page-replacement basis; if filed electronically, it should be filed on a full replacement basis. See Guidance for Electronic Submissions to the Commission at *http://www.nrc.gov/site-help/e-submittals.html*.

(2) A paper update filed on a page-replacement basis must include a list that identifies the current pages of the FSAR following page replacement. If the update is filed electronically on a full replacement basis, it must include a list of changed pages.

(3) Each replacement page shall include both a change indicator for the area changed, e.g., a bold line vertically drawn in the margin adjacent to the portion actually changed, and a page change identification (date of change or change number or both);

(4) The update shall include:

(i) A certification by a duly authorized officer of the certificate holder that either the information accurately

[1] Effects of changes includes appropriate revisions of descriptions in the FSAR such that the FSAR (as updated) is complete and accurate.

presents changes made since the previous submittal, or that no such changes were made; and

(ii) An identification of changes made by the certificate holder under the provisions of §72.48, but not previously submitted to the Commission;

(5) The update shall reflect all changes implemented up to a maximum of 6 months prior to the date of filing;

(6) Updates shall be filed every 24 months from the date of issuance of the CoC; and

(7) The certificate holder shall provide a copy of the updated FSAR to each general and specific licensee using its cask design.

(d) The updated FSAR shall be retained by the certificate holder until the Commission terminates the certificate.

(e) A certificate holder who permanently ceases operation, shall provide the updated FSAR to the new certificate holder or to the Commission, as appropriate, in accordance with §72.234(d)(3).

[64 FR 53617, Oct. 4, 1999, as amended at 68 FR 58819, Oct. 10, 2003; 74 FR 62684, Dec. 1, 2009]

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AUTHORITY: Atomic Energy Act of 1954, secs. 53, 147, 149, 161, 170D, 170E, 170H, 170I, 223, 229, 234, 1701 (42 U.S.C. 2073, 2167, 2169, 2201, 2210d, 2210e, 2210h, 2210i, 2273, 2278a, 2282, 2297f); Energy Reorganization Act of 1974, secs. 201, 202 (42 U.S.C. 5841, 5842); Nuclear Waste Policy Act of 1982, secs. 135, 141 (42 U.S.C. 10155, 10161); 44 U.S.C. 3504 note.

Section 73.37(b)(2) also issued under sec. 301, Pub. L. 96–295, 94 Stat. 789 (42 U.S.C. 5841 note).

SOURCE: 38 FR 35430, Dec. 28, 1973, unless otherwise noted.

GENERAL PROVISIONS

§ 73.1 Purpose and scope.

(a) *Purpose.* This part prescribes requirements for the establishment and maintenance of a physical protection system which will have capabilities for the protection of special nuclear material at fixed sites and in transit and of plants in which special nuclear material is used. The following design basis threats, where referenced in ensuing sections of this part, shall be used to design safeguards systems to protect against acts of radiological sabotage and to prevent the theft or diversion of special nuclear material. Licensees subject to the provisions of § 73.20 (except for fuel cycle licensees authorized under Part 70 of this chapter to receive, acquire, possess, transfer, use, or deliver for transportation formula quantities of strategic special nuclear material), §§ 73.50, and 73.60 are exempt from §§ 73.1(a)(1)(i)(E), 73.1(a)(1)(iii), 73.1(a)(1)(iv), 73.1(a)(2)(iii), and 73.1(a)(2)(iv). Licensees subject to the provisions of § 72.212 are exempt from § 73.1(a)(1)(iv).

(1) *Radiological sabotage.* (i) A determined violent external assault, attack by stealth, or deceptive actions, including diversionary actions, by an adversary force capable of operating in each of the following modes: A single group attacking through one entry point, multiple groups attacking through multiple entry points, a combination of one or more groups and one or more individuals attacking through multiple entry points, or individuals attacking through separate entry points, with the following attributes, assistance and equipment:

(A) Well-trained (including military training and skills) and dedicated individuals, willing to kill or be killed, with sufficient knowledge to identify specific equipment or locations necessary for a successful attack;

(B) Active (e.g., facilitate entrance and exit, disable alarms and communications, participate in violent attack) or passive (e.g., provide information), or both, knowledgeable inside assistance;

(C) Suitable weapons, including handheld automatic weapons, equipped with silencers and having effective long range accuracy;

(D) Hand-carried equipment, including incapacitating agents and explosives for use as tools of entry or for otherwise destroying reactor, facility, transporter, or container integrity or features of the safeguards system; and

(E) Land and water vehicles, which could be used for transporting personnel and their hand-carried equipment to the proximity of vital areas; and

(ii) An internal threat; and

(iii) A land vehicle bomb assault, which may be coordinated with an external assault; and

(iv) A waterborne vehicle bomb assault, which may be coordinated with an external assault; and

(v) A cyber attack.

(2) *Theft or diversion of formula quantities of strategic special nuclear material.* (i) A determined violent external assault, attack by stealth, or deceptive actions, including diversionary actions, by an adversary force capable of operating in each of the following modes: a single group attacking through one entry point, multiple groups attacking through multiple entry points, a combination of one or more groups and one or individuals attacking through multiple entry points, or individuals attacking through separate entry points, with the following attributes, assistance and equipment:

(A) Well-trained (including military training and skills) and dedicated individuals, willing to kill or be killed, with sufficient knowledge to identify specific equipment or locations necessary for a successful attack;

(B) Active (e.g., facilitate entrance and exit, disable alarms and communications, participate in violent attack) or passive (e.g., provide information), or both, knowledgeable inside assistance;

(C) Suitable weapons, including handheld automatic weapons, equipped with silencers and having effective long-range accuracy;

(D) Hand-carried equipment, including incapacitating agents and explosives for use as tools of entry or for otherwise destroying reactor, facility, transporter, or container integrity or features of the safe-guards system;

(E) Land and water vehicles, which could be used for transporting personnel and their hand-carried equipment; and

(ii) An internal threat; and

(iii) A land vehicle bomb assault, which may be coordinated with an external assault; and

(iv) A waterborne vehicle bomb assault, which may be coordinated with an external assault; and

(v) A cyber attack.

(b) *Scope.* (1) This part prescribes requirements for:

(i) The physical protection of production and utilization facilities licensed under parts 50 or 52 of this chapter,

(ii) The physical protection of plants in which activities licensed pursuant to part 70 of this chapter are conducted, and

(iii) The physical protection of special nuclear material by any person who, pursuant to the regulations in part 61 or 70 of this chapter, possesses or uses at any site or contiguous sites subject to the control by the licensee, formula quantities of strategic special nuclear material or special nuclear material of moderate strategic significance or special nuclear material of low strategic significance.

(2) This part prescribes requirements for the physical protection of special nuclear material in transportation by any person who is licensed pursuant to the regulations in parts 70 and 110 of this chapter who imports, exports, transports, delivers to a carrier for transport in a single shipment, or takes delivery of a single shipment free on board (F.O.B.) where it is delivered to a carrier, formula quantities of strategic special nuclear material, special nuclear material of moderate strategic significance or special nuclear material of low strategic significance.

(3) This part also applies to shipments by air of special nuclear material in quantities exceeding: (i) 20 grams or 20 curies, whichever is less, of plutonium or uranium-233, or (ii) 350 grams of uranium-235 (contained in uranium enriched to 20 percent or more in the U–235 isotope).

(4) Special nuclear material subject to this part may also be protected pursuant to security procedures prescribed by the Commission or another Government agency for the protection of classified materials. The provisions and requirements of this part are in addition to, and not in substitution for, any such security procedures. Compliance with the requirements of this part does

not relieve any licensee from any requirement or obligation to protect special nuclear material pursuant to security procedures prescribed by the Commission or other Government agency for the protection of classified materials.

(5) This part also applies to the shipment of irradiated reactor fuel in quantities that in a single shipment both exceed 100 grams in net weight of irradiated fuel, exclusive of cladding or other structural or packaging material, and have a total external radiation level in excess of 1 gray (100 rad) per hour at a distance of 1 meter (3.3 feet) from any accessible surface without intervening shielding.

(6) This part prescribes requirements for the physical protection of spent nuclear fuel and high-level radioactive waste stored in either an independent spent fuel storage installation (ISFSI) or a monitored retrievable storage (MRS) installation licensed under part 72 of this chapter, or stored at the geologic repository operations area licensed under part 60 or part 63 of this chapter.

(7) This part prescribes requirements for the protection of Safeguards Information (including Safeguards Information with the designation or marking: Safeguards Information—Modified Handling) in the hands of any person, whether or not a licensee of the Commission, who produces, receives, or acquires that information.

(8) This part prescribes requirements for advance notice of export and import shipments of special nuclear material, including irradiated reactor fuel.

(9) As provided in part 76 of this chapter, the regulations of this part establish procedures and criteria for physical security for the issuance of a certificate of compliance or the approval of a compliance plan.

[44 FR 68186, Nov. 28, 1979]

EDITORIAL NOTE: For FEDERAL REGISTER citations affecting § 73.1, see the List of CFR Sections Affected, which appears in the Finding Aids section of the printed volume and at *www.govinfo.gov*.

§ 73.2 Definitions.

As used in this part:

(a) Terms defined in parts 50, 52, and 70 of this chapter have the same meaning when used in this part.

Appropriate Nuclear Regulatory Commission Regional Office listed in appendix A means:

(1) For domestic shipments—the Regional Office within whose region the licensee who is responsible for the physical protection arrangements of the shipment is located.

(2) For export shipments—the Regional Office within whose region the licensee who is responsible for the physical protection arrangements of the shipment is located, and the Regional Office for the region in which the last point of exit of the shipment from the U.S. is located.

(3) For import shipments—the Regional Office within whose region the licensee who is responsible for the physical protection arrangements of the shipment is located, and the Regional Office for the region in which the first point of entry of the shipment into the U.S. is located.

Armed escort means an armed person, not necessarily uniformed, whose primary duty is to accompany shipments of special nuclear material for the protection of such shipments against theft or radiological sabotage.

Armed response personnel means persons, not necessarily uniformed, whose primary duty in the event of attempted theft of special nuclear material or radiological sabotage shall be to respond, armed and equipped, to prevent or delay such actions.

Authorized individual means any individual, including an employee, a student, a consultant, or an agent of a licensee who has been designated in writing by a licensee to have responsibility for surveillance of or control over special nuclear material or to have unescorted access to areas where special nuclear material is used or stored.

Background check includes, at a minimum, a Federal Bureau of Investigation (FBI) criminal history records check (including verification of identity based on fingerprinting), employment history, education, and personal references. Individuals engaged in activities subject to regulation by the Commission, applicants for licenses to

engage in Commission-regulated activities, and individuals who have notified the Commission in writing of an intent to file an application for licensing, certification, permitting, or approval of a product or activity subject to regulation by the Commission are required under § 73.57 to conduct fingerprinting and criminal history records checks before granting access to Safeguards Information. A background check must be sufficient to support the trustworthiness and reliability determination so that the person performing the check and the Commission have assurance that granting individuals access to Safeguards Information does not constitute an unreasonable risk to the public health and safety or the common defense and security.

Bullet/resisting means protection against complete penetration, passage of fragments of projectiles, and spalling (fragmentation) of the protective material that could cause injury to a person standing directly behind the bullet-resisting barrier.

Contiguous sites means licensee controlled locations, deemed by the Commission to be in close enough proximity to each other, that the special nuclear material must be considered in the aggregate for the purpose of physical protection.

Continuous visual surveillance means unobstructed view at all times of a shipment of special nuclear material, and of all access to a temporary storage area or cargo compartment containing the shipment.

Controlled access area means any temporarily or permanently established area which is clearly demarcated, access to which is controlled and which affords isolation of the material or persons within it.

Deceit means methods used to attempt to gain unauthorized access, introduce unauthorized materials, or remove strategic special nuclear materials, where the attempt involves falsification to present the appearance of authorized access.

DOE and *Department of Energy* means the Department of Energy established by the Department of Energy Organization Act (Pub. L. 95–91, 91 Stat. 565, 42 U.S.C. 7101 *et seq.*), to the extent that the Department, or its duly authorized representatives, exercises functions formerly vested in the U.S. Atomic Energy Commission, its Chairman, members, officers and components and transfered to the U.S. Energy Research and Development Administration and to the Administrator thereof pursuant to sections 104(b), (c) and (d) of the Energy Reorganization Act of 1974 (Pub. L. 93–438, 88 Stat. 1233 at 1237, 42 U.S.C. 5814) and retransferred to the Secretary of Energy pursuant to section 301(a) of the Department of Energy Organization Act (Pub. L. 95–91, 91 Stat. 565 at 577–578, 42 U.S.C. 7151).

Force means violent methods used by an adversary to attempt to steal strategic special nuclear material or to sabotage a nuclear facility or violent methods used by response personnel to protect against such adversary actions.

Formula quantity means strategic special nuclear material in any combination in a quantity of 5,000 grams or more computed by the formula, grams = (grams contained U-235) + 2.5 (grams U-233 + grams plutonium). This class of material is sometimes referred to as a Category I quantity of material.

Guard means a uniformed individual armed with a firearm whose primary duty is the protection of special nuclear material against theft, the protection of a plant against radiological sabotage, or both.

Incendiary device means any self-contained device intended to create an intense fire that can damage normally flame-resistant or retardant materials.

Indian Tribe means an Indian or Alaska Native Tribe, band, nation, pueblo, village, or community that the Secretary of the Interior acknowledges to exist as an Indian Tribe pursuant to the Federally Recognized Indian Tribe List Act of 1994, 25 U.S.C. 5130.

Individual authorized access to Safeguards Information is an individual authorized to have access to and handle such information pursuant to the requirements of §§ 73.21 and 73.22 of this part.

Individual authorized access to Safeguards Information—Modified Handling is an individual authorized to have access to and handle Safeguards Information designated as Safeguards Information—Modified Handling information

pursuant to the requirements of §§ 73.21 and 73.23 of this part.

Intrusion alarm means a tamper indicating electrical, electromechanical, electrooptical, electronic or similar device which will detect intrusion by an individual into a building, protected area, vital area, or material access area, and alert guards or watchmen by means of actuated visible and audible signals.

Isolation zone means any area adjacent to a physical barrier, clear of all objects which could conceal or shield an individual.

Lock in the case of vaults or vault type rooms means a three-position, manipulation resistant, dial type, built-in combination lock or combination padlock and in the case of fences, walls, and buildings means an integral door lock or padlock which provides protection equivalent to a six-tumbler cylinder lock. *Lock* in the case of a vault or vault type room also means any manipulation resistant, electromechanical device which provides the same function as a built-in combination lock or combination padlock, which can be operated remotely or by the *reading* or insertion of information, which can be uniquely characterized, and which allows operation of the device. *Locked* means protected by an operable lock.

Material access area means any location which contains special nuclear material, within a vault or a building, the roof, walls, and floor of which each constitute a physical barrier.

Movement control center means an operations center which is remote from transport activity and which maintains periodic position information on the movement of strategic special nuclear material, receives reports of attempted attacks or thefts, provides a means for reporting these and other problems to appropriate agencies and can request and coordinate appropriate aid.

Need to know means a determination by a person having responsibility for protecting Safeguards Information (including Safeguards Information designated as Safeguards Information—Modified Handling) that a proposed recipient's access to Safeguards Information is necessary in the performance of official, contractual, licensee, applicant, or certificate holder employment. In an adjudication, ''need to know'' means a determination by the originator of the information that the information is necessary to enable the proposed recipient to proffer and/or adjudicate a specific contention in that proceeding, and the proposed recipient of the specific Safeguards Information possesses demonstrable knowledge, skill, training, or education to effectively utilize the specific Safeguards Information in the proceeding. Where the information is in the possession of the originator and the NRC staff (dual possession), whether in its original form or incorporated into another document or other matter by the recipient, the NRC staff makes the determination. In the event of a dispute regarding the ''need to know'' determination, the presiding officer of the proceeding shall make the ''need to know'' determination.

Person means (1) any individual, corporation, partnership, firm, association, trust, estate, public or private institution, group, government agency other than the Commission or the Department of Energy (DOE), (except that the DOE shall be considered a person to the extent that its facilities are subject to the licensing and related regulatory authority of the Commission pursuant to section 202 of the Energy Reorganization Act of 1974 and sections 104, 105, and 202 of the Uranium Mill Tailings Radiation Control Act of 1978), any state or political subdivision of a state, or any political subdivision of any government or nation, or other entity; and (2) any legal successor, representative, agent, or agency of the foregoing.

Physical barrier means:

(1) Fences constructed of No. 11 American wire gauge, or heavier wire fabric, topped by three strands or more of barbed wire or similar material on brackets angled inward or outward between 30° and 45° from the vertical, with an overall height of not less than eight feet, including the barbed topping;

(2) Building walls, ceilings and floors constructed of stone, brick, cinder block, concrete, steel or comparable materials (openings in which are secured by grates, doors, or covers of

construction and fastening of sufficient strength such that the integrity of the wall is not lessened by any opening), or walls of similar construction, not part of a building, provided with a barbed topping described in paragraph (1) of this definition of a height of not less than 8 feet; or

(3) Any other physical obstruction constructed in a manner and of materials suitable for the purpose for which the obstruction is intended.

Protected area means an area encompassed by physical barriers and to which access is controlled.

Radiological sabotage means any deliberate act directed against a plant or transport in which an activity licensed pursuant to the regulations in this chapter is conducted, or against a component of such a plant or transport which could directly or indirectly endanger the public health and safety by exposure to radiation.

Safeguards Information means information not classified as National Security Information or Restricted Data which specifically identifies a licensee's or applicant's detailed control and accounting procedures for the physical protection of special nuclear material in quantities determined by the Commission through order or regulation to be significant to the public health and safety or the common defense and security; detailed security measures (including security plans, procedures, and equipment) for the physical protection of source, byproduct, or special nuclear material in quantities determined by the Commission through order or regulation to be significant to the public health and safety or the common defense and security; security measures for the physical protection of and location of certain plant equipment vital to the safety of production or utilization facilities; and any other information within the scope of Section 147 of the Atomic Energy Act of 1954, as amended, the unauthorized disclosure of which, as determined by the Commission through order or regulation, could reasonably be expected to have a significant adverse effect on the health and safety of the public or the common defense and security by significantly increasing the likelihood of sabotage or theft or diversion of source, byproduct, or special nuclear material.

Safeguards Information—Modified Handling is the designation or marking applied to Safeguards Information which the Commission has determined requires handling requirements modified from the specific Safeguards Information handling requirements that are applicable to Safeguards Information needing a higher level of protection.

Security management means persons responsible for security at the policy and general management level.

Security Storage Container includes any of the following repositories: (1) For storage in a building located within a protected or controlled access area, a steel filing cabinet equipped with a steel locking bar and a three position, changeable combination, GSA approved padlock; (2) A security filing cabinet that bears a Test Certification Label on the side of the locking drawer, or interior plate, and is marked, *General Services Administration Approved Security Container* on the exterior of the top drawer or door; (3) A bank safe-deposit box; and (4) Other repositories which in the judgement of the NRC, would provide comparable physical protection.

Security supervision means persons, not necessarily uniformed or armed, whose primary duties are supervision and direction of security at the day-to-day operating level.

Special nuclear material of low strategic significance means:

(1) Less than an amount of special nuclear material of moderate strategic significance as defined in paragraph (1) of the definition of strategic nuclear material of moderate strategic significance in this section, but more than 15 grams of uranium-235 (contained in uranium enriched to 20 percent or more in U-235 isotope) or 15 grams of uranium-233 or 15 grams of plutonium or the combination of 15 grams when computed by the equation, grams = (grams contained U-235) + (grams plutonium) + (grams U-233); or

(2) Less than 10,000 grams but more than 1,000 grams of uranium-235 (contained in uranium enriched to 10 percent or more but less than 20 percent in the U-235 isotope); or

(3) 10,000 grams or more of uranium-235 (contained in uranium enriched above natural but less than 10 percent in the U-235 isotope).

This class of material is sometimes referred to as a Category III quantity of material.

Special nuclear material of moderate strategic significance means:

(1) Less than a formula quantity of strategic special nuclear material but more than 1,000 grams of uranium-235 (contained in uranium enriched to 20 percent or more in the U-235 isotope) or more than 500 grams of uranium-233 or plutonium, or in a combined quantity of more than 1,000 grams when computed by the equation, grams = (grams contained U-235) + 2 (grams U-233 + grams plutonium); or

(2) 10,000 grams or more of uranium-235 (contained in uranium enriched to 10 percent or more but less than 20 percent in the U-235 isotope).

This class of material is sometimes referred to as a Category II quantity of material.

Stealth means methods used to attempt to gain unauthorized access, introduce unauthorized materials, or remove strategic special nuclear material, where the fact of such attempt is concealed or an attempt is made to conceal it.

Strategic special nuclear material means uranium-235 (contained in uranium enriched to 20 percent or more in the U–235 isotope), uranium-233, or plutonium.

Tactical Response Team means the primary response force for each shift which can be identified by a distinctive item of uniform, armed with specified weapons, and whose other duties permit immediate response.

Transport means any land, sea, or air conveyance or modules for these conveyances such as rail cars or standardized cargo containers.

Tribal official means the highest ranking individual that represents Tribal leadership, such as the Chief, President, or Tribal Council leadership.

Trustworthiness and reliability are characteristics of an individual considered dependable in judgment, character, and performance, such that disclosure of Safeguards Information (including Safeguards Information designated as Safeguards Information—Modified Handling) to that individual does not constitute an unreasonable risk to the public health and safety or common defense and security. A determination of trustworthiness and reliability for this purpose is based upon a background check.

Undergoing processing means performing active operations on material such as chemical transformation, physical transformation, or transit between such operations, to be differentiated from storage or packaging for shipment.

Vault means a windowless enclosure with walls, floor, roof and door(s) designed and constructed to delay penetration from forced entry.

Vault-type room means a room with one or more doors, all capable of being locked, protected by an intrusion alarm which creates an alarm upon the entry of a person anywhere into the room and upon exit from the room or upon movement of an individual within the room.

Vital area means any area which contains vital equipment.

Vital equipment means any equipment, system, device, or material, the failure, destruction, or release of which could directly or indirectly endanger the public health and safety by exposure to radiation. Equipment or systems which would be required to function to protect public health and safety following such failure, destruction, or release are also considered to be vital.

Watchman means an individual, not necessarily uniformed or armed with a firearm, who provides protection for a plant and the special nuclear material therein in the course of performing other duties.

[38 FR 35430, Dec. 28, 1973]

EDITORIAL NOTE: For FEDERAL REGISTER citations affecting § 73.2, see the List of CFR Sections Affected, which appears in the Finding Aids section of the printed volume and at *www.govinfo.gov*.

§ 73.3 Interpretations.

Except as specifically authorized by the Commission in writing, no interpretations of the meaning of the regulations in this part by any officer or employee of the Commission other than a written interpretation by the

General Counsel will be recognized as binding upon the Commission.

§ 73.4 Communications.

Except where otherwise specified, all communications and reports concerning the regulations in this part and applications filed under them should be sent as follows:

(a) By mail addressed to: ATTN: Document Control Desk, Director, Office of Nuclear Reactor Regulation, Director, Office of Nuclear Material Safety and Safeguards, or Director, Office of Nuclear Security and Incident Response, as appropriate, U.S. Nuclear Regulatory Commission, Washington, DC 20555–0001;

(b) By hand delivery to the NRC's offices at 11555 Rockville Pike, Rockville, Maryland;

(c) Where practicable, by electronic submission, for example, Electronic Information Exchange, or CD-ROM. Electronic submissions must be made in a manner that enables the NRC to receive, read, authenticate, distribute, and archive the submission, and process and retrieve it a single page at a time. Detailed guidance on making electronic submissions can be obtained by visiting the NRC's Web site at *http://www.nrc.gov/site-help/e-submittals.html;* by e-mail to *MSHD.Resource@nrc.gov;* or by writing the Office of the Chief Information Officer, U.S. Nuclear Regulatory Commission, Washington, DC 20555–0001. The guidance discusses, among other topics, the formats the NRC can accept, the use of electronic signatures, and the treatment of nonpublic information.

(d) Classified communications shall be transmitted to the NRC Headquarters' classified mailing address as specified in appendix A to part 73 of this chapter or delivered by hand in accordance with this paragraph.

[68 FR 58819, Oct. 10, 2003, as amended at 73 FR 5725, Jan. 31, 2008; 74 FR 62684, Dec. 1, 2009; 80 FR 74981, Dec. 1, 2015; 83 FR 58723, Nov. 21, 2018; 84 FR 65646, Nov. 29, 2019]

§ 73.5 Specific exemptions.

The Commission may, upon application of any interested person or upon its own initiative, grant such exemptions from the requirements of the regulations in this part as it determines are authorized by law and will not endanger life or property or the common defense and security, and are otherwise in the public interest.

§ 73.6 Exemptions for certain quantities and kinds of special nuclear material.

A licensee is exempt from the requirements of 10 CFR part 26 and §§ 73.20, 73.25, 73.26, 73.27, 73.45, 73.46, 73.70 and 73.72 with respect to the following special nuclear material:

(a) Uranium-235 contained in uranium enriched to less than 20 percent in the U–235 isotope.

(b) Special nuclear material which is not readily separable from other radioactive material and which has a total external radiation level in excess of 1 gray (100 rad) per hour at a distance of 1 meter (3.3 feet) from any accessible surface without intervening shielding.

(c) Special nuclear material in a quantity not exceeding 350 grams of uranium-235, uranium-233, plutonium, or a combination thereof, possessed in any analytical, research, quality control, metallurgical or electronic laboratory.

(d) Special nuclear material that is being transported by the United States Department of Energy transport system.

(e) Special nuclear material at nonpower reactors.

Licensees subject to § 73.60 are not exempted from §§ 73.70 and 73.72, and licensees subject to § 73.67(e) are not exempted from § 73.72 of this part.

[40 FR 52841, Nov. 13, 1975, as amended at 44 FR 68187, Nov. 28, 1979; 58 FR 31471, June 3, 1993; 78 FR 34250, June 7, 2013; 86 FR 43402, Aug. 9, 2021]

§ 73.8 Information collection requirements: OMB approval.

(a) The Nuclear Regulatory Commission has submitted the information collection requirements contained in this part to the Office of Management and Budget (OMB) for approval as required by the Paperwork Reduction Act (44 U.S.C. 3501 *et seq.*). The NRC may not conduct or sponsor, and a person is not required to respond to, a collection of information is it does not display a currently valid OMB control

number. OMB has approved the information collection requirements contained in this part under control number 3150–0002.

(b) The approved information collection requirements contained in this part appear in §§ 73.5, 73.20, 73.21, 73.23, 73.24, 73.25, 73.26, 73.27, 73.37, 73.38, 73.40, 73.45, 73.46, 73.50, 73.51, 73.54, 73.55, 73.56, 73.57, 73.58, 73.60, 73.67, 73.70, 73.71, 73.72, 73.73, 73.74, and appendices B, C, and G to this part.

(c) This part contains information collection requirements in addition to those approved under the control number specified in paragraph (a) of this section. The information collection requirement and the control numbers under which it is approved are as follows:

(1) In §§ 73.71 and 73.77, NRC Form 366 is approved under control number 3150–0104.

(2) [Reserved]

[62 FR 52189, Oct. 6, 1997, as amended at 67 FR 67101, Nov. 4, 2002; 73 FR 63574, Oct. 24, 2008; 74 FR 13970, Mar. 27, 2009; 77 FR 39909, July 6, 2012; 78 FR 29550, May 20, 2013; 80 FR 67275, Nov. 2, 2015; 80 FR 74981, Dec. 1, 2015]

§ 73.20 General performance objective and requirements.

(a) In addition to any other requirements of this part, each licensee who is authorized to operate a fuel reprocessing plant pursuant to part 50 of this chapter; possesses or uses formula quantities of strategic special nuclear material at any site or contiguous sites subject to control by the licensee; is authorized to transport or deliver to a carrier for transportation pursuant to part 70 of this chapter formula quantities of strategic special nuclear material; takes delivery of formula quantities of strategic special nuclear material free on board (f.o.b.) the point at which it is delivered to a carrier for transportation; or imports or exports formula quantities of strategic special nuclear material, shall establish and maintain or make arrangements for a physical protection system which will have as its objective to provide high assurance that activities involving special nuclear material are not inimical to the common defense and security, and do not constitute an unreasonable risk to the public health and safety. The physical protection system shall be designed to protect against the design basis threats of theft or diversion of strategic special nuclear material and radiological sabotage as stated in § 73.1(a).

(b) To achieve the general performance objective of paragraph (a) of this section a licensee shall establish and maintain, or arrange for, a physical protection system that:

(1) Provides the performance capabilities described in § 73.25 for in-transit protection or in § 73.45 for fixed site protection unless otherwise authorized by the Commission;

(2) Is designed with sufficient redundancy and diversity to ensure maintenance of the capabilities described in §§ 73.25 and 73.45;

(3) Includes a safeguards contingency capability that can meet the criteria in appendix C to this part ''Licensee Safeguards Contingency Plans;'' and

(4) Includes a testing and maintenance program to assure control over all activities and devices affecting the effectiveness, reliability, and availability of the physical protection system, including a demonstration that any defects of such activities and devices will be promptly detected and corrected for the total period of time they are required as a part of the physical protection system.

(c) Each licensee subject to the requirements of paragraphs (a) and (b) of this section shall establish, maintain, and follow NRC-approved safeguards physical protection and safeguards contingency plans that describe how the licensee will comply with the requirements of paragraphs (a) and (b) of this section.

[44 FR 68188, Nov. 28, 1979, as amended at 57 FR 33430, July 29, 1992]

§ 73.21 Protection of Safeguards Information: Performance requirements.

(a) *General performance requirement.* (1) Each licensee, certificate holder, applicant, or other person who produces, receives, or acquires Safeguards Information (including Safeguards Information with the designation or marking: Safeguards Information—Modified Handling) shall ensure that it is protected against unauthorized disclosure.

To meet this general performance requirement, such licensees, certificate holders, applicants, or other persons subject to this section shall:

(i) Establish, implement, and maintain an information protection system that includes the applicable measures for Safeguards Information specified in § 73.22 related to: Power reactors; a formula quantity of strategic special nuclear material; transportation of or delivery to a carrier for transportation of a formula quantity of strategic special nuclear material or more than 100 grams of irradiated reactor fuel; uranium hexafluoride production or conversion facilities; fuel fabrication facilities; uranium enrichment facilities; independent spent fuel storage installations; and geologic repository operations areas.

(ii) Establish, implement, and maintain an information protection system that includes the applicable measures for Safeguards Information specified in § 73.23 related to: Research and test reactors that possess special nuclear material of moderate strategic significance or special nuclear material of low strategic significance.

(iii) Protect the information in accordance with the requirements of § 73.22 if the Safeguards Information is not described in paragraphs (a)(1)(i) and (a)(1)(ii) of this section.

(2) Information protection procedures employed by Federal, State, Tribal, and local law enforcement agencies are presumed to meet the general performance requirement in paragraph (a)(1) of this section.

(b) *Commission authority*. (1) Pursuant to Section 147 of the Atomic Energy Act of 1954, as amended, the Commission may impose, by order or regulation, Safeguards Information protection requirements different from or in addition to those specified in this Part on any person who produces, receives, or acquires Safeguards Information.

(2) The Commission may require, by regulation or order, that information within the scope of Section 147 of the Atomic Energy Act of 1954, as amended, related to facilities or materials not specifically described in §§ 73.21, 73.22 or 73.23 be protected under this part.

[73 FR 63574, Oct. 24, 2008, as amended at 77 FR 34205, June 11, 2012; 79 FR 58671, Sept. 30, 2014]

§ 73.22 Protection of Safeguards Information: Specific requirements.

This section contains specific requirements for the protection of Safeguards Information in the hands of any person subject to the requirements of § 73.21(a)(1)(i) and related to power reactors; a formula quantity of strategic special nuclear material; transportation of or delivery to a carrier for transportation of a formula quantity of strategic special nuclear material or more than 100 grams of irradiated reactor fuel; uranium hexafluoride production or conversion facilities, fuel fabrication facilities, and uranium enrichment facilities; independent spent fuel storage installations; geologic repository operations areas and Safeguards Information in the hands of any person subject to the requirements of § 73.21(a)(1)(iii).

(a) *Information to be protected*. The types of information and documents that must be protected as Safeguards Information include non-public security-related requirements such as:

(1) *Physical protection*. Information not classified as Restricted Data or National Security Information related to physical protection, including:

(i) The composite physical security plan for the facility or site;

(ii) Site-specific drawings, diagrams, sketches, or maps that substantially represent the final design features of the physical security system not easily discernible by members of the public;

(iii) Alarm system layouts showing the location of intrusion detection devices, alarm assessment equipment, alarm system wiring, emergency power sources for security equipment, and duress alarms not easily discernible by members of the public;

(iv) Physical security orders and procedures issued by the licensee for members of the security organization detailing duress codes, patrol routes and schedules, or responses to security contingency events;

(v) Site-specific design features of plant security communications systems;

(vi) Lock combinations, mechanical key design, or passwords integral to the physical security system;

(vii) Documents and other matter that contain lists or locations of certain safety-related equipment explicitly identified in the documents or other matter as vital for purposes of physical protection, as contained in security plans, contingency measures, or plant specific safeguards analyses;

(viii) The composite safeguards contingency plan/measures for the facility or site;

(ix) The composite facility guard qualification and training plan/measures disclosing features of the physical security system or response procedures;

(x) Information relating to on-site or off-site response forces, including size, armament of response forces, and arrival times of such forces committed to respond to security contingency events;

(xi) The adversary characteristics document and related information, including implementing guidance associated with the Design Basis Threat in § 73.1(a)(1) or (a)(2); and

(xii) Engineering and safety analyses, security-related procedures or scenarios, and other information revealing site-specific details of the facility or materials if the unauthorized disclosure of such analyses, procedures, scenarios, or other information could reasonably be expected to have a significant adverse effect on the health and safety of the public or the common defense and security by significantly increasing the likelihood of theft, diversion, or sabotage of source, byproduct, or special nuclear material.

(2) *Physical protection in transit.* Information not classified as Restricted Data or National Security Information related to the transportation of, or delivery to a carrier for transportation of a formula quantity of strategic special nuclear material or more than 100 grams of irradiated reactor fuel, including:

(i) The composite physical security plan for transportation;

(ii) Schedules and itineraries for specific shipments of source material, byproduct material, high-level nuclear waste, or irradiated reactor fuel. Schedules for shipments of source material, byproduct material, high-level nuclear waste, or irradiated reactor fuel are no longer controlled as Safeguards Information 10 days after the last shipment of a current series;

(iii) Vehicle immobilization features, intrusion alarm devices, and communications systems;

(iv) Arrangements with and capabilities of local police response forces, and locations of safe havens identified along the transportation route;

(v) Limitations of communications during transport;

(vi) Procedures for response to security contingency events;

(vii) Information concerning the tactics and capabilities required to defend against attempted sabotage, or theft and diversion of formula quantities of special nuclear material, irradiated reactor fuel, or related information; and

(viii) Engineering or safety analyses, security-related procedures or scenarios and other information related to the protection of the transported material if the unauthorized disclosure of such analyses, procedures, scenarios, or other information could reasonably be expected to have a significant adverse effect on the health and safety of the public or the common defense and security by significantly increasing the likelihood of theft, diversion, or sabotage of source, byproduct, or special nuclear material.

(3) *Inspections, audits and evaluations.* Information not classified as National Security Information or Restricted Data pertaining to safeguards and security inspections and reports, including:

(i) Portions of inspection reports, evaluations, audits, or investigations that contain details of a licensee's or applicant's physical security system or that disclose uncorrected defects, weaknesses, or vulnerabilities in the system. Disclosure of corrected defects, weaknesses, or vulnerabilities is subject to an assessment taking into account such factors as trending analyses

and the impacts of disclosure on licensees having similar physical security systems; and

(ii) Reports of investigations containing general information may be released after corrective actions have been completed, unless withheld pursuant to other authorities, e.g., the Freedom of Information Act (5 U.S.C. 552).

(4) *Correspondence.* Portions of correspondence insofar as they contain Safeguards Information as set forth in paragraphs (a)(1) through (a)(3) of this section.

(5) Other information within the scope of Section 147 of the Atomic Energy Act of 1954, as amended, that the Commission determines by order or regulation could reasonably be expected to have a significant adverse effect on the health and safety of the public or the common defense and security by significantly increasing the likelihood of theft, diversion, or sabotage of source, byproduct, or special nuclear material or a facility.

(b) *Conditions for access.* (1) Except as the Commission may otherwise authorize, no person may have access to Safeguards Information unless the person has an established ''need to know'' for the information and has undergone a Federal Bureau of Investigation (FBI) criminal history records check using the procedures set forth in § 73.57.

(2) In addition, a person to be granted access to Safeguards Information must be trustworthy and reliable, based on a background check or other means approved by the Commission.

(3) The categories of individuals specified in 10 CFR 73.59 are exempt from the criminal history records check and background check requirements in paragraphs (b)(1) and (b)(2) of this section by virtue of their occupational status.

(4) For persons participating in an NRC adjudicatory proceeding, the ''need to know'' determination shall be made by the originator of the Safeguards Information upon receipt of a request for access to the Safeguards Information. Where the information is in the possession of the originator and the NRC staff, whether in its original form or incorporated into another document or other matter by the recipient, the NRC staff shall make the determination. In the event of a dispute regarding the ''need to know'' determination, the presiding officer of the proceeding shall determine whether the ''need to know'' findings in § 73.2 can be made.

(5) Except as the Commission may otherwise authorize, no person may disclose Safeguards Information to any other person except as set forth in this section.

(c) *Protection while in use or storage.* (1) While in use, matter containing Safeguards Information must be under the control of an individual authorized access to Safeguards Information. This requirement is satisfied if the Safeguards Information is attended by such an individual even though the information is in fact not constantly being used. Safeguards Information within alarm stations, or rooms continuously occupied by authorized individuals need not be stored in a locked security storage container.

(2) While unattended, Safeguards Information must be stored in a locked security storage container. The container shall not identify the contents of the matter contained and must preclude access by individuals not authorized access in accordance with the provisions of this section. Knowledge of lock combinations protecting Safeguards Information must be limited to a minimum number of personnel for operating purposes who have a ''need to know'' and are otherwise authorized access to Safeguards Information in accordance with the provisions of this Part. Access to lock combinations must be strictly controlled so as to prevent disclosure to an individual not authorized access to Safeguards Information.

(d) *Preparation and marking of documents or other matter.* (1) Each document or other matter that contains Safeguards Information as described in § 73.21(a)(1)(i) and this section must be marked to indicate the presence of such information in a conspicuous manner on the top and bottom of each page. The first page of the document or other matter must also contain:

(i) The name, title, and organization of the individual authorized to make a Safeguards Information determination,

and who has determined that the document or other matter contains Safeguards Information;

(ii) The date the determination was made; and

(iii) An indication that unauthorized disclosure will be subject to civil and criminal sanctions.

(2) In addition to the markings at the top and bottom of each page, any transmittal letters or memoranda to or from the NRC which do not in themselves contain Safeguards Information shall be marked to indicate that attachments or enclosures contain Safeguards Information but that the transmittal document or other matter does not (*i.e.*, ''When separated from Safeguards Information enclosure(s), this document is decontrolled provided the transmittal document does not otherwise warrant protection from unauthorized disclosure'').

(3) Any transmittal document or other matter forwarding Safeguards Information must alert the recipient that protected information is enclosed. Certification that a document or other matter contains Safeguards Information must include the name and title of the certifying official and date designated. Portion marking is required only for correspondence to and from the NRC (*i.e.*, cover letters, but not attachments) that contains Safeguards Information. The portion marking must be sufficient to allow the recipient to identify and distinguish those sections of the transmittal document or other information containing the Safeguards Information from non-Safeguards Information.

(4) Marking of documents or other matter containing or transmitting Safeguards Information shall, at a minimum include the words ''Safeguards Information'' to ensure identification of protected information for the protection of facilities and material covered by § 73.22.

(e) *Reproduction of matter containing Safeguards Information*. Safeguards Information may be reproduced to the minimum extent necessary consistent with need without permission of the originator. Equipment used to reproduce Safeguards Information must be evaluated to ensure that unauthorized individuals cannot access Safeguards Information (e.g., unauthorized individuals cannot access Safeguards Information by gaining access to retained memory or network connectivity).

(f) *External transmission of documents and material*. (1) Documents or other matter containing Safeguards Information, when transmitted outside an authorized place of use or storage, must be packaged in two sealed envelopes or wrappers to preclude disclosure of the presence of protected information. The inner envelope or wrapper must contain the name and address of the intended recipient and be marked on both sides, top and bottom, with the words ''Safeguards Information.'' The outer envelope or wrapper must be opaque, addressed to the intended recipient, must contain the address of the sender, and may not bear any markings or indication that the document or other matter contains Safeguards Information.

(2) Safeguards Information may be transported by any commercial delivery company that provides service with computer tracking features, U.S. first class, registered, express, or certified mail, or by any individual authorized access pursuant to these requirements.

(3) Except under emergency or extraordinary conditions, Safeguards Information shall be transmitted outside an authorized place of use or storage only by NRC approved secure electronic devices, such as facsimiles or telephone devices, provided that transmitters and receivers implement processes that will provide high assurance that Safeguards Information is protected before and after the transmission or electronic mail through the internet, provided that the information is encrypted by a method (Federal Information Processing Standard [FIPS] 140–2 or later) approved by the appropriate NRC Office; the information is produced by a self contained secure automatic data process system; and transmitters and receivers implement the information handling processes that will provide high assurance that Safeguards Information is protected before and after transmission. Physical security events required to be reported pursuant to § 73.71 are considered to be extraordinary conditions. Cyber security event notifications required to be

reported pursuant to § 73.77 are considered to be extraordinary conditions.

(g) *Processing of Safeguards Information on electronic systems.* (1) Safeguards Information may be stored, processed or produced on a stand-alone computer (or computer system) for processing of Safeguards Information. ''Stand-alone'' means a computer or computer system to which access is limited to individuals authorized access to Safeguards Information. A stand-alone computer or computer system shall not be physically or in any other way connected to a network accessible by users who are not authorized access to Safeguards Information.

(2) Each computer not located within an approved and lockable security storage container that is used to process Safeguards Information must have a removable storage medium with a bootable operating system. The bootable operating system must be used to load and initialize the computer. The removable storage medium must also contain the software application programs. Data may be saved on either the removable storage medium that is used to boot the operating system, or on a different removable storage medium. The removable storage medium must be secured in a locked security storage container when not in use.

(3) A mobile device (such as a laptop computer) may also be used for the processing of Safeguards Information provided the device is secured in a locked security storage container when not in use. Other systems may be used if approved for security by the appropriate NRC office.

(4) Any electronic system that has been used for storage, processing or production of Safeguards Information must be free of recoverable Safeguards Information prior to being returned to nonexclusive use.

(h) *Removal from Safeguards Information category.* Documents or other matter originally containing Safeguards Information must be removed from the Safeguards Information category at such time as the information no longer meets the criteria contained in this part. Care must be exercised to ensure that any document or other matter decontrolled not disclose Safeguards Information in some other form or be combined with other unprotected information to disclose Safeguards Information. The authority to determine that a document or other matter may be decontrolled will only be exercised by the NRC, with NRC approval, or in consultation with the individual or organization that made the original determination.

(i) *Destruction of matter containing Safeguards Information.* Documents or other matter containing Safeguards Information shall be destroyed when no longer needed. The information can be destroyed by burning, shredding or any other method that precludes reconstruction by means available to the public at large. Piece sizes no wider than one quarter inch composed of several pages or documents and thoroughly mixed are considered completely destroyed.

[73 FR 63574, Oct. 24, 2008, as amended at 80 FR 67275, Nov. 2, 2015]

§ 73.23 Protection of Safeguards Information—Modified Handling: Specific requirements.

This section contains specific requirements for the protection of Safeguards Information in the hands of any person subject to the requirements of § 73.21(a)(1)(ii) and research and test reactors that possess special nuclear material of moderate strategic significance or special nuclear material of low strategic significance. The requirements of this section distinguish Safeguards Information requiring modified handling requirements (SGI–M) from the specific Safeguards Information handling requirements applicable to facilities and materials needing a higher level of protection, as set forth in § 73.22.

(a) *Information to be protected.* The types of information and documents that must be protected as Safeguards Information—Modified Handling include non-public security-related requirements such as protective measures, interim compensatory measures, additional security measures, and the following, as applicable:

(1) *Physical protection.* Information not classified as Restricted Data or National Security Information related to physical protection, including:

(i) The composite physical security plan for the facility or site;

(ii) Site specific drawings, diagrams, sketches, or maps that substantially represent the final design features of the physical security system not easily discernible by members of the public;

(iii) Alarm system layouts showing the location of intrusion detection devices, alarm assessment equipment, alarm system wiring, emergency power sources for security equipment, and duress alarms not easily discernible by members of the public;

(iv) Physical security orders and procedures issued by the licensee for members of the security organization detailing duress codes, patrol routes and schedules, or responses to security contingency events;

(v) Site specific design features of plant security communications systems;

(vi) Lock combinations, mechanical key design, or passwords integral to the physical security system;

(vii) The composite facility guard qualification and training plan/measures disclosing features of the physical security system or response procedures;

(viii) Descriptions of security activities which disclose features of the physical security system or response measures;

(ix) Information relating to onsite or offsite response forces, including size, armament of the response forces, and arrival times of such forces committed to respond to security contingency events; and

(x) Engineering and safety analyses, security-related procedures or scenarios, and other information revealing site-specific details of the facility or materials if the unauthorized disclosure of such analyses, procedures, scenarios, or other information could reasonably be expected to have a significant adverse effect on the health and safety of the public or the common defense and security by significantly increasing the likelihood of theft, diversion, or sabotage of source, byproduct, or special nuclear material.

(2) *Physical protection in transit.* Information not classified as Restricted Data or National Security Information related to the physical protection of shipments of special nuclear material in less than a formula quantity (except for those materials covered under § 73.22), including:

(i) Information regarding transportation security measures, including physical security plans and procedures, immobilization devices, and escort requirements, more detailed than NRC regulations;

(ii) Scheduling and itinerary information for shipments (scheduling and itinerary information for shipments that are inherently self-disclosing, such as a shipment that created extensive news coverage or an announcement by a public official confirming receipt, may be decontrolled after shipment departure). Scheduling and itinerary information for shipments that are not inherently self-disclosing may be decontrolled 2 days after the shipment is completed. Scheduling and itinerary information used for the purpose of preplanning, coordination, and advance notification may be shared with others on a ''need to know'' basis and need not be designated as Safeguards Information-Modified Handling);

(iii) Arrangements with and capabilities of local police response forces, and locations of safe havens identified along the transportation route;

(iv) Details of alarm and communication systems, communication procedures, and duress codes;

(v) Procedures for response to security contingency events; and

(vi) Engineering or safety analyses, security-related procedures or scenarios and other information related to the protection of the transported material if the unauthorized disclosure of such analyses, procedures, scenarios, or other information could reasonably be expected to have a significant adverse effect on the health and safety of the public or the common defense and security by significantly increasing the likelihood of theft, diversion, or sabotage of source, byproduct, or special nuclear material.

(3) *Inspections, audits and evaluations.* Information not classified as National Security Information or Restricted Data pertaining to safeguards and security inspections and reports, including:

(i) Portions of inspection reports, evaluations, audits, or investigations that contain details of a licensee's or applicant's physical security system or that disclose uncorrected defects, weaknesses, or vulnerabilities in the system. Disclosure of corrected defects, weaknesses, or vulnerabilities is subject to an assessment taking into account such factors as trending analyses and the impacts of disclosure on licensees having similar physical security systems; and

(ii) Reports of investigations containing general information may be released after the corrective actions have been completed, unless withheld pursuant to other authorities, e.g., the Freedom of Information Act (5 U.S.C. 552).

(4) *Correspondence.* Portions of correspondence insofar as they contain Safeguards Information designated as Safeguards Information-Modified Handling, as set forth in paragraphs (a)(1) through (a)(3) of this section.

(5) Other information within the scope of Section 147 of the Atomic Energy Act of 1954, as amended, that the Commission determines by order or regulation could reasonably be expected to have a significant adverse effect on the health and safety of the public or the common defense and security by significantly increasing the likelihood of theft, diversion, or sabotage of source, byproduct, or special nuclear material or a facility.

(b) *Conditions for access.* (1) Except as the Commission may otherwise authorize, no person may have access to Safeguards Information designated as Safeguards Information-Modified Handling unless the person has an established ''need to know'' for the information and has undergone a Federal Bureau of Investigation criminal history records check using the procedures set forth in § 73.57.

(2) In addition, a person to be granted access to Safeguards Information must be trustworthy and reliable, based on a background check or other means approved by the Commission.

(3) The categories of individuals specified in 10 CFR 73.59 are exempt from the criminal history records check and background check requirements in paragraphs (b)(1) and (b)(2) of this section by virtue of their occupational status:

(4) For persons participating in an NRC adjudicatory proceeding, the ''need to know'' determination shall be made by the originator of the Safeguards Information designated as Safeguards Information-Modified Handling upon receipt of a request for access to the Safeguards Information designated as Safeguards Information-Modified Handling. Where the information is in the possession of the originator and the NRC staff, whether in its original form or incorporated into another document or other matter by the recipient, the NRC staff shall make the determination. In the event of a dispute regarding the ''need to know'' determination, the presiding officer of the proceeding shall determine whether the ''need to know'' findings in § 73.2 can be made.

(5) Except as the Commission may otherwise authorize, no person may disclose Safeguards Information designated as Safeguards Information-Modified Handling to any other person except as set forth in this section.

(c) *Protection while in use or storage.* (1) While in use, matter containing Safeguards Information designated as Safeguards Information-Modified Handling must be under the control of an individual authorized access to such information. This requirement is satisfied if the Safeguards Information designated as Safeguards Information-Modified Handling is attended by such an individual even though the information is in fact not constantly being used. Safeguards Information designated as Safeguards Information-Modified Handling within alarm stations, or rooms continuously occupied by authorized individuals, need not be locked in a file drawer or cabinet.

(2) While unattended, Safeguards Information designated as Safeguards Information-Modified Handling must be stored in a locked file drawer or cabinet. The container shall not identify the contents of the matter contained and must preclude access by individuals not authorized access in accordance with the provisions of this section. Knowledge of lock combinations or access to keys protecting Safeguards Information designated as Safeguards Information-Modified Handling must

be limited to a minimum number of personnel for operating purposes who have a ''need to know'' and are otherwise authorized access to Safeguards Information in accordance with the provisions of this Part. Access to lock combinations must be strictly controlled so as to prevent disclosure to an individual not authorized access to Safeguards Information designated as Safeguards Information-Modified Handling.

(d) *Preparation and marking of documents or other matter*. (1) Each document or other matter that contains Safeguards Information designated as Safeguards Information-Modified Handling as described in § 73.23(a) and in this section must be marked to indicate the presence of Safeguards Information with modified handling requirements in a conspicuous manner on the top and bottom of each page. The first page of the document or other matter must also contain:

(i) The name, title, and organization of the individual authorized to make a ''Safeguards Information designated as Safeguards Information-Modified Handling'' determination, and who has determined that the document or other matter contains Safeguards Information designated as Safeguards Information-Modified Handling;

(ii) The date the determination was made; and

(iii) An indication that unauthorized disclosure will be subject to civil and criminal sanctions.

(2) In addition to the markings at the top and bottom of each page, any transmittal letters or memoranda to or from the NRC which do not in themselves contain Safeguards Information designated as Safeguards Information-Modified Handling shall be marked to indicate that attachments or enclosures contain Safeguards Information designated as Safeguards Information-Modified Handling but that the transmittal document does not (*i.e.*, ''When separated from Safeguards Information designated as Safeguards Information-Modified Handling enclosure(s), this document is decontrolled provided the transmittal document does not otherwise warrant protection from unauthorized disclosure'').

(3) Any transmittal document or other matter forwarding Safeguards Information designated as Safeguards Information-Modified Handling must alert the recipient that protected information is enclosed. Certification that a document or other matter contains Safeguards Information designated as Safeguards Information-Modified Handling must include the name and title of the certifying official and date designated. Portion marking is required only for correspondence to and from the NRC (*i.e.*, cover letters, but not attachments) that contains Safeguards Information designated as Safeguards Information-Modified Handling. The portion marking must be sufficient to allow the recipient to identify and distinguish those sections of the transmittal document or other information containing the Safeguards Information from non-Safeguards Information.

(4) Marking of documents or other matter containing or transmitting Safeguards Information with modified handling requirements shall, at a minimum include the words ''Safeguards Information-Modified Handling'' to ensure identification of protected information for the protection of facilities and material covered by § 73.23.

(e) *Reproduction of matter containing Safeguards Information designated as Safeguards Information-Modified Handling*. Safeguards Information designated as Safeguards Information-Modified Handling may be reproduced to the minimum extent necessary, consistent with need, without permission of the originator. Equipment used to reproduce Safeguards Information designated as Safeguards Information-Modified Handling must be evaluated to ensure that unauthorized individuals cannot access the information (e.g. , unauthorized individuals cannot access Safeguards Information by gaining access to retained memory or network connectivity).

(f) *External transmission of documents and material*. (1) Documents or other matter containing Safeguards Information designated as Safeguards Information-Modified Handling, when transmitted outside an authorized place of use or storage, must be packaged in two sealed envelopes or wrappers to preclude disclosure of the presence of

protected information. The inner envelope or wrapper must contain the name and address of the intended recipient and be marked on both sides, top and bottom, with the words ''Safeguards Information-Modified Handling.'' The outer envelope or wrapper must be opaque, addressed to the intended recipient, must contain the address of the sender, and may not bear any markings or indication that the document contains Safeguards Information designated as Safeguards Information-Modified Handling.

(2) Safeguards Information designated Safeguards Information-Modified Handling may be transported by any commercial delivery company that provides service with computer tracking features, U.S. first class, registered, express, or certified mail, or by any individual authorized access pursuant to these requirements.

(3) Except under emergency or extraordinary conditions, Safeguards Information designated as Safeguards Information-Modified Handling must be transmitted electronically only by protected telecommunications circuits (including facsimile) or encryption by a method (Federal Information Processing Standard [FIPS] 140–2 or later) approved by the appropriate NRC office. For the purpose of this section, emergency or extraordinary conditions are defined as any circumstances that require immediate communications in order to report, summon assistance for, or respond to a security contingency event or an event that has potential security significance. Physical security events required to be reported pursuant to §73.71 are considered to be extraordinary conditions.

(g) *Processing of Safeguards Information-Modified Handling on electronic systems*. (1) Safeguards Information designated for modified handling may be stored, processed or produced on a computer or computer system, provided that the system is assigned to the licensee's or contractor's facility. Safeguards Information designated as Safeguards Information-Modified Handling files must be protected, either by a password or encryption, to prevent unauthorized individuals from gaining access. Word processors such as typewriters are not subject to these requirements as long as they do not transmit information off-site.

NOTE: If Safeguards Information designated as Safeguards Information-Modified Handling is produced on a typewriter, the ribbon must be properly marked and be removed and stored in the same manner as other Safeguards Information designated as Safeguards Information-Modified Handling.

(2) Safeguards Information designated as Safeguards Information-Modified Handling files may be transmitted over a network if the file is encrypted. In such cases, the licensee will select a commercially available encryption system that the National Institute of Standards and Technology (NIST) has validated as conforming to Federal Information Processing Standards (FIPS) 140–2 or later. Safeguards Information designated as Safeguards Information-Modified Handling files shall be properly labeled to indicate the presence of Safeguards Information with modified handling requirements and saved to removable matter and stored in a locked file drawer or cabinet.

(3) A mobile device (such as a laptop computer) may also be used for the processing of Safeguards Information designated as Safeguards Information-Modified Handling provided the device is secured in an appropriate locked storage container when not in use. Other systems may be used if approved for security by the appropriate NRC office.

(4) Any electronic system that has been used for storage, processing or production of Safeguards Information must be free of recoverable Safeguards Information designated as Safeguards Information-Modified Handling prior to being returned to nonexclusive use.

(h) *Removal from Safeguards Information-Modified Handling category*. Documents or other matter originally containing Safeguards Information designated as Safeguards Information-Modified Handling must be removed from the Safeguards Information category at such time as the information no longer meets the criteria contained in this Part. Care must be exercised to ensure that any document or other matter decontrolled shall not disclose Safeguards Information in some other

form or be combined with other unprotected information to disclose Safeguards Information. The authority to determine that a document or other matter may be decontrolled will only be exercised by the NRC, with NRC approval, or in consultation with the individual or organization that made the original determination.

(i) *Destruction of matter containing Safeguards Information designated as Safeguards Information-Modified Handling.* Documents or other matter containing Safeguards Information shall be destroyed when no longer needed. The information can be destroyed by burning, shredding, or any other method that precludes reconstruction by means available to the public at large. Piece sizes no wider than one quarter inch composed of several pages or documents and thoroughly mixed are considered completely destroyed.

[73 FR 63577, Oct. 24, 2008]

§ 73.24 Prohibitions.

(a) Except as specifically approved by the Nuclear Regulatory Commission, no shipment of special nuclear material shall be made in passenger aircraft in excess of (1) 20 grams or 20 curies, whichever is less, of plutonium or uranium-233, or (2) 350 grams of uranium-235 (contained in uranium enriched to 20 percent or more in the U-235 isotope).

(b) Unless otherwise approved by the Nuclear Regulatory Commission, no licensee may make shipments of special nuclear material in which individual shipments are less than a formula quantity, but the total quantity in shipments in transit at the same time could equal or exceed a formula quantity, unless either of the following conditions are met:

(1) The licensee shall confirm and log the arrival at the final destination of each individual shipment and retain the log for three years from the date of the last entry in the log. The licensee shall also schedule shipments to ensure that the total quantity for two or more shipments in transit at the same time does not equal or exceed the formula quantity, or

(2) Physical protection in accordance with the requirements of §§ 73.20, 73.25, and 73.26 is provided by the licensee for such shipments as appropriate so that the total quantity of special nuclear material in the remaining shipments not so protected, and in transit at the same time, does not equal or exceed a formula quantity.

[44 FR 68188, Nov. 28, 1979, as amended at 53 FR 19257, May 27, 1988]

PHYSICAL PROTECTION OF SPECIAL NUCLEAR MATERIAL IN TRANSIT

§ 73.25 Performance capabilities for physical protection of strategic special nuclear material in transit.

(a) To meet the general performance objective and requirements of § 73.20 an in-transit physical protection system shall include the performance capabilities described in paragraphs (b) through (d) of this section unless otherwise authorized by the Commission.

(b) Restrict access to and activity in the vicinity of transports and strategic special nuclear material. To achieve this capability the physical protection system shall:

(1) Minimize the vulnerability of the strategic special nuclear material by using the following subfunctions and procedures:

(i) Preplanning itineraries for the movement of strategic special nuclear material;

(ii) Periodically updating knowledge of route conditions for the movement of strategic special nuclear material;

(iii) Maintaining knowledge of the status and position of the strategic special nuclear material en route; and

(iv) Determining and communicating alternative itineraries en route as conditions warrant.

(2) Detect and delay any unauthorized attempt to gain access or introduce unauthorized materials by stealth or force into the vicinity of transports and strategic special nuclear material using the following subsystems and subfunctions:

(i) Controlled access areas to isolate strategic special nuclear material and transports to assure that unauthorized persons shall not have direct access to, and unauthorized materials shall not be introduced into the vicinity of, the transports and strategic special nuclear material, and

(ii) Access detection subsystems and procedures to detect, assess and communicate any unauthorized penetration (or such attempts) of a controlled access area by persons, vehicles or materials so that the response will satisfy the general performance objective and requirements of § 73.20(a).

(3) Detect attempts to gain unauthorized access or introduce unauthorized materials into the vicinity of transports by deceit using the following subsystems and subfunctions:

(i) Access authorization controls and procedures to provide current authorization schedules and access criteria for persons, materials and vehicles; and

(ii) Access controls and procedures to verify the identity of persons, materials and vehicles, to assess such identity against current authorization schedules and access criteria before permitting access, and to initiate response measures to deny unauthorized entries.

(c) Prevent or delay unauthorized entry or introduction of unauthorized materials into, and unauthorized removal of, strategic special nuclear material from transports. To achieve this capability the physical protection system shall:

(1) Detect attempts to gain unauthorized entry or introduce unauthorized materials into transports by deceit using the following subsystems and subfunctions:

(i) Access authorization controls and procedures to provide current authorization schedules and entry criteria for access into transports for both persons and materials; and

(ii) Entry controls and procedures to verify the identity of persons and materials and to permit transport entry only to those persons and materials specified by the current authorization schedules and entry criteria.

(2) Detect attempts to gain unauthorized entry or introduce unauthorized material into transports by stealth or force using the following subsystems and subfunctions:

(i) Transport features to delay access to strategic special nuclear material sufficient to permit the detection and response systems to function so as to satisfy the general performance objective and requirements of § 73.20(a);

(ii) Inspection and detection subsystems and procedures to detect unauthorized tampering with transports and cargo containers; and

(iii) Surveillance subsystems and procedures to detect, assess and communicate any unauthorized presence of persons or materials and any unauthorized attempt to penetrate the transport so that the response will satisfy the general performance objective and requirements of § 73.20(a).

(3) Prevent unauthorized removal of strategic special nuclear material from transports by deceit using the following subsystems and subfunctions:

(i) Authorization controls and procedures to provide current schedules for authorized removal of strategic special nuclear material which specify the persons authorized to remove and receive the material, the authorized times for such removal and receipt and authorized places for such removal and receipt.

(ii) Removal controls and procedures to establish activities for transferring cargo in emergency situations; and

(iii) Removal controls and procedures to permit removal of strategic special nuclear material only after verification of the identity of persons removing or receiving the strategic special nuclear material, and after verification of the identity and integrity of the strategic special nuclear material being removed from transports.

(4) Detect attempts to remove strategic special nuclear material from transports by stealth or force using the following subsystems and subfunctions:

(i) Transport features to delay unauthorized strategic special nuclear material removal attempts sufficient to assist detection and permit a response to satisfy the general performance objective and requirements of § 73.20(a); and

(ii) Detection subsystems and procedures to detect, assess and communicate any attempts at unauthorized removal of strategic special nuclear material so that response to the attempt can be such as to satisfy the general performance objective and requirements of § 73.20(a).

(d) Respond to safeguards contingencies and emergencies to assure that

the two capabilities in paragraphs (b) and (c) of this section are achieved, and to engage and impede adversary forces until local law enforcement forces arrive. To achieve this capability, the physical protection system shall:

(1) Respond rapidly and effectively to safeguards contingencies and emergencies using the following subsystems and subfunctions:

(i) A security organization composed of trained and qualifed personnel, including armed escorts, one of whom is designated as escort commander, with procedures for command and control, to execute response functions.

(ii) Assessment procedures to assess the nature and extent of security related incidents.

(iii) A predetermined plan to respond to safeguards contingency events.

(iv) Equipment and procedures to enable responses to security related incidents sufficiently rapid and effective to achieve the predetermined objective of each action.

(v) Equipment, vehicle design features, and procedures to protect security organization personnel, including those at the movement control center, in their performance of assessment and response related functions.

(2) Transmit detection, assessment and other response related information using the following subsystems and subfunctions:

(i) Communications equipment and procedures to rapidly and accurately transmit security information among armed escorts.

(ii) Equipment and procedures for two-way communications between the escort commander and the movement control center to rapidly and accurately transmit assessment information and requests for assistance by local law enforcement forces, and to coordinate such assistance.

(iii) Communications equipment and procedures for the armed escorts and the movement control center personnel to notify local law enforcement forces of the need for assistance.

(3) Establish liaisons with local law enforcement authorities to arrange for assistance en route.

(4) Assure that a single adversary action cannot destroy the capability of armed escorts to notify the local law enforcement forces of the need for assistance.

[44 FR 68188, Nov. 28, 1979]

§ 73.26 Transportation physical protection systems, subsystems, components, and procedures.

(a) A transportation physical protection system established pursuant to the general performance objectives and requirements of § 73.20 and performance capability requirements of § 73.25 shall include, but are not necessarily limited to, the measures specified in paragraphs (b) through (l) of this section. The Commission may require, depending on the individual transportation conditions or circumstances, alternate or additional measures deemed necessary to meet the general performance objectives and requirements of § 73.20. The Commission also may authorize protection measures other than those required by this section if, in its opinion, the overall level of performance meets the general performance objectives and requirements of § 73.20 and the performance capability requirements of § 73.25.

(b) *Planning and scheduling.* (1) Shipments shall be scheduled to avoid regular patterns and preplanned to avoid areas of natural disaster or civil disorders, such as strikes or riots. Such shipments shall be planned in order to avoid storage times in excess of 24 hours and to assure that deliveries occur at a time when the receiver at the final delivery point is present to accept the shipment.

(2) Arrangements shall be made with law enforcement authorities along the route of shipments for their response to an emergency or a call for assistance.

(3) Security arrangements for each shipment shall be approved by the Nuclear Regulatory Commission prior to the time for the seven-day notice required by § 73.72. Information to be supplied to the Commission in addition to the general security plan information is as follows:

(i) Shipper, consignee, carriers, transfer points, modes of shipment,

(ii) Point where escorts will relinquish responsibility or will accept responsibility for the shipment,

(iii) Arrangements made for transfer of shipment security, and

(iv) Security arrangements at point where escorts accept responsibility for an import shipment.

(4) Hand-to-hand receipts shall be completed at origin and destination and at all points enroute where there is a transfer of custody.

(c) *Export/import shipments.* (1) A licensee who imports a formula quantity of strategic special nuclear material shall make arrangements to assure that the material will be protected in transit as follows:

(i) An individual designated by the licensee or his agent, or as specified by a contract of carriage, shall confirm the container count and examine locks and/or seals for evidence of tampering, at the first place in the United States at which the shipment is discharged from the arriving carrier.

(ii) The shipment must be protected at all times within the geographical limits of the United States as provided in this section and §§ 73.25 and 73.27. The licensee shall retain each record required by these sections for three years after the close of period for which the licensee possesses the special nuclear material under each license authorizing the licensee to ship this material, and superseded material for three years after each change.

(2) A licensee who exports a formula quantity of strategic special nuclear material shall comply with the requirements of this section and §§ 73.25 and 73.27, as applicable, up to the first point where the shipment is taken off the transport outside the United States. The licensee shall retain each record required by these sections for three years after the close of period for which the licensee possesses the special nuclear material under each license authorizing the licensee to export this material, and superseded material for three years after each change.

(d) *Security organization.* (1) The licensee or his agent shall establish a transportation security organization, including armed escorts, armed response personnel or guards, and a movement control center manned and equipped to monitor and control shipments, to communicate with local law enforcement authorities, and to respond to safeguards contingencies.

(2) At least one full time member of the security organization who has the authority to direct the physical protection activities of the security organization shall be on duty at the movement control center during the course of any shipment.

(3) The licensee or the licensee's agent shall establish, maintain, and follow a written management system to provide for the development, revision, implementation, and enforcement of transportation physical protection procedures. The licensee or the agent shall retain as a record the current management system for three years after the close of period for which the licensee possesses the special nuclear material under the license for which the system was developed and, if any portion of the system is superseded, retain the superseded material for three years after each change. The system shall include:

(i) Written security procedures which document the structure of the transportation security organization and which detail the duties of drivers and escorts and other individuals responsible for security; and

(ii) Provision for written approval of such procedures and any revisions thereto by the individual with overall responsibility for the security function.

(4) Neither the licensee nor the licensee's agent shall permit an individual to act as an escort or other security organization member unless the individual has been trained, equipped, and qualified to perform each assigned security job duty in accordance with appendix B, of this part, ''General Criteria for Security Personnel.'' Upon the request of an authorized representative of the Commission, the licensee or the agent shall demonstrate the ability of the physical security personnel to carry out their assigned duties and responsibilities. Armed escorts shall requalify in accordance with appendix B to this part at least every 12 months. Each requalification must be documented. The licensee or the agent shall retain documentation of the initial qualification for the term of employment and of each requalification

as a record for three years from the date of the requalification.

(5) Armed escort and armed response force personnel armament shall include handguns, shotguns, and semiautomatic rifles, as described in appendix B to this part.

(e) *Contingency and Response Plans and Procedures.* (1) The licensee or the licensee's agent shall establish, maintain, and follow a written safeguards contingency plan for dealing with threats, thefts, and radiological sabotage related to strategic special nuclear material in transit subject to the provisions of this section. This safeguards contingency plan must be in accordance with the criteria in appendix C of this part, ''Licensee Safeguards Contingency Plan.'' The licensee or the agent shall retain the contingency plan as a record for three years after the close of period for which the licensee possesses the special nuclear material under each license for which the plan is used and superseded material for three years after each change.

(2) Upon detection of abnormal presence or activity of persons or vehicles attempting to penetrate a moving convoy or persons attempting to gain access to a parked cargo vehicle or upon evidence or indication of penetration of the cargo vehicle the armed escorts or other armed response personnel shall:

(i) Determine whether or not a threat exists;

(ii) Assess the extent of the threat, if any;

(iii) Take immediate concurrent measures to neutralize the threat by:

(A) Making the necessary tactical moves to prevent or impede acts of radiological sabotage or theft of strategic special nuclear material, and

(B) Informing local law enforcement agencies of the threat and requesting assistance.

(3) The licensee or his agent shall instruct every armed escort and all armed response personnel to prevent or impede acts of radiological sabotage or theft of strategic special material by using sufficient force to counter the force directed at him including the use of deadly force when armed escorts or armed response personnel have a reasonable belief that it is necessary in self-defense or in the defense of others.

(f) *Transfer and storage of strategic special nuclear material for domestic shipments.* (1) Strategic special nuclear material shall be placed in a protected area at transfer points if transfer is not immediate from one transport to another. Where a protected area is not available a controlled access area shall be established for the shipment. The transport may serve as a controlled access area.

(2) All transfers shall be protected by at least seven armed escorts or other armed personnel—one of whom shall serve as commander. At least five of the armed personnel (including the commander) shall be available to protect the shipment and at least three of the five shall keep the strategic special nuclear material under continuous surveillance while it is at the transfer point. The two remaining armed personnel shall take up positions at a remote monitoring location. The remote location may be a radio-equipped vehicle or a nearby place, apart from the shipment area, so that a single act cannot remove the capability of the personnel protecting the shipment for calling for assistance. Each of the seven armed escorts or other armed personnel shall be capable of maintaining communication with each other. The commander shall have the capability to communicate with the personnel at the remote location and with local law enforcement agencies for emergency assistance. In addition, the armed escort personnel at the remote location shall have the capability to communicate with the law enforcement agencies and with the shipment movement control center. The commander shall call the remote location at least every 30 minutes to report the status of the shipment. If the calls are not received within the prescribed time, the personnel in the remote location shall request assistance from the law enforcement authorities, notify the shipment movement control center and initiate the appropriate contingency plans. Armed escorts or other armed personnel shall observe the opening of the cargo compartment of the incoming transport and ensure that the shipment is complete by checking locks and seals. A shipment loaded onto or transferred to another transport shall

be checked to assure complete loading or transfer. Continuous visual surveillance of the cargo compartment shall be maintained up to the time the transport departs from the terminal. The escorts shall observe the transport until it has departed and shall notify the licensee or his agent of the latest status immediately thereafter.

(g) *Access control subsystems and procedures.* (1) A numbered picture badge identification procedure shall be used to identify all individuals who will have custody of a shipment. The identification procedure shall require that the individual who has possession of the strategic special nuclear material shall have, in advance, identification picture badges of all individuals who are to assume custody for the shipment. The shipment shall be released only when the individual who has possession of strategic special nuclear material has assured positive identification of all of the persons assuming custody for the shipment by comparing the copies of the identification badges that have been received in advance to the identification badges carried by the individuals who will assume custody of the shipment.

(2) Access to protected areas, controlled access areas, transports, escort vehicles, aircraft, rail cars, and containers where strategic special nuclear material is located shall be limited to individuals who have been properly identified and have been authorized access to these areas.

(3) Strategic special nuclear material shall be shipped in containers that are protected by tamper-indicating seals. The containers also shall be locked if they are not in another locked container or transport. The outermost container or transport also shall be protected by tamper-indicating seals.

(h) *Test and maintenance programs.* The licensee or his agent shall establish, maintain and follow a test and maintenance program for communications equipment and other physical protection related devices and equipment used pursuant to this section which shall include the following:

(1) Tests and inspections shall be conducted during the installation, and construction of physical protection related subsystems and components to assure that they comply with their respective design criteria and performance specifications.

(2) Preoperational tests and inspections shall be conducted for physical protection related subsystems and components to demonstrate their effectiveness, availability, and reliability with respect to their respective design criteria and performance specifications.

(3) Operational tests and inspections shall be conducted for physical protection related subsystems and components to assure their maintenance in an operable and effective condition.

(4) Preventive maintenance programs shall be established for physical protection related subsystems and components to assure their continued maintenance in an operable and effective condition.

(5) All physical protection related subsystems and components shall be maintained in operable condition. Corrective action procedures and compensatory measures shall be developed and employed to assure that the effectiveness of the physical protection system is not reduced by any single failure or other contingencies affecting the operation of the physical protection related equipment or structures.

(6) The transportation security program must be reviewed at least every 12 months by individuals independent of both security program management and personnel who have direct responsibility for implementation of the security program. The review must include an audit of transportation security procedures and practices, an evaluation of the effectiveness of the transportation physical protection system, an audit of the transportation physical protection system testing and maintenance program, and an audit of commitments established for response by local law enforcement authorities. The results and recommendations of the review, management's findings on whether the transportation security program is currently effective, and any actions taken as a result of recommendations from prior reviews, must be documented in a report to the responsible organization management and to corporate management at least one level higher than that having responsibility

for the day-to-day plant operation. These reports must be maintained in an auditable form, available for inspection for a period of 3 years.

(i) *Shipment by road.* (1) A detailed route plan shall be prepared which shows the routes to be taken, the refueling and rest stops, and the call-in times to the movement control center. All shipments shall be made on primary highways with minimum use of secondary roads. All shipments shall be made without intermediate stops except for refueling, rest or emergency stops.

(2) Cargo compartments of the trucks or trailers shall be locked and protected by tamper-indicating seals.

(3) The shipment shall be protected by one of the following methods:

(i) A specially designed cargo vehicle truck or trailer that reduces the vulnerability to theft. Design features of the truck or trailer shall permit immobilization of the truck or of the cargo-carrying portion of the vehicle and shall provide a deterrent to physical penetration of the cargo compartment. Two separate escort vehicles shall accompany the cargo vehicle. There shall be a total of seven armed escorts with at least two in the cargo vehicle. Escorts may also operate the cargo and escort vehicles.

(ii) An armored car cargo vehicle. Three separate escort vehicles shall accompany such a cargo vehicle. There shall be a total of seven armed escorts, with at least two in the cargo vehicle. Escorts may also operate the cargo and escort vehicles.

(4) All escort vehicles shall be bullet-resisting.

(5) Procedures shall be established to assure that no unauthorized persons or materials are on the cargo vehicle before strategic special nuclear material is loaded, or on the escort vehicles, immediately before the trip begins.

(6) Cargo and escort vehicles shall maintain continuous intraconvoy two-way communication. In addition at least two of the vehicles shall be equipped with radio telephones having the capability of communicating with the movement control center. A redundant means of communication shall also be available. Calls to the movement control center shall be made at least every half hour to convey the status and position of the shipment. In the event no call is received in accordance with these requirements, the licensee or his agent shall immediately notify the law enforcement authorities and the Director, Division of Physical and Cyber Security Policy, Office of Nuclear Security and Incident Response, and initiate the appropriate contingency plan.

(7) At refueling, rest, or emergency stops at least seven armed escorts or other armed personnel shall be available to protect the shipment and at least three armed escorts or other armed personnel shall maintain continuous visual surveillance of the cargo compartment.

(8) Transfers to and from other modes of transportation shall be in accordance with paragraph (f) of this section.

(j) *Shipment by air.* (1) All shipments on commercial cargo aircraft shall be accompanied by two armed escorts who shall be able to converse in a common language with the captain of the aircraft.

(2) Transfers of these shipments shall be minimized and shall be conducted in accordance with paragraph (f) of this section. Such shipments shall be scheduled so that the strategic special nuclear material is loaded last and unloaded first.

(3) At scheduled stops, at least seven armed escorts or other armed personnel shall be available to protect the shipment and at least three armed escorts or other armed personnel shall maintain continuous visual surveillance of the cargo compartment.

(4) Export shipments shall be accompanied by two armed escorts from the last terminal in the United States until the shipment is unloaded at a foreign terminal and primary responsibility for physical protection is assumed by agents of the consignee. While on foreign soil, the escorts may surrender their weapons to legally constituted local authorities. After leaving the last terminal in the United States the shipment shall be scheduled with no intermediate stops.

(5) Import shipments shall be accompanied by two armed escorts at all times within the geographical limits of the United States. These escorts shall

provide physical protection for the shipment until relieved by verified agents of the U.S. consignee.

(6) Procedures shall be established to assure that no unauthorized persons or material are on the aircraft before strategic special nuclear material is loaded on board.

(7) Arrangements shall be made at all domestic airports to assure that the seven required armed escorts or other armed personnel are available and that the required security measures will be taken upon landing.

(8) Arrangements shall be made at the foreign terminal at which the shipment is to be unloaded to assure that security measures will be taken on arrival.

(k) *Shipment by rail.* (1) A shipment by rail shall be escorted by seven armed escorts in the shipment car or an escort car next to the shipment car of the train. At least three escorts shall keep the shipment car under continuous visual surveillance. Escorts shall detrain at stops when practicable and time permits to maintain the shipment cars under continuous visual surveillance and to check car or container locks and seals.

(2) Procedures shall be established to assure that no unauthorized persons or materials are on the shipment or escort car before strategic special nuclear material is loaded on board.

(3) Only containers weighing 5,000 lbs or more shall be shipped on open rail cars.

(4) A voice communication capability between the escorts and the movement control center shall be maintained. A redundant means of continuous communication also shall be available. Calls to the movement control center shall be made at least every half hour to convey the status and position of the shipment. In the event no call is received in accordance with these requirements, the licensee or his agent shall immediately notify the law enforcement authorities and the appropriate Nuclear Regulatory Commission Regional Office listed in appendix A of this part and initiate their contingency plan.

(5) Transfer to and from other modes of transportation shall be in accordance with paragraph (f) of this section.

(l) *Shipment by sea.* (1) Shipments shall be made only on container-ships. The strategic special nuclear material container(s) shall be loaded into exclusive use cargo containers conforming to American National Standards Institute (ANSI) Standard MH5.1—''Basic Requirements for Cargo Containers'' (1971) or International Standards Organization (ISO) 1496, ''General Cargo Containers'' (1978). Locks and seals shall be inspected by the escorts whenever access is possible. The ANSI Standard MH5.1 (1971) and the (ISO) 1496 (1978), have been approved for incorporation by reference by the Director of the Federal Register. A copy of each of these standards is available for inspection at the NRC Library, 11545 Rockville Pike, Rockville, Maryland 20852-2738.

(2) All shipments shall be accompanied by two armed escorts who shall be able to converse in a common language with the captain of the ship.

(3) Minimum domestic ports of call shall be scheduled and there shall be no scheduled transfer to other vessels after the shipment leaves the last port in the United States. Transfer to and from other modes of transportation shall be in accordance with paragraph (f) of this section.

(4) At all ports of call the escorts shall ensure that the shipment is not removed. At least two armed escorts or other armed personnel shall maintain continuous visual surveillance of the cargo area where the container is stored up to the time the ship departs.

(5) Export shipments shall be accompanied by two armed escorts from the last port in the United States until the shipment is unloaded at a foreign terminal and prime responsibility for physical protection is assumed by agents of the consignee. While on foreign soil, the escorts may surrender their weapons to legally constituted local authorities.

(6) Import shipments shall be accompanied by two armed escorts at all times within the geographical limits of the United States. These escorts shall provide physical protection for the shipment until relieved by verified agents of the U.S. consignee.

(7) Ship-to-shore communications shall be available, and a ship-to-shore

contact shall be made every six hours to relay position information, and the status of the shipment.

(8) Arrangements shall be made at the foreign terminals at which the shipment is to be unloaded to assure that security measures will be taken upon arrival.

[44 FR 68190, Nov. 28, 1979, as amended at 46 FR 2025, Jan. 8, 1981; 53 FR 19257, May 27, 1988; 57 FR 33430, July 29, 1992; 57 FR 61787, Dec. 29, 1992; 59 FR 50689, Oct. 5, 1994; 67 FR 3586, Jan. 25, 2002; 68 FR 14530, Mar. 26, 2003; 68 FR 23575, May 5, 2003; 74 FR 62684, Dec. 1, 2009; 83 FR 58723, Nov. 21, 2018]

§ 73.27 Notification requirements.

(a)(1) A licensee who delivers formula quantities of strategic special nuclear material to a carrier for transport shall immediately notify the consignee by telephone, telegraph, or teletype, of the time of departure of the shipment, and shall notify or confirm with the consignee the method of transportation, including the names of carriers, and the estimated time of arrival of the shipment at its destination.

(2) In the case of a shipment (f.o.b.) the point where it is delivered to a carrier for transport, a licensee shall, before the shipment is delivered to the carrier, obtain written certification from the licensee who is to take delivery of the shipment at the f.o.b. point that the physical protection arrangements required by §§ 73.25 and 73.26 for licensed shipments have been made. When a contractor exempt from the requirements for a Commission license is the consignee of a shipment, the licensee shall, before the shipment is delivered to the carrier, obtain written certification from the contractor who is to take delivery of the shipment at the f.o.b. point that the physical protection arrangements required by the United States Department of Energy Order Nos. 5632.1 or 5632.2, as appropriate, have been made.

(3) A licensee who delivers formula quantities of strategic special nuclear material to a carrier for transport or releases such special nuclear material f.o.b. at the point where it is delivered to a carrier for transport shall also make arrangements with the consignee to be notified immediately by telephone and telegraph, teletype, or cable, of the arrival of the shipment at its destination or of any such shipment that is lost or unaccounted for after the estimated time of arrival at its destination.

(b) Each licensee who receives a shipment of formula quantities of strategic special nuclear material shall immediately notify by telephone and telegraph or teletype, the person who delivered the material to a carrier for transport and the Director, Division of Physical and Cyber Security Policy, Office of Nuclear Security and Incident Response, of the arrival of the shipment at its destination. When a United States Department of Energy license-exempt contractor is the consignee, the licensee who is the consignor shall notify by telephone and telegraph, or teletype, the Director, Division of Physical and Cyber Security Policy, Office of Nuclear Security and Incident Response of the arrival of the shipment at its destination immediately upon being notified of the receipt of the shipment by the license-exempt contractor as arranged pursuant to paragraph (a)(3) of this section. In the event such a shipment fails to arrive at its destination at the estimated time, or in the case of an export shipment, the licensee who exported the shipment, shall immediately notify by telephone and telegraph or teletype, the Director, Division of Physical and Cyber Security Policy, Office of Nuclear Security and Incident Response, and the licensee or other person who delivered the material to a carrier for transport. The licensee who made the physical protection arrangements shall also immediately notify by telephone and telegraph, or teletype, the Director, Division of Physical and Cyber Security Policy, Office of Nuclear Security and Incident Response of the action being taken to trace the shipment.

(c) Each licensee who makes arrangements for physical protection of a shipment of formula quantities of strategic special nuclear material as required by §§ 73.25 and 73.26 shall immediately conduct a trace investigation of any shipment that is lost or unaccounted for after the estimated arrival time and

file a report with the Commission as specified in § 73.71.

[44 FR 68192, Nov. 28, 1979, as amended at 67 FR 3586, Jan. 25, 2002; 68 FR 14530, Mar. 26, 2003; 68 FR 23575, May 5, 2003; 74 FR 62684, Dec. 1, 2009; 83 FR 58723, Nov. 21, 2018]

§ 73.28 Security background checks for secure transfer of nuclear materials.

Licensees are excepted from the security background check provisions in Section 170I of the AEA if they have not received Orders from the Nuclear Regulatory Commission containing requirements for background checks for trustworthiness and reliability that include fingerprinting and criminal history record checks as a prerequisite for unescorted access to radioactive materials.

[72 FR 3027, Jan. 24, 2007]

§ 73.35 Requirements for physical protection of irradiated reactor fuel (100 grams or less) in transit.

Each licensee who transports, or delivers to a carrier for transport, in a single shipment, a quantity of irradiated reactor fuel weighing 100 grams (0.22 pounds) or less in net weight of irradiated fuel, exclusive of cladding or other structural or packaging material, which has a total external radiation level in excess of 1 Gray (100 rad) per hour at a distance of 1 meter (3.3 feet) from any accessible surface without intervening shielding, shall follow the physical protection requirements for category 1 quantities of radioactive material in subpart D of part 37 of this chapter.

[78 FR 17021, Mar. 19, 2013, as amended at 86 FR 43402, Aug. 9, 2021]

§ 73.37 Requirements for physical protection of irradiated reactor fuel in transit.

(a) *Performance objectives.* (1) Each licensee who transports, or delivers to a carrier for transport, in a single shipment, a quantity of irradiated reactor fuel[1] in excess of 100 grams (0.22 lbs) in net weight of irradiated fuel, exclusive of cladding or other structural or packaging material, which has a total external radiation level in excess of 1 gray (100 rad) per hour at a distance of 1 meter (3.3 feet) from any accessible surface without intervening shielding, shall establish and maintain, or make arrangements for, and assure the proper implementation of, a physical protection system for shipments of such material that will achieve the following objectives:

(i) Minimize the potential for theft, diversion, or radiological sabotage of spent nuclear fuel shipments; and

(ii) Facilitate the location and recovery of spent nuclear fuel shipments that may have come under the control of unauthorized persons.

(2) To achieve these objectives, the physical protection system shall:

(i) Provide for early detection and assessment of attempts to gain unauthorized access to, or control over, spent nuclear fuel shipments;

(ii) Delay and impede attempts at theft, diversion, or radiological sabotage of spent nuclear fuel shipments; and

(iii) Provide for notification to the appropriate response forces of any attempts at theft, diversion, or radiological sabotage of a spent nuclear fuel shipment.

(b) *General requirements.* To achieve the performance objectives of paragraph (a) of this section, a physical protection system established and maintained, or arranged for, by the licensee shall include the following elements:

(1) *Preplan and coordinate spent nuclear fuel shipments.* Each licensee shall:

(i) Ensure that each armed escort, as defined in § 73.2, is instructed on the use of force sufficient to counter the force directed at the person, including the use of deadly force when the armed escort has a reasonable belief that the use of deadly force is necessary in self-defense or in the defense of others, or any other circumstances, as authorized by applicable Federal and State laws. This deadly force training requirement does not apply to members of local law enforcement agencies (LLEAs) performing escort duties for spent nuclear fuel shipments.

(ii) Preplan and coordinate shipment itineraries to ensure that the receiver

[1] For purposes of 10 CFR 73.37, the terms ''irradiated reactor fuel'' and ''spent nuclear fuel'' are used interchangeably.

at the final delivery point is present to accept the shipment.

(iii) Ensure written certification of any transfer of custody.

(iv) Preplan and coordinate shipment information no later than 2 weeks prior to the shipment or prior to the first shipment of a series of shipments with the governor of a State, or the governor's designee, of a shipment of spent nuclear fuel through or across the boundary of the State, in order to:

(A) Minimize intermediate stops and delays;

(B) Arrange for State law enforcement escorts;

(C) Arrange for positional information sharing when requested; and

(D) Develop route information, including the identification of safe havens.

(v) Arrange with local law enforcement authorities along the shipment route, including U.S. ports where vessels carrying spent nuclear fuel shipments are docked, for their response to a security-related emergency or a call for assistance.

(vi) Preplan and coordinate with the NRC to obtain advance approval of the routes used for road and rail shipments of spent nuclear fuel, and of any U.S. ports where vessels carrying spent nuclear fuel shipments are scheduled to stop. In addition to the requirements of this section, routes used for shipping spent nuclear fuel shall comply with the applicable requirements of the DOT regulations in Title 49 of the *Code of Federal Regulations* (49 CFR), in particular those identified in § 71.5 of this chapter. The advance approval application shall provide:

(A) For road shipments, the route shall include locations of safe havens that have been coordinated with the appropriate State(s).

(B) The NRC approval shall be obtained prior to the 10-day advance notification requirement in § 73.72 of this part.

(C) Information to be supplied to the NRC shall include, but is not limited to, the following:

(*1*) Shipper, consignee, carriers, transfer points, modes of shipment; and

(*2*) A statement of shipment security arrangements, including, if applicable, points where armed escorts transfer responsibility for the shipment.

(vii) Document the preplanning and coordination activities.

(viii) Ensure the protection of Safeguards Information relative to spent nuclear fuel in transit in accordance with §§ 73.21 and 73.22 of this part, especially the information described in § 73.22(a)(2), which would include, at a minimum, the protection of the following information:

(A) The preplanning and coordination activities;

(B) Transportation physical security plan;

(C) Schedules and itineraries for specific spent nuclear fuel shipments until the information is no longer controlled as Safeguards Information, that is until at least 10 days after the shipment has entered or originated within the state; or for the case of a shipment in a series of shipments whose schedules are related, a statement that schedule information must be protected until 10 days after the last shipment in the series has entered or originated within the state and an estimate of the date on which the last shipment in the series will enter or originate within the state;

(D) Vehicle immobilization features, intrusion alarm devices, and communications;

(E) Arrangements with and capabilities of local police response forces, and locations of safe havens identified along the transportation route;

(F) Limitations of communications during transport;

(G) Procedures for response to security contingency events;

(H) Information concerning the tactics and capabilities required to defend against attempted sabotage, or theft and diversion of irradiated reactor fuel, or related information; and

(I) Engineering or safety analyses, security-related procedures or scenarios and other information related to the protection of the transported material if the unauthorized disclosure of such analyses, procedures, scenarios, or other information could reasonably be expected to have a significant adverse effect on the health and safety of the public or the common defense and security by significantly increasing the

likelihood of theft, diversion, or sabotage of spent nuclear fuel in transit.

(2) *Advance notifications.* Prior to the shipment of spent nuclear fuel moving through or across the boundary of any State, outside the confines of the licensee's facility or other place of use or storage, a licensee subject to this section shall provide notification to the NRC, under § 73.72 of this part, and the governor of the State(s), or the governor's designee(s), of the spent nuclear fuel shipment. After June 11, 2013, the compliance date of the Tribal notification final rule, a licensee subject to this section shall notify the Tribal official or Tribal official's designee of each participating Tribe referenced in § 71.97(c)(3) of this chapter prior to the transport of spent fuel within or across the Tribal reservation. Contact information for each State, including telephone and mailing addresses of governors and governors' designees, and participating Tribes, including telephone and mailing addresses of Tribal officials and Tribal official's designees, is available on the NRC Web site at: *https://scp.nrc.gov/special/designee.pdf''*. A list of the contact information is also available upon request from the Director, Division of Materials Safety, Security, State, and Tribal Programs, U.S. Nuclear Regulatory Commission, Washington, DC 20555. The licensee shall comply with the following criteria in regard to each notification:

(i) *Procedures for submitting advance notification.* (A) The notification must be in writing and sent to the office of each appropriate governor or the governor's designee and each appropriate Tribal official or the Tribal official's designee.

(B) A notification delivered by mail must be postmarked at least 10 days before transport of a shipment within or through the State or Tribal reservation.

(C) A notification delivered by any other method must reach the office of the governor or the governor's designee and any Tribal official or Tribal official's designee at least 7 days before transport of a shipment within or through the State.

(ii) *Information to be furnished in advance notification of shipment.* The notification must include the following information:

(A) The name, address, and telephone number of the shipper, carrier and receiver of the shipment and the license number of the shipper and receiver;

(B) A description of the shipment as specified by DOT in 49 CFR 172.202 and 172.203(d); and

(C) A listing of the routes to be used within the State or Tribal reservation.

(iii) *Separate enclosure.* The licensee shall provide the following information, under § 73.22(f)(1), in a separate enclosure to the written notification:

(A) The estimated date and time of departure from the point of origin of the shipment;

(B) The estimated date and time of entry into the State or Tribal reservation;

(C) The estimated date and time of arrival of the shipment at the destination;

(D) For the case of a single shipment whose schedule is not related to the schedule of any subsequent shipment, a statement that schedule information must be protected under the provisions of §§ 73.21 and 73.22 until at least 10 days after the shipment has entered or originated within the State or Tribal reservation; and

(E) For the case of a shipment in a series of shipments whose schedules are related, a statement that schedule information must be protected under the provisions of §§ 73.21 and 73.22 of this part until 10 days after the last shipment in the series has entered or originated within the State or Tribal reservation, and an estimate of the date on which the last shipment in the series will enter or originate within the State or Tribal reservation.

(iv) *Revision notice.* A licensee shall notify by telephone a responsible individual in the office of the governor or in the office of the governor's designee and the office of the Tribal official or in the office of the Tribal official's designee of any schedule change that differs by more than 6 hours from the schedule information previously furnished under paragraph (b)(2)(iii) of this section, and shall inform that individual of the number of hours of advance or delay relative to the written

schedule information previously furnished.

(v) *Cancellation notice.* Each licensee who cancels a shipment for which advance notification has been sent shall send a cancellation notice to the governor or to the governor's designee of each State previously notified, each Tribal official or the Tribal official's designee previously notified, and to the NRC's Director, Office of Nuclear Security and Incident Response, U.S. Nuclear Regulatory Commission, Washington, DC 20555. The licensee shall state in the notice that it is a cancellation and identify the advance notification that is being canceled.

(vi) *Records.* The licensee shall retain a copy of the preplanning and coordination activities, advance notification, and any revision or cancellation notice as a record for 3 years under § 73.70 of this part.

(3) *Transportation physical protection program.* (i) The transportation physical protection program established under paragraph (a)(1) of this section shall include armed escorts to protect spent nuclear fuel shipments and a movement control center, as defined in § 73.2 of this part, staffed and equipped to monitor and control spent nuclear fuel shipments, to communicate with local law enforcement authorities, and to respond to safeguards contingencies.

(ii) The movement control center must be staffed continuously by at least one individual who will actively monitor the progress of the spent nuclear fuel shipment and who has the authority to coordinate the physical protection activities.

(iii) The movement control center personnel must monitor the shipment continuously, *i.e.*, 24-hours per day, from the time the shipment commences, or if delivered to a carrier for transport, from the time of delivery of the shipment to the carrier, until safe delivery of the shipment at its final destination, and must immediately notify the appropriate agencies in the event of a safeguards event under the provisions of § 73.71 of this part.

(iv) The movement control center personnel and the armed escorts must maintain a written log for each spent nuclear fuel shipment, which will include information describing the shipment and significant events that occur during the shipment. The log must be available for review by authorized NRC personnel for a period of at least 3 years following completion of the shipment.

(v) The licensee shall develop, maintain, revise and implement written transportation physical protection procedures which address the following:

(A) Access controls to ensure no unauthorized persons have access to the shipment and Safeguards Information;

(B) Roles and responsibilities of the movement control center personnel, drivers, armed escorts and other individuals relative to the security of the shipment;

(C) Reporting of safeguards events under § 73.71 of this part;

(D) Communications protocols that include a strategy for the use of authentication and duress codes, the management of refueling or other stops, detours, and the loss of communications, temporarily or otherwise; and

(E) Normal conditions operating procedures.

(vi) The licensee shall retain as a record the transportation physical protection procedures for 3 years after the close of period for which the licensee possesses the spent nuclear fuel.

(vii) The transportation physical protection program shall:

(A) Provide that escorts (other than members of local law enforcement agencies serving as armed escorts, or ship's officers serving as unarmed escorts) have successfully completed the training required by appendix D of this part, including the equivalent of the weapons training and qualifications program required of guards, as described in sections III and IV of appendix B of this part, to assure that each such individual is fully qualified to use the assigned weapons;

(B) Provide that shipment escorts communicate with the movement control center at random intervals, not to exceed 2 hours, to advise of the status of the shipment for road and rail shipments, and for sea shipments while shipment vessels are docked at U.S. ports; and

(C) Provide that at least one armed escort remains alert at all times, maintains constant visual surveillance of the shipment, and periodically reports to the movement control center at regular intervals not to exceed 30 minutes during periods when the shipment vehicle is stopped, or the shipment vessel is docked.

(4) *Contingency and response procedures.* (i) In addition to the procedures established under paragraph (b)(3)(v) of this section, the licensee shall establish, maintain, and follow written contingency and response procedures to address threats, thefts, and radiological sabotage related to spent nuclear fuel in transit.

(ii) The licensee shall ensure that personnel associated with the shipment shall be appropriately trained regarding contingency and response procedures.

(iii) The licensee shall retain the contingency and response procedures as a record for 3 years after the close of period for which the licensee possesses the spent nuclear fuel.

(iv) The contingency and response procedures must direct that, upon detection of the abnormal presence of unauthorized persons, vehicles, or vessels in the vicinity of a spent nuclear fuel shipment or upon detection of a deliberately induced situation that has the potential for damaging a spent nuclear fuel shipment, the armed escort will:

(A) Determine whether or not a threat exists;

(B) Assess the extent of the threat, if any;

(C) Implement the procedures developed under paragraph (b)(4)(i) of this section;

(D) Take the necessary steps to delay or impede threats, thefts, or radiological sabotage of spent nuclear fuel; and

(E) Inform local law enforcement agencies of the threat and request assistance without delay, but not to exceed 15 minutes after discovery.

(c) *Shipments by road.* In addition to the provisions of paragraph (b) of this section, the physical protection system for any portion of a spent nuclear fuel shipment by road shall provide that:

(1) The transport vehicle is:

(i) Occupied by at least two individuals, one of whom serves as an armed escort, and escorted by an armed member of the local law enforcement agency in a mobile unit of such agency; or

(ii) Led by a separate vehicle occupied by at least one armed escort, and trailed by a third vehicle occupied by at least one armed escort.

(2) As permitted by law, all armed escorts are equipped with a minimum of two weapons. This requirement does not apply to local law enforcement agency personnel who are performing escort duties.

(3) The transport vehicle and each escort vehicle are equipped with redundant communication abilities that provide 2-way communications between the transport vehicle, the escort vehicle(s), the movement control center, local law enforcement agencies, and one another. To ensure that 2-way communication is possible at all times, alternate communications should not be subject to the same failure modes as the primary communication.

(4) The transport vehicle is equipped with NRC-approved features that permit immobilization of the cab or cargo-carrying portion of the vehicle.

(5) The transport vehicle driver has been familiarized with, and is capable of implementing, transport vehicle immobilization, communications, and other security procedures.

(6) Shipments are continuously and actively monitored by a telemetric position monitoring system or an alternative tracking system reporting to a movement control center. A movement control center shall provide positive confirmation of the location, status, and control over the shipment. The movement control center shall implement preplanned procedures in response to deviations from the authorized route or a notification of actual, attempted, or suspicious activities related to the theft, loss, diversion, or radiological sabotage of a shipment. These procedures shall include, but not be limited to, the identification of and contact information for the appropriate local law enforcement agency along the shipment route.

(d) *Shipments by rail.* In addition to the provisions of paragraph (b) of this section, the physical protection system

for any portion of a spent nuclear fuel shipment by rail shall provide that:

(1) A shipment car is accompanied by two armed escorts (who may be members of a local law enforcement agency), at least one of whom is stationed at a location on the train that will permit observation of the shipment car while in motion.

(2) As permitted by law, all armed escorts are equipped with a minimum of two weapons. This requirement does not apply to local law enforcement agency personnel who are performing escort duties.

(3) The train operator(s) and each escort are equipped with redundant communication abilities that provide 2-way communications between the transport, the escort vehicle(s), the movement control center, local law enforcement agencies, and one another. To ensure that 2-way communication is possible at all times, alternate communications should not be subject to the same failure modes as the primary communication.

(4) Rail shipments are monitored by a telemetric position monitoring system or an alternative tracking system reporting to the licensee, third-party, or railroad movement control center. The movement control center shall provide positive confirmation of the location of the shipment and its status. The movement control center shall implement preplanned procedures in response to deviations from the authorized route or to a notification of actual, attempted, or suspicious activities related to the theft, diversion, or radiological sabotage of a shipment. These procedures shall include, but not be limited to, the identification of and contact information for the appropriate local law enforcement agency along the shipment route.

(e) *Shipments by U.S. waters.* In addition to the provisions of paragraph (b) of this section, the physical protection system for any portion of a spent nuclear fuel shipment traveling on U.S. waters shall provide that:

(1) A shipment vessel while docked at a U.S. port is protected by:

(i) Two armed escorts stationed on board the shipment vessel, or stationed on the dock at a location that will permit observation of the shipment vessel; or

(ii) A member of a local law enforcement agency, equipped with normal local law enforcement agency radio communications, who is stationed on board the shipment vessel, or on the dock at a location that will permit observation of the shipment vessel.

(2) As permitted by law, all armed escorts are equipped with a minimum of two weapons. This requirement does not apply to local law enforcement agency personnel who are performing escort duties.

(3) A shipment vessel while within U.S. territorial waters shall be accompanied by an individual, who may be an officer of the shipment vessel's crew, who will assure that the shipment is unloaded only as authorized by the licensee.

(4) Each armed escort is equipped with redundant communication abilities that provide 2-way communications between the vessel, the movement control center, local law enforcement agencies, and one another. To ensure that 2-way communication is possible at all times, alternate communications should not be subject to the same failure modes as the primary communication.

(f) *Investigations.* Each licensee who makes arrangements for the shipment of spent nuclear fuel shall immediately conduct an investigation, in coordination with the receiving licensee, of any shipment that is lost or unaccounted for after the designated no-later-than arrival time in the advance notification.

(g) State officials, State employees, Tribal officials, Tribal employees, and other individuals, whether or not licensees of the NRC, who receive information of the kind specified in paragraph (b)(2)(iii) of this section and any other Safeguards Information as defined in § 73.22(a) of this part shall protect that information against unauthorized disclosure as specified in §§ 73.21 and 73.22 of this part.

[78 FR 29550, May 20, 2013, as amended at 79 FR 75741, Dec. 19, 2014; 80 FR 74981, Dec. 1, 2015; 83 FR 30288, June 28, 2018; 83 FR 58723, Nov. 21, 2018; 86 FR 43403, Aug. 9, 2021]

§ 73.38 Personnel access authorization requirements for irradiated reactor fuel in transit.

(a) *General*. (1) Each licensee who transports, or delivers to a carrier for transport, in a single shipment, a quantity of spent nuclear fuel as described in § 73.37(a)(1) of this part shall comply with the requirements of this section, as appropriate, before any spent nuclear fuel is transported or delivered to a carrier for transport.

(2) Each licensee shall establish, implement, and maintain its access authorization program under the requirements of this section.

(i) Each licensee shall be responsible for the continuing effectiveness of the access authorization program.

(ii) Each licensee shall ensure that the access authorization program is reviewed at an appropriate frequency to confirm compliance with the requirements of this section and that prompt comprehensive actions are taken to correct any noncompliance that is identified.

(iii) The review shall evaluate all program performance objectives and requirements.

(iv) Each review report must document conditions that are adverse to the proper performance of the access authorization program, the cause of the condition(s), and when appropriate, recommended corrective actions, and corrective actions taken. The licensee shall review the audit findings and take any additional corrective actions necessary to preclude repetition of the condition, including reassessment of the deficient areas where indicated.

(3) By August 19, 2013, each licensee that is subject to this provision shall implement the requirements of this section through revisions to its physical security plan or transportation security plan.

(b) *General performance objective*. The licensee's access authorization program must ensure that the individuals specified in paragraph (c) of this section are trustworthy and reliable such that they do not constitute an unreasonable risk to public health and safety or the common defense and security.

(c) *Applicability*. (1) Licensees shall subject the following individuals to an access authorization program:

(i) Any individual to whom a licensee intends to grant unescorted access to spent nuclear fuel in transit, including employees of a contractor or vendor;

(ii) Any individual whose duties and responsibilities permit the individual to take actions by physical or electronic means that could adversely impact the safety, security, or emergency response to spent nuclear fuel in transit (*i.e.*, movement control personnel, vehicle drivers, or other individuals accompanying spent nuclear fuel shipments);

(iii) Any individual whose duties and responsibilities include implementing a licensee's physical protection program under § 73.37, including but not limited to, non-LLEA armed escorts;

(iv) Any individual whose assigned duties and responsibilities provide access to spent nuclear fuel shipment information that is considered to be Safeguards Information under § 73.22(a)(2); and

(v) The licensee access authorization program reviewing official.

(2) Fingerprinting, and the identification and criminal history records checks required by Section 149 of the Atomic Energy Act of 1954, as amended, and other elements of the background investigation are not required for the following individuals prior to granting access authorization relative to spent nuclear fuel in transit:

(i) Persons identified in §§ 73.59 and 73.61 of this part;

(ii) Federal, State, and local officials, including inspectors, whose occupational status are consistent with the promotion of common defense and security and the protection of public health and safety relative to spent nuclear fuel in transit;

(iii) Emergency response personnel who are responding to an emergency;

(iv) An individual who has had a favorably adjudicated U.S. Government criminal history records check within the last 5 years, under a comparable U.S. Government program involving fingerprinting and an FBI identification and criminal history records check (e.g. National Agency Check, Transportation Worker Identification Credentials (TWIC) under 49 CFR part 1572, Bureau of Alcohol Tobacco Firearms and Explosives background check

and clearances under 27 CFR part 555, Health and Human Services security risk assessments for possession and use of select agents and toxins under 42 CFR part 73, Hazardous Material security threat assessment for hazardous material endorsement to commercial drivers license under 49 CFR part 1572, Customs and Border Patrol's Free and Secure Trade (FAST) Program) provided that he or she makes available the appropriate documentation. Written confirmation from the agency/employer that granted the Federal security clearance or reviewed the criminal history records check must be provided to the licensee. The licensee shall retain this documentation for a period of 3 years from the date the individual no longer requires access authorization relative to spent nuclear fuel in transit; and

(v) Any individual who has an active Federal security clearance, provided that he or she makes available the appropriate documentation. Written confirmation from the agency/employer that granted the Federal security clearance or reviewed the criminal history records check must be provided to the licensee. The licensee shall retain this documentation for a period of 3 years from the date the individual no longer requires access authorization relative to spent nuclear fuel in transit.

(d) *Background investigation*. Before allowing an individual to have unescorted access or access authorization relative to spent nuclear fuel[2] in transit the licensees shall complete a background investigation as defined in § 73.2 of this part of the individual seeking to have unescorted access or access authorization. The scope of the investigation must encompass at least the past 10 years, or if 10 years of information is not available then as many years in the past that information is available. The background investigation does not apply to Federal, State or local law enforcement personnel who are performing escort duties. The background investigation must include, but is not limited to, the following elements:

(1) *Informed consent*. Licensees shall not initiate any element of a background investigation without the informed and signed consent of the subject individual. This consent shall include authorization to share personal information with appropriate entities. The licensee to whom the individual is applying for access authorization shall inform the individual of his or her right to review information collected to assure its accuracy, and provide the individual with an opportunity to correct any inaccurate or incomplete information that is developed by the licensee.

(i) The subject individual may withdraw his or her consent at any time. Licensees shall inform the individual that:

(A) Withdrawal of his or her consent will remove the individual's application for access authorization under the licensee's access authorization program; and

(B) Other licensees shall have access to information documenting the withdrawal.

(ii) If an individual withdraws his or her consent, licensees may not initiate any elements of the background investigation that were not in progress at the time the individual withdrew his or her consent, but shall complete any background investigation elements that are in progress at the time consent is withdrawn. The licensee shall record the status of the individual's application for access authorization. Additionally, licensees shall collect and maintain the individual's application for access authorization; his or her withdrawal of consent for the background investigation; the reason given by the individual for the withdrawal; and any pertinent information collected from the background investigation elements that were completed. This information must be shared with other licensees under paragraph (l)(4) of this section.

(iii) Licensees shall inform, in writing, any individual who is applying for access authorization that the following actions are sufficient cause for denial or unfavorable termination of access authorization status:

[2] For purposes of 10 CFR 73.38, the terms ''irradiated reactor fuel'' as described in 10 CFR 73.37 and ''spent nuclear fuel'' are used interchangeably.

(A) Refusal to provide a signed consent for the background investigation;

(B) Refusal to provide, or the falsification of, any personal history information required under this section, including the failure to report any previous denial or unfavorable termination of access authorization;

(C) Refusal to provide signed consent for the sharing of personal information with other licensees under paragraph (d)(5)(v) of this section; or

(D) Failure to report any arrests or legal actions specified in paragraph (f) of this section.

(2) *Personal history disclosure*. Any individual who is required to have a background investigation under this section shall disclose the personal history information that is required by the licensee's access authorization program for the reviewing official to make a determination of the individual's trustworthiness and reliability. Refusal to provide, or the falsification of, any personal history information required by this section is sufficient cause for denial or termination of access authorization.

(3) *Criminal history*. Fingerprinting and an FBI identification and criminal history records check under § 73.57 of this part.

(4) *Verification of true identity*. Licensees shall verify the true identity of an individual who is applying to have access authorization to ensure that the applicant is who they claim to be. A licensee shall review official identification documents (e.g., driver's license, passport, government identification, State, province, or country of birth issued certificate of birth) and compare the documents to personal information data provided by the individual to identify any discrepancy in the information. Licensees shall document the type, expiration, and identification number of the identification, or maintain a photocopy of identifying documents on file under § 73.38(c). Licensees shall certify and affirm in writing that the identification was properly reviewed and maintain the certification and all related documents for review upon inspection.

(5) *Employment history evaluation*. Licensees shall ensure that an employment history evaluation has been completed on a best effort basis, by questioning the individual's present and former employers, and by determining the activities of the individual while unemployed.

(i) For the claimed employment period, the individual must provide the reason for any termination, eligibility for rehire, and other information that could reflect on the individual's trustworthiness and reliability.

(ii) If the claimed employment was military service the individual shall provide a characterization of service, reason for separation, and any disciplinary actions that could affect a trustworthiness and reliability determination.

(iii) If education is claimed in lieu of employment, the individual shall provide any information related to the claimed education that could reflect on the individual's trustworthiness and reliability and, at a minimum, verify that the individual was registered for the classes and received grades that indicate that the individual participated in the educational process during the claimed period.

(iv) If a previous employer, educational institution, or any other entity with which the individual claims to have been engaged fails to provide information or indicates an inability or unwillingness to provide information within 3 business days of the request, the licensee shall:

(A) Document this refusal or unwillingness in the licensee's record of the investigation; and

(B) Obtain a confirmation of employment, educational enrollment and attendance, or other form of engagement claimed by the individual from at least one alternate source that has not been previously used.

(v) When any licensee is seeking the information required for an access authorization decision under this section and has obtained a signed release from the subject individual authorizing the disclosure of such information, other licensees shall make available the personal or access authorization information requested regarding the denial or unfavorable termination of an access authorization.

(vi) In conducting an employment history evaluation, the licensee may

obtain information and documents by electronic means, including, but not limited to, telephone, facsimile, or email. Licensees shall make a record of the contents of the telephone call and shall retain that record, and any documents or electronic files obtained electronically, under paragraph (l) of this section.

(6) *Credit history evaluation*. Licensees shall ensure the evaluation of the full credit history of any individual who is applying for access authorization relative to spent nuclear fuel in transit. A full credit history evaluation must include, but is not limited to, an inquiry to detect potential fraud or misuse of social security numbers or other financial identifiers, and a review and evaluation of all of the information that is provided by a national credit-reporting agency about the individual's credit history. For foreign nationals and U.S. citizens who have resided outside the U.S. and do not have established credit history that covers at least the most recent 7 years in the U.S., the licensee must document all attempts to obtain information regarding the individual's credit history and financial responsibility from some relevant entity located in that other country or countries.

(7) *Criminal history review*. The licensee shall evaluate the entire criminal history record of an individual who is applying for access authorization to determine whether the individual has a record of criminal activity that may adversely impact his or her trustworthiness and reliability. The scope of the applicant's criminal history review must cover all residences of record for the 10-year period preceding the date of application for access authorization.

(8) *Character and reputation determination*. Licensees shall ascertain the character and reputation of an individual who has applied for access authorization relative to spent nuclear fuel in transit by conducting reference checks. Reference checks may not be conducted with any person who is known to be a close member of the individual's family, including but not limited to, the individual's spouse, parents, siblings, or children, or any individual who resides in the individual's permanent household. The reference checks must focus on the individual's reputation for trustworthiness and reliability.

(9) *Corroboration*. The licensee shall also, to the extent possible, obtain independent information to corroborate that provided by the individual (e.g., seek references not supplied by the individual).

(e) *Determination of trustworthiness and reliability; Documentation*. (1) The licensee shall determine whether to grant, deny, unfavorably terminate, maintain, or administratively withdraw an individual's access authorization based on an evaluation of all of the information required by this section. The licensee may terminate or administratively withdraw an individual's access authorization based on information obtained after the background investigation has been completed and the individual granted access authorization.

(2) The licensee may not permit any individual to have unescorted access or access authorization until all of the information required by this section has been evaluated by the reviewing official and the reviewing official has determined that the individual is trustworthy and reliable. The licensee may deny unescorted access or access authorization to any individual based on disqualifying information obtained at any time during the background investigation.

(f) *Protection of information*. (1) Licensees shall protect background investigation information from unauthorized disclosure.

(2) Licensees may not disclose the background investigation information collected and maintained to persons other than the subject individual, his/her representative, or to those who have a need to know in performing assigned duties related to the process of granting or denying unescorted access to spent nuclear fuel in transit. No individual authorized to have access to the information may re-disseminate the information to any other individual who does not have a need to know.

(3) The personal information obtained on an individual from a background investigation may be transferred to another licensee:

(i) Upon the individual's written request to the licensee holding the data to re-disseminate the information contained in his/her file; and

(ii) The acquiring licensee verifies information such as name, date of birth, social security number, sex, and other applicable physical characteristics for identification.

(4) The licensee shall make background investigation records obtained under this section available for examination by an authorized representative of the NRC to determine compliance with applicable laws and regulations.

(5) The licensee shall retain all fingerprint and criminal history records received from the FBI, or a copy if the file has been transferred, on an individual (including data indicating no record) for 5 years from the date the individual no longer requires unescorted access or access authorization relative to spent nuclear fuel in transit.

(g) *Grandfathering*. For purposes of this section, licensees are not required to obtain the fingerprints of any person who has been fingerprinted, pursuant to an NRC order or regulation, for an FBI identification and criminal history records check within the 5 years of the effective date of this rule.

(h) *Reinvestigations*. Licensees shall conduct fingerprinting and FBI identification and criminal history records check, a criminal history review, and credit history re-evaluation every 10 years for any individual who has unescorted access authorization to spent nuclear fuel in transit. The reinvestigations must be completed within 10 years of the date on which these elements were last completed and should address the 10 years following the previous investigation.

(i) *Self-reporting of legal actions*. (1) Any individual who has applied for an access authorization or is maintaining an access authorization under this section shall promptly report to the reviewing official, his or her supervisor, or other management personnel designated in licensee procedures any legal action(s) taken by a law enforcement authority or court of law to which the individual has been subject that could result in incarceration or a court order or that requires a court appearance, including but not limited to an arrest, an indictment, the filing of charges, or a conviction, but excluding minor civil actions or misdemeanors such as parking violations or speeding tickets. The recipient of the report shall, if other than the reviewing official, promptly convey the report to the reviewing official. On the day that the report is received, the reviewing official shall evaluate the circumstances related to the reported legal action(s) and re-determine the reported individual's access authorization status.

(2) The licensee shall inform the individual of this obligation, in writing, prior to granting unescorted access or certifying access authorization.

(j) *Access authorization procedures*. (1) Licensees shall develop, implement, and maintain written procedures for conducting background investigations for persons who are applying for unescorted access or access authorization for spent nuclear fuel in transit.

(2) Licensees shall develop, implement, and maintain written procedures for updating background investigations for persons who are applying for reinstatement of unescorted access or access authorization.

(3) Licensees shall develop, implement, and maintain written procedures to ensure that persons who have been denied unescorted access or access authorization are not allowed access to spent nuclear fuel in transit or information relative to spent nuclear fuel in transit.

(4) Licensees shall develop, implement, and maintain written procedures for the notification of individuals who are denied unescorted access or access authorization for spent nuclear fuel in transit. The procedures shall include provisions for the review, at the request of the affected individual, of a denial or termination of unescorted access or access authorization. The procedure must contain a provision to ensure that the individual is informed of the grounds for the denial or termination of unescorted access or access authorization and allow the individual an opportunity to provide additional relevant information.

(k) *Right to correct and complete information*. (1) Prior to any final adverse determination, licensees shall provide

each individual subject to this section with the right to complete, correct, and explain information obtained as a result of the licensee's background investigation. Confirmation of receipt by the individual of this notification must be maintained by the licensee for a period of 1 year from the date of the notification.

(2) If after reviewing their criminal history record an individual believes that it is incorrect or incomplete in any respect and wishes to change, correct, update, or explain anything in the record, the individual may initiate challenge procedures.

(l) *Records.* (1) The licensee shall retain documentation regarding the trustworthiness and reliability of individual employees for 5 years from the date the individual no longer requires unescorted access or access authorization relative to spent nuclear fuel in transit.

(2) The licensee shall retain a copy of the current access authorization program procedures as a record for 5 years after the procedure is no longer needed or until the Commission terminates the license, if the license is terminated before the end of the retention period. If any portion of the procedure is superseded, the licensee shall retain the superseded material for 5 years after the record is superseded.

(3) The licensee shall retain the list of persons approved for unescorted access or access authorization and the list of those individuals that have been denied unescorted access or access authorization for 5 years after the list is superseded or replaced.

(4) Licensees who have been authorized to add or manipulate data that is shared with licensees subject to this section shall ensure that data linked to the information about individuals who have applied for unescorted access or access authorization, which is specified in the licensee's access authorization program documents, is retained.

(i) If the shared information used for determining individual's trustworthiness and reliability changes or new or additional information is developed about the individual, the licensees that acquire this information shall correct or augment the data and ensure it is shared with licensees subject to this section. If the changed, additional or developed information has implications for adversely affecting an individual's trustworthiness and reliability, licensees who discovered or obtained the new, additional or changed information, shall, on the day of discovery, inform the reviewing official of any licensee access authorization program under which the individual is maintaining his or her unescorted access or access authorization status of the updated information.

(ii) The reviewing official shall evaluate the shared information and take appropriate actions, which may include denial or unfavorable termination of the individual's unescorted access or access authorization. If the notification of change or updated information cannot be made through usual methods, licensees shall take manual actions to ensure that the information is shared as soon as reasonably possible. Records maintained in any database(s) must be available for the NRC review.

(5) If a licensee administratively withdraws an individual's unescorted access or access authorization status caused by a delay in completing any portion of the background investigation or for a licensee initiated evaluation, or re-evaluation that is not under the individual's control, the licensee shall record this administrative action to withdraw the individual's unescorted access or unescorted access authorization and shall share this information with other licensees subject to this section. However, licensees shall not document this administrative withdrawal as denial or unfavorable termination and shall not respond to a suitable inquiry conducted under the provisions of 10 CFR part 26, a background investigation conducted under the provisions of this section, or any other inquiry or investigation as denial nor unfavorable termination. Upon favorable completion of the background investigation element that caused the administrative withdrawal, the licensee shall immediately ensure that any matter that could link the individual to the administrative action is eliminated from the subject individual's access authorization or personnel

record and other records, except if a review of the information obtained or developed causes the reviewing official to unfavorably terminate or deny the individual's unescorted access.

[78 FR 29553, May 20, 2013]

PHYSICAL PROTECTION REQUIREMENTS AT FIXED SITES

§ 73.40 Physical protection: General requirements at fixed sites.

Each licensee shall provide physical protection at a fixed site, or contiguous sites where licensed activities are conducted, against radiological sabotage, or against theft of special nuclear material, or against both, in accordance with the applicable sections of this Part for each specific class of facility or material license. If applicable, the licensee shall establish and maintain physical security in accordance with security plans approved by the Nuclear Regulatory Commission.

[58 FR 13700, Mar. 15, 1993]

§ 73.45 Performance capabilities for fixed site physical protection systems.

(a) To meet the general performance requirements of § 73.20 a fixed site physical protection system shall include the performance capabilities described in paragraphs (b) through (g) of this section unless otherwise authorized by the Commission.

(b) Prevent unauthorized access of persons, vehicles and materials into material access areas and vital areas. To achieve this capability the physical protection system shall:

(1) Detect attempts to gain unauthorized access or introduce unauthorized material across material access or vital area boundaries by stealth or force using the following subsystems and subfunctions:

(i) Barriers to channel persons and material to material access and vital area entry control points and to delay any unauthorized penetration attempts by persons or materials sufficient to assist detection and permit a response that will prevent the penetration; and

(ii) Access detection subsystems and procedures to detect, assess and communicate any unauthorized penetration attempts by persons or materials at the time of the attempt so that the response can prevent the unauthorized access or penetration.

(2) Detect attempts to gain unauthorized access or introduce unauthorized materials into material access areas or vital areas by deceit using the following subsystems and subfunctions:

(i) Access authorization controls and procedures to provide current authorization schedules and entry criteria for both persons and materials; and

(ii) Entry controls and procedures to verify the identity of persons and materials and assess such identity against current authorization schedules and entry criteria before permitting entry and to initiate response measures to deny unauthorized entries.

(c) Permit only authorized activities and conditions within protected areas, material access areas, and vital areas. To achieve this capability the physical protection system shall:

(1) Detect unauthorized activities or conditions within protected areas, material access areas and vital areas using the following subsystems and subfunctions:

(i) Controls and procedures that establish current schedules of authorized activities and conditions in defined areas;

(ii) Boundaries to define areas within which the authorized activities and conditions are permitted; and

(iii) Detection and surveillance subsystems and procedures to discover and assess unauthorized activities and conditions and communicate them so that response can be such as to stop the activity or correct the conditions to satisfy the general performance objective and requirements of § 73.20(a).

(d) Permit only authorized placement and movement of strategic special nuclear material within material access areas. To achieve this capability the physical protection system shall:

(1) Detect unauthorized placement and movement of strategic special nuclear material within the material access area using the following subsystems and subfunctions:

(i) Controls and procedures to delineate authorized placement and control for strategic special nuclear material;

(ii) Controls and procedures to establish current authorized placement and

movement of all strategic special nuclear material within material access areas;

(iii) Controls and procedures to maintain knowledge of the identity, quantity, placement, and movement of all strategic special nuclear material within material access areas; and

(iv) Detection and monitoring subsystems and procedures to discover and assess unauthorized placement and movement of strategic special nuclear material and communicate them so that response can be such as to return the strategic special nuclear material to authorized placement or control.

(e) Permit removal of only authorized and confirmed forms and amounts of strategic special nuclear material from material access areas. To achieve this capability the physical protection system shall:

(1) Detect attempts at unauthorized removal of strategic special nuclear material from material access areas by stealth or force using the following subsystems and subfunctions:

(i) Barriers to channel persons and materials exiting a material access area to exit control points and to delay any unauthorized strategic special nuclear material removal attempts sufficient to assist detection and assessment and permit a response that will prevent the removal; and satisfy the general performance objective and requirements of § 73.20(a); and

(ii) Detection subsystems and procedures to detect, assess and communicate any attempts at unauthorized removal of strategic special nuclear material so that response to the attempt can be such as to prevent the removal and satisfy the general performance objective and requirements of § 73.20(a).

(2) Confirm the identity and quantity of strategic special nuclear material presented for removal from a material access area and detect attempts at unauthorized removal of strategic special nuclear material from material access areas by deceit using the following subsystems and subfunctions:

(i) Authorization controls and procedures to provide current schedules for authorized removal of strategic special nuclear material which specify the authorized properties and quantities of material to be removed, the persons authorized to remove the material, and the authorized time schedule;

(ii) Removal controls and procedures to identify and confirm the properties and quantities of material being removed and verify the identity of the persons making the removal and time of removal and assess these against the current authorized removal schedule before permitting removal; and

(iii) Communications subsystems and procedures to provide for notification of an attempted unauthorized or unconfirmed removal so that response can be such as to prevent the removal and satisfy the general performance objective and requirements of § 73.20(a).

(f) Provide for authorized access and assure detection of and response to unauthorized penetrations of the protected area to satisfy the general performance objective and requirements of § 73.20(a). To achieve this capability the physical protection system shall:

(1) Detect attempts to gain unauthorized access or introduce unauthorized persons, vehicles, or materials into the protected area by stealth or force using the following subsystems and subfunctions:

(i) Barriers to channel persons, vehicles, and materials to protected area entry control points; and to delay any unauthorized penetration attempts or the introduction of unauthorized vehicles or materials sufficient to assist detection and assessment and permit a response that will prevent the penetration or prevent such penetration and satisfy the general performance objective and requirements of § 73.20(a); and

(ii) Access detection subsystems and procedures to detect, assess and communicate any unauthorized access or penetrations or such attempts by persons, vehicles, or materials at the time of the act or the attempt so that the response can be such as to prevent the unauthorized access or penetration, and satisfy the general performance objective and requirements of § 73.20(a).

(2) Detect attempts to gain unauthorized access or introduce unauthorized persons, vehicles, or materials into the protected area by deceit using the following subsystems and subfunctions:

(i) Access authorization controls and procedures to provide current authorization schedules and entry criteria for persons, vehicles, and materials; and

(ii) Entry controls and procedures to verify the identity of persons, materials and vehicles and assess such identity against current authorization schedules before permitting entry and to initiate response measures to deny unauthorized access.

(g) *Response.* Each physical protection program shall provide a response capability to assure that the five capabilities described in paragraphs (b) through (f) of this section are achieved and that adversary forces will be engaged and impeded until offsite assistance forces arrive. To achieve this capability a licensee shall:

(1) Establish a security organization to:

(i) Provide trained and qualified personnel to carry out assigned duties and responsibilities; and

(ii) Provide for routine security operations and planned and predetermined response to emergencies and safeguards contingencies.

(2) Establish a predetermined plan to respond to safeguards contingency events.

(3) Provide equipment for the security organization and facility design features to:

(i) Provide for rapid assessment of safeguards contingencies;

(ii) Provide for response by assigned security organization personnel which is sufficiently rapid and effective to achieve the predetermined objective of the response; and

(iii) Provide protection for the assessment and response personnel so that they can complete their assigned duties.

(4) Provide communications networks to:

(i) Transmit rapid and accurate security information among onsite forces for routine security operation, assessment of a contingency, and response to a contingency; and

(ii) Transmit rapid and accurate detection and assessment information to offsite assistance forces.

(5) Assure that a single adversary action cannot destroy the capability of the security organization to notify offsite response forces of the need for assistance.

[44 FR 68193, Nov. 28, 1979]

§ 73.46 Fixed site physical protection systems, subsystems, components, and procedures.

(a) A licensee physical protection system established pursuant to the general performance objective and requirements of § 73.20(a) and the performance capability requirements of § 73.45 shall include, but are not necessarily limited to, the measures specified in paragraphs (b) through (h) of this section. The Commission may require, depending on individual facility and site conditions, alternate or additional measures deemed necessary to meet the general performance objective and requirements of § 73.20. The Commission also may authorize protection measures other than those required by this section if, in its opinion, the overall level of performance meets the general performance objective and requirements of § 73.20 and the performance capability requirements of § 73.45.

(b) *Security organization.* (1) The licensee shall establish a security organization, including guards. If a contract guard force is utilized for site security, the licensee's written agreement with the contractor will clearly show that (i) the licensee is responsible to the Commission for maintaining safeguards in accordance with Commission regulations and the licensee's security plan, (ii) the NRC may inspect, copy, and take away copies of all reports and documents required to be kept by Commission regulations, orders, or applicable license conditions whether such reports and documents are kept by the licensee or the contractor, (iii) the requirement, in § 73.46(b)(4) of this section that the licensee demonstrate the ability of physical security personnel to perform their assigned duties and responsibilities, include demonstration of the ability of the contractor's physical security personnel to perform their assigned duties and responsibilities in carrying out the provisions of the Security Plan and these regulations, and (iv) the contractor will not assign any personnel to the site who have not first been made aware of these responsibilities.

(2) The licensee shall have onsite at all times at least one full time member of the security organization with authority to direct the physical protection activities of the security organization.

(3) The licensee shall have a management system to provide for the development, revision, implementation, and enforcement of security procedures. The system shall include:

(i) Written security procedures which document the structure of the security organization and which detail the duties of the Tactical Response Team, guards, watchmen, and other individuals responsible for security. The licensee shall retain a copy of the current procedures as a record until the Commission terminates the license for which these procedures were developed and, if any portion of these procedures is superseded, retain the superseded material for three years after each change; and

(ii) Provision for written approval of such procedures and any revisions thereto by the individual with overall responsibility for the security function.

(4) The licensee may not permit an individual to act as a Tactical Response Team member, armed response person, guard, or other member of the security organization unless the individual has been trained, equipped, and qualified to perform each assigned security duty in accordance with Appendix B of this part, ''General Criteria for Security Personnel.'' In addition, Tactical Response Team members, armed response personnel, and guards shall be trained, equipped, and qualified for use of their assigned weapons in accordance with paragraphs (b)(6) and (b)(7) of this section. Tactical Response Team members, armed response personnel, and guards shall also be trained and qualified in accordance with either paragraphs (b)(10) and (b)(11) or paragraph (b)(12) of this section. Upon the request of an authorized representative of the Commission, the licensee shall demonstrate the ability of the physical security personnel, whether licensee or contractor employees, to carry out their assigned duties and responsibilities. Each Tactical Response Team member, armed response person, and guard, whether a licensee or contractor employee, shall requalify in accordance with Appendix B of this part. Tactical Response Team members, armed response personnel, and guards shall also requalify in accordance with paragraph (b)(7) of this section at least once every 12 months. The licensee shall document the results of the qualification and requalification. The licensee shall retain the documentation of each qualification and requalification as a record for 3 years after each qualification and requalification.

(5) Within any given period of time, a member of the security organization may not be assigned to, or have direct operational control over, more than one of the redundant elements of a physical protection subsystem if such assignment or control could result in the loss of effectiveness of the subsystem.

(6) Each guard shall be armed with a handgun, as described in appendix B of this part. Each Tactical Response Team member shall be armed with a 9mm semiautomatic pistol. All but one member of the Tactical Response Team shall be armed additionally with either a shotgun or semiautomatic rifle, as described in appendix B of this part. The remaining member of the Tactical Response Team shall carry, as an individually assigned weapon, a rifle of no less caliber than .30 inches or 7.62mm.

(7) In addition to the weapons qualification and requalification criteria of appendix B of this part, Tactical Response Team members, armed response personnel, and guards shall qualify and requalify, at least every 12 months, for day and night firing with assigned weapons in accordance with Appendix H of this part. Tactical Response Team members, armed response personnel, and guards shall be permitted to practice fire prior to qualification and requalification but shall be given only one opportunity to fire for record on the same calendar day. If a Tactical Response Team member, armed response person, or guard fails to qualify or requalify, the licensee shall remove the individual from security duties which require the use of firearms and retrain the individual prior to any subsequent attempt to qualify or requalify. If an individual fails to qualify

or requalify on two successive attempts, he or she shall be required to receive additional training and successfully fire two consecutive qualifying scores prior to being reassigned to armed security duties.

(i) In addition, Tactical Response Team members, armed response personnel, and guards shall be prepared to demonstrate day and night firing qualification with their assigned weapons at any time upon request by an authorized representative of the NRC.

(ii) The licensee or the licensee's agent shall document the results of weapons qualification and requalification for day and night firing. The licensee shall retain the documentation of each qualification and requalification as a record for 3 years after each qualification and requalification.

(8) In addition to the training requirements contained in appendix B of this part, Tactical Response Team members shall successfully complete training in response tactics. The licensee shall document the completion of training. The licensee shall retain the documentation of training as a record for three years after training is completed.

(9) The licensee shall conduct Tactical Response Team and guard exercises to demonstrate the overall security system effectiveness and the ability of the security force to perform response and contingency plan responsibilities and to demonstrate individual skills in assigned team duties. During the first 12-month period following the date specified in paragraph (i)(2)(ii) of this section, an exercise must be carried out at least every three months for each shift, half of which are to be force-on-force. Subsequently, during each 12-month period commencing on the anniversary of the date specified in paragraph (i)(2)(ii) of this section, an exercise must be carried out at least every four months for each shift, one third of which are to be force-on-force. The licensee shall use these exercises to demonstrate its capability to respond to attempts to steal strategic special nuclear material. During each of the 12-month periods, the NRC shall observe one of the force-on-force exercises which demonstrates overall security system performance. The licensee shall notify the NRC of the scheduled exercise 60 days prior to that exercise. The licensee shall document the results of all exercises. The licensee shall retain the documentation of each exercise as a record for three years after each exercise is completed.

(10) In addition to the medical examinations and physical fitness requirements of paragraph I.C of Appendix B of this part, each Tactical Response Team member, armed response person, and guard, except as provided in paragraph (b)(10)(v) of this section, shall participate in a physical fitness training program on a continuing basis.

(i) The elements of the physical fitness training program must include, but not necessarily be limited to, the following:

(A) Training sessions of sufficient frequency, duration, and intensity to be of aerobic benefit, e.g., normally a frequency of three times per week, maintaining an intensity of approximately 75 percent of maximum heart rate for 20 minutes;

(B) Activities that use large muscle groups, that can be maintained continuously, and that are rhythmical and aerobic in nature, e.g., running, bicycling, rowing, swimming, or cross-country skiing; and

(C) Musculoskeletal training exercises that develop strength, flexibility, and endurance in the major muscle groups, e.g., legs, arms, and shoulders.

(ii) The licensee shall assess Tactical Response Team members, armed response personnel, and guards for general fitness once every 4 months to determine the effectiveness of the continuing physical fitness training program. Assessments must include a recent health history, measures of cardiovascular fitness, percent of body fat, flexibility, muscular strength, and endurance. Individual exercise programs must be modified to be consistent with the needs of each participating Tactical Response Team member, armed response person, and guard and consistent with the environments in which they must be prepared to perform their duties. Individuals who exceed 4 months without being assessed for general fitness due to excused time off from work must be assessed within 15

calendar days of returning to duty as a Tactical Response Team member, armed response person, or guard.

(iii) Within 30 days prior to participation in the physical fitness training program, the licensee shall give Tactical Response Team members, armed response personnel, and guards a medical examination including a determination and written certification by a licensed physician that there are no medical contraindications, as disclosed by the medical examination, to participation in the physical fitness training program.

(iv) Licensees may temporarily waive an individual's participation in the physical fitness training program on the advice of the licensee's examining physician, during which time the individual may not be assigned duties as a Tactical Response Team member.

(v) Guards whose duties are to staff the central or secondary alarm station and those who control exit or entry portals are exempt from the physical fitness training program specified in paragraph (b)(10) of this section, provided that they are not assigned temporary response guard duties.

(11) In addition to the physical fitness demonstration contained in paragraph I.C of Appendix B of this part, Tactical Response Team members, armed response personnel, and guards shall meet or exceed the requirements in paragraphs (b)(11)(i) through (b)(11)(v) of this section, except as provided in paragraph (b)(11)(vi) of this section, initially and at least once every 12 months thereafter.

(i) For Tactical Response Team members the criteria are a 1-mile run in 8 minutes and 30 seconds or less and a 40-yard dash starting from a prone position in 8 seconds or less. For armed response personnel and guards that are not members of the Tactical Response Team the criteria are a one-half mile run in 4 minutes and 40 seconds or less and a 40-yard dash starting from a prone position in 8.5 seconds or less. The test may be taken in ordinary athletic attire under the supervision of licensee designated personnel. The licensee shall retain a record of each individual's performance for 3 years.

(ii) Incumbent Tactical Response Team members, armed response personnel, and guards shall meet or exceed the qualification criteria within 12 months of NRC approval of the licensee's revised Fixed Site Physical Protection Plan. New employees hired after the approval date shall meet or exceed the qualification criteria prior to assignment as a Tactical Response Team member, armed response person, or guard.

(iii) Tactical Response Team members, armed response personnel, and guards shall be given a medical examination including a determination and written certification by a licensed physician that there are no medical contraindications, as disclosed by the medical examination, to participation in the physical fitness performance testing. The medical examination must be given within 30 days prior to the first administration of the physical fitness performance test, and on an annual basis thereafter.

(iv) The licensee shall place Tactical Response Team members, armed response persons, and guards, who do not meet or exceed the qualification criteria, in a monitored remedial physical fitness training program and relieve them of security duties until they satisfactorily meet or exceed the qualification criteria.

(v) Licensees may temporarily waive the annual performance testing for an individual on the advice of the licensee's examining physician, during which time the individual may not be assigned duties as a Tactical Response Team member.

(vi) Guards whose duties are to staff the central or secondary alarm station and those who control exit or entry portals are exempt from the annual performance testing specified in paragraph (b)(11) of this section, provided that they are not assigned temporary response guard duties.

(12) The licensee may elect to comply with the requirements of this paragraph instead of the requirements of paragraphs (b)(10) and (b)(11) of this section. In addition to the physical fitness qualifications of paragraph I.C of Appendix B of this part, each licensee subject to the requirements of this section shall develop and submit to the NRC for approval site specific, content-based, physical fitness performance

tests which will—when administered to each Tactical Response Team member, armed response person, or guard—duplicate the response duties these individuals may need to perform during a strenuous tactical engagement.

(i) The test must be administered to each Tactical Response Team member, armed response person, and guard once every 3 months. The test must specifically address the physical capabilities needed by armed response personnel during a strenuous tactical engagement at the licensed facility. Individuals who exceed 3 months without having been administered the test due to excused time off from work must be tested within 15 calendar days of returning to duty as a Tactical Response Team member, armed response person, or guard.

(ii) Within 30 days before the first administration of the physical fitness performance test, and on an annual basis thereafter, Tactical Response Team members, armed response personnel, and guards shall be given a medical examination including a determination and written certification by a licensed physician that there are no medical contraindications, as disclosed by the medical examination, to participation in the physical fitness performance test.

(iii) Guards whose duties are to staff the central or secondary alarm station and those who control exit or entry portals are exempt from the performance test specified in paragraph (b)(12) of this section, provided that they are not assigned temporary response guard duties.

(c) *Physical barrier subsystems.* (1) vital equipment must be located only within a vital area, and strategic special nuclear material must be stored or processed only in a material access area. Both vital areas and material access areas must be located within a protected area so that access to vital equipment and to strategic special nuclear material requires passage through at least three physical barriers. The perimeter of the protected area must be provided with two separated physical barriers with an intrusion detection system placed between the two. The inner barrier must be positioned and constructed to enhance assessment of penetration attempts and to delay attempts at unauthorized exit from the protected area. The perimeter of the protected area must also incorporate features and structures that prevent forcible vehicle entry. More than one vital area or material access area may be located within a single protected area.

(2) The physical barriers at the perimeter of the protected area shall be separated from any other barrier designated as a physical barrier for a vital area or material access area within the protected area.

(3) Isolation zones shall be maintained in outdoor areas adjacent to the physical barrier at the perimeter of the protected area and shall be large enough to permit observation of the activities of people on either side of that barrier in the event of its penetration. If parking facilities are provided for employees or visitors, they shall be located outside the isolation zone and exterior to the protected area.

(4) Isolation zones and all exterior areas within the protected area shall be provided with illumination sufficient for the monitoring and observation requirements of paragraphs (c)(3), (e)(8), (h)(4) and (h)(6) of this section, but not less than 0.2 footcandle measured horizontally at ground level.

(5) Strategic special nuclear material, other than alloys, fuel elements or fuel assemblies, shall:

(i) Be stored in a vault when not undergoing processing if the material can be used directly in the manufacture of a nuclear explosive device. Vaults used to protect such material shall be capable of preventing entry to stored SSNM by a single action in a forced entry attempt, except as such single action would both destroy the barrier and render contained SSNM incapable of being removed, and shall provide sufficient delay to prevent removal of stored SSNM prior to arrival of response personnel capable of neutralizing the design basis threat stated in § 73.1.

(ii) Be stored in tamper-indicating containers;

(iii) Be processed only in material access areas constructed with barriers that provide significant delay to penetration; and

(iv) Be kept in locked compartments or locked process equipment while undergoing processing except when personally attended.

(6) Enriched uranium scrap (enriched to 20% or greater) in the form of small pieces, cuttings, chips, solutions or in other forms which result from a manufacturing process, contained in 30 gallon or larger containers with a uranium-235 content of less than 0.25 grams per liter, may be stored within a locked and separately fenced area within a larger protected area provided that the storage area fence is no closer than 25 feet to the perimeter of the protected area. The storage area when unoccupied shall be protected by a guard or watchman who shall patrol at intervals not exceeding 4 hours, or by intrusion alarms.

(d) *Access control subsystems and procedures*. (1) A numbered picture badge identification subsystem shall be used for all individuals who are authorized access to protected areas without escort. An individual not employed by the licensee but who requires frequent and extended access to protected, material access, or vital areas may be authorized access to such areas without escort provided that he receives a picture badge upon entrance into the protected area and returns the badge upon exit from the protected area, and that the badge indicates, (i) Non-employee—no escort required; (ii) areas to which access is authorized and (iii) the period for which access has been authorized. Badges shall be displayed by all individuals while inside the protected areas.

(2) Unescorted access to vital areas, material access areas and controlled access areas shall be limited to individuals who are authorized access to the material and equipment in such areas, and who require such access to perform their duties. Access to material access areas shall include at least two individuals. Authorization for such individuals shall be indicated by the issuance of specially coded numbered badges indicating vital areas, material access areas, and controlled access areas to which access is authorized. No activities other than those which require access to strategic special nuclear material or to equipment used in the processing, use, or storage of strategic special nuclear material, or necessary maintenance, shall be permitted within a material access area.

(3) The licensee shall establish and follow written procedures that will permit access control personnel to identify those vehicles that are authorized and those materials that are not authorized entry to protected, material access, and vital areas. The licensee shall retain a copy of the current procedures as a record until the Commission terminates each license for which the procedures were developed and, if any portion of the procedures is superseded, retain the superseded material for three years after each change.

(4)(i) The licensee shall control all points of personnel and vehicle access into a protected area. Identification and search of all individuals for firearms, explosives, and incendiary devices must be made and authorization must be checked at these points except for Federal, State, and local law enforcement personnel on official duty and United States Department of Energy couriers engaged in the transport of special nuclear material. The search function for detection of firearms, explosives, and incendiary devices must be accomplished through the use of detection equipment capable of detecting both firearms and explosives. The individual responsible for the last access control function (controlling admission to the protected area) shall be isolated within a structure with bullet resisting walls, doors, ceiling, floor, and windows.

(ii) When the licensee has cause to suspect that an individual is attempting to introduce firearms, explosives, or incendiary devices into a protected area, the licensee shall conduct a physical pat-down search of that individual. Whenever firearms or explosives detection equipment at a portal is out of service or not operating satisfactorily, the licensee shall conduct a physical pat-down search of all persons who would otherwise have been subject to search using the equipment.

(5) At the point of personnel and vehicle access into a protected area, all hand-carried packages except those carried by individuals exempted from personal search under the provisions of

paragraph (d)(4)(i) of this part must be searched for firearms, explosives, and incendiary devices.

(6) All packages and material for delivery into a protected area must be checked for proper identification and authorization and searched for firearms, explosives, and incendiary devices prior to admittance into the protected area, except those Commission-approved delivery and inspection activities specifically designated by the licensee to be carried out within material access, vital, or protected areas for reasons of safety, security, or operational necessity.

(7) All vehicles, except United States Department of Energy vehicles engaged in transporting special nuclear material and emergency vehicles under emergency conditions, shall be searched for firearms, explosives, and incendiary devices prior to entry into the protected area. Vehicle areas to be searched shall include the cab, engine compartment, undercarriage, and cargo area.

(8) All vehicles, except designated licensee vehicles, requiring entry into the protected area shall be escorted by a member of the security organization while within the protected area, and to the extent practicable shall be off-loaded in an area that is not adjacent to a vital area. Designated licensee vehicles shall be limited in their use to onsite plant functions and shall remain in the protected area except for operational, maintenance, security and emergency purposes. The licensee shall exercise positive control over all such designated vehicles to assure that they are used only by authorized persons and for authorized purposes.

(9) The licensee shall control all points of personnel and vehicle access to material access areas, vital areas, and controlled access areas. At least two armed guards trained in accordance with the provisions contained in paragraph (b)(7) of this section and appendix B of this part shall be posted at each material access area control point whenever in use. Identification and authorization of personnel and vehicles must be verified at the material access area control point. Prior to entry into a material access area, packages must be searched for firearms, explosives, and incendiary devices. All vehicles, materials and packages, including trash, wastes, tools, and equipment exiting from a material access area must be searched for concealed strategic special nuclear material by a team of at least two individuals who are not authorized access to that material access area. Each individual exiting a material access area shall undergo at least two separate searches for concealed strategic special nuclear material. For individuals exiting an area that contains only alloyed or encapsulated strategic special nuclear material, the second search may be conducted in a random manner.

(10) Before exiting from a material access area, containers of contaminated wastes must be drum scanned and tamper sealed by at least two individuals, working and recording their findings as a team, who do not have access to material processing and storage areas. The licensee shall retain the records of these findings for three years after the record is made.

(11) Strategic special nuclear material being prepared for shipment offsite, including product, samples and scrap, shall be packed and placed in sealed containers in the presence of at least two individuals working as a team who shall verify and certify the content of each shipping container through the witnessing of gross weight measurements and nondestructive assay, and through the inspection of tamper seal integrity and associated seal records.

(12) Areas used for preparing strategic special nuclear material for shipment and areas used for packaging and screening trash and wastes shall be controlled access areas and shall be separated from processing and storage areas.

(13) Individuals not permitted by the licensee to enter protected areas without escort must be escorted by a watchman or other individual designated by the licensee while in a protected area and must be badged to indicate that an escort is required. In addition, the individual shall be required to register his or her name, date, time,

purpose of visit and employment affiliation, citizenship, and name of the individual to be visited in a log. The licensee shall retain each log as a record for three years after the last entry is made in the log.

(14) All keys, locks, combinations and related equipment used to control access to protected, material access, vital, and controlled access areas shall be controlled to reduce the probability of compromise. Whenever there is evidence that a key, lock, combination, or related equipment may have been compromised it shall be changed. Upon termination of employment of any employee, keys, locks, combinations, and related equipment to which that employee had access, shall be changed.

(15) The licensee may not announce or otherwise communicate to its employees or site contractors the arrival or presence of an NRC safeguards inspector unless specifically requested to do so by the NRC safeguards inspector.

(e) *Detection, surveillance and alarm subsystems and procedures.* (1) The licensee shall provide an intrusion alarm subsystem with a capability to detect penetration through the isolation zone and to permit response action.

(2) All emergency exits in each protected, material access, and vital area shall be locked to prevent entry from the outside and alarmed to provide local visible and audible alarm annunciation.

(3) All unoccupied vital areas and material access areas shall be locked and protected by an intrusion alarm subsystem which will alarm upon the entry of a person anywhere into the area, upon exit from the area, and upon movement of an individual within the area, except that for process material access areas only the location of the strategic special nuclear material within the area is required to be so alarmed. Vaults and process areas that contain strategic special nuclear material that has not been alloyed or encapsulated shall also be under the surveillance of closed circuit television that is monitored in both alarm stations. Additionally, means shall be employed which require that an individual other than an alarm station operator be present at or have knowledge of access to such unoccupied vaults or process areas.

(4) All manned access control points in the protected area barrier, all security patrols and guard stations within the protected area, and both alarm stations shall be provided with duress alarms.

(5) All alarms required pursuant to this section shall annunciate in a continuously manned central alarm station located within the protected area and in at least one other independent continuously manned onsite station not necessarily within the protected area, so that a single act cannot remove the capability of calling for assistance or responding to an alarm. The alarm stations shall be controlled access areas and their walls, doors, ceiling, floor, and windows shall be bullet-resisting. The central alarm station shall be located within a building so that the interior of the central alarm station is not visible from the perimeter of the protected area. This station may not contain any operational activities that would interfere with the execution of the alarm response function.

(6) All alarms required by this section shall remain operable from independent power sources in the event of the loss of normal power. Switchover to standby power shall be automatic and shall not cause false alarms on annunciator modules.

(7) All alarm devices including transmission lines to annunciators shall be tamper indicating and self-checking e.g., an automatic indication shall be provided when a failure of the alarm system or a component occurs, when there is an attempt to compromise the system, or when the system is on standby power. The annunciation of an alarm at the alarm stations shall indicate the type of alarm (e.g., intrusion alarm, emergency exit alarm, etc.) and location. The status of all alarms and alarm zones shall be indicated in the alarm stations.

(8) All exterior areas within the protected area shall be monitored or periodically checked to detect the presence of unauthorized persons, vehicles, materials, or unauthorized activities.

(9) Methods to observe individuals within material access areas to assure

that strategic special nuclear material is not moved to unauthorized locations or in an unauthorized manner shall be provided and used on a continuing basis.

(f) *Communication subsystems.* (1) Each guard, watchman, or armed response individual on duty shall be capable of maintaining continuous communication with an individual in each continuously manned alarm station required by paragraph (e)(5) of this section, who shall be capable of calling for assistance from other guards, watchmen, and armed response personnel and from law enforcement authorities.

(2) Each alarm station required by paragraph (e)(5) of this section shall have both conventional telephone service and radio or microwave transmitted two-way voice communication, either directly or through an intermediary, for the capability of communication with the law enforcement authorities.

(3) Non-portable communications equipment controlled by the licensee and required by this section shall remain operable from independent power sources in the event of the loss of normal power.

(g) *Test and maintenance programs.* The licensee shall have a test and maintenance program for intrusion alarms, emergency exit alarms, communications equipment, physical barriers, and other physical protection related devices and equipment used pursuant to this section that shall provide for the following:

(1) Tests and inspections during the installation and construction of physical protection related subsystems and components to assure that they comply with their respective design criteria and performance specifications.

(2) Preoperational tests and inspections of physical protection related subsystems and components to demonstrate their effectiveness and availability with respect to their respective design criteria and performance specifications.

(3) Operational tests and inspections of physical protection related subsystems and components to assure their maintenance in an operable and effective condition, including:

(i) Testing of each intrusion alarm at the beginning and end of any period that it is used. If the period of continuous use is longer than seven days, the intrusion alarm shall also be tested at least once every seven days.

(ii) Testing of communications equipment required for communications onsite, including duress alarms, for performance not less frequently than once at the beginning of each security personnel work shift. Communications equipment required for communications offsite shall be tested for performance not less than once a day.

(4) Preventive maintenance programs shall be established for physical protection related subsystems and components to assure their continued maintenance in an operable and effective condition.

(5) All physical protection related subsystems and components shall be maintained in operable condition. The licensee shall develop and employ corrective action procedures and compensatory measures to assure that the effectiveness of the physical protection system is not reduced by failure or other contingencies affecting the operation of the security related equipment or structures. Repairs and maintenance shall be performed by at least two individuals working as a team who have been trained in the operation and performance of the equipment. The security organization shall be notified before and after service is performed and shall conduct performance verification tests after the service has been completed.

(6) The security program must be reviewed at least every 12 months by individuals independent of both security program management and personnel who have direct responsibility for implementation of the security program. The security program review must include an audit of security procedures and practices, an evaluation of the effectiveness of the physical protection system, an audit of the physical protection system testing and maintenance program, and an audit of commitments established for response by local law enforcement authorities. The results and recommendations of the security program review, and any actions taken, must be documented in a report to the licensee's plant manager and to corporate management at least one

level higher than that having responsibility for the day-to-day plant operations. These reports must be maintained in an auditable form, available for inspection for a period of 3 years.

(h) *Contingency and response plans and procedures*. (1) The licensee shall establish, maintain, and follow an NRC-approved safeguards contingency plan for responding to threats, thefts, and radiological sabotage related to the strategic special nuclear material and nuclear facilities subject to the provisions of this section. Safeguards contingency plans must be in accordance with the criteria in appendix C to this part, ''Licensee Safeguards Contingency Plans.'' Contingency plans must include, but not limited to, the response requirements listed in paragraphs (h)(2) through (h)(5) of this section. The licensee shall retain the current safeguards contingency plan as a record until the Commission terminates the license and, if any portion of the plan is superseded, retain that superseded portion for 3 years after the effective date of change.

(2) The licensee shall establish and document response arrangements that have been made with local law enforcement authorities. The licensee shall retain documentation of the current arrangements as a record until the Commission terminates each license requiring the arrangements and, if any arrangement is superseded, retain the superseded material for three years after each change.

(3) A Tactical Response Team consisting of a minimum of five (5) members must be available at the facility to fulfill assessment and response requirements. In addition, a force of guards or armed response personnel also must be available to provide assistance as necessary. The size and availability of the additional force must be determined on the basis of site-specific considerations that could affect the ability of the total onsite response force to engage and impede the adversary force until offsite assistance arrives. The rationale for the total number and availabiliy of onsite armed response personnel must be included in the physical protection plans submitted to the Commission for approval.

(4) Upon detection of abnormal presence or activity of persons or vehicles within an isolation zone, a protected area, a material access area, or a vital area, or upon evidence or indication of intrusion into a protected area, a material access area, or a vital area, the licensee security organization shall:

(i) Determine whether or not a threat exists,

(ii) Assess the extent of the threat, if any,

(iii) Take immediate concurrent measures to neutralize the threat by:

(A) Requiring responding guards or other armed response personnel to interpose themselves between vital areas and material access areas and any adversary attempting entry for purposes of radiological sabotage or theft of strategic special nuclear material and to intercept any person exiting with special nuclear material, and

(B) Informing local law enforcement agencies of the threat and requesting assistance.

(5) The licensee shall instruct every guard and all armed response personnel to prevent or impede acts of radiological sabotage or theft of strategic special nuclear material by using force sufficient to counter the force directed at him including the use of deadly force when the guard or other armed response person has a reasonable belief that it is necessary in self-defense or in the defense of others.

(6) To facilitate initial response to detection of penetration of the protected area and assessment of the existence of a threat, a capability of observing the isolation zones and the physical barrier at the perimeter of the protected area shall be provided, preferably by means of closed circuit television or by other suitable means which limit exposure of responding personnel to possible attack.

(7) Alarms occurring within unoccupied vaults and unoccupied material access areas containing unalloyed or unencapsulated strategic special nuclear material shall be assessed by at least two security personnel using closed circuit television (CCTV) or other remote means.

(8) Alarms occurring within unoccupied material access areas that contain only alloyed or encapsulated strategic

special nuclear material shall be assessed as in paragraph (h)(7) of this section or by at least two security personnel who shall undergo a search before exiting the material access area.

(i) *Implementation schedule for revisions to physical protection plans.* (1) By November 28, 1994, each licensee shall submit a revised Fixed Site Physical Protection Plan to the NRC for approval. The revised plan must describe how the licensee will comply with the requirements of paragraphs (b)(10) and (b)(11) of this section or the requirements of (b)(12) of this section. Revised plans must be mailed to the Director, Division of Fuel Management, Office of Nuclear Material Safety and Safeguards, U.S. Nuclear Regulatory Commission, Washington, DC 20555.

(2) Each licensee shall implement the approved plan pursuant to paragraphs (b)(10) and (b)(11) of this section or (b)(12) of this section within 1 year after NRC approval of the revised Fixed Site Physical Protection Plan.

[44 FR 68194, Nov. 28, 1979, as amended at 53 FR 19258, May 27, 1988; 53 FR 23383, June 22, 1988; 53 FR 45452, Nov. 10, 1988; 57 FR 33430, July 29, 1992; 58 FR 29522, May 21, 1993; 58 FR 45784, Aug. 31, 1993; 59 FR 38348, July 28, 1994; 79 FR 75741, Dec. 19, 2014; 84 FR 65646, Nov. 29, 2019]

§ 73.50 Requirements for physical protection of licensed activities.

Each licensee who is not subject to § 73.51, but who possesses, uses, or stores formula quantities of strategic special nuclear material that are not readily separable from other radioactive material and which have a total external radiation level in excess of 1 gray (100 rad) per hour at a distance of 1 meter (3.3 feet) from any accessible surfaces without intervening shielding other than at nuclear reactor facility licensed under parts 50 or 52 of this chapter, shall comply with the following:

(a) *Physical security organization.* (1) The licensee shall establish a security organization, including guards, to protect his facility against radiological sabotage and the special nuclear material in his possession against theft.

(2) At least one supervisor of the security organization shall be on site at all times.

(3) The licensee shall establish, maintain, and follow written security procedures that document the structure of the security organization and detail the duties of guards, watchmen, and other individuals responsible for security. The licensee shall retain a copy of the current procedures as a record until the Commission terminates each license for which the procedures were developed and, if any portion of the procedures is superseded, retain the superseded material for three years after each change.

(4) The licensee may not permit an individual to act as a guard, watchman, armed response person, or other member of the security organization unless the individual has been trained, equipped, and qualified to perform each assigned security job duty in accordance with appendix B, ''General Criteria for Security Personnel,'' to this part. Upon the request of an authorized representative of the Commission, the licensee shall demonstrate the ability of the physical security personnel to carry out their assigned duties and responsibilities. Each guard, watchman, armed response person, and other member of the security organization shall requalify in accordance with appendix B to this part at least every 12 months. This requalification must be documented. The licensee shall retain the documentation of each requalification as a record for three years after the requalification.

(b) *Physical barriers.* (1) The licensee shall locate vital equipment only within a vital area, which, in turn, shall be located within a protected area such that access to vital equipment requires passage through at least two physical barriers. More than one vital area may be within a single protected area.

(2) The licensee shall locate material access areas only within protected areas such that access to the material access area requires passage through at least two physical barriers. More than one material access area may be within a single protected area.

(3) The physical barrier at the perimeter of the protected area shall be separated from any other barrier designated as a physical barrier within the protected area, and the intervening space monitored or periodically

checked to detect the presence of persons or vehicles so that the facility security organization can respond to suspicious activity or to the breaching of any physical barrier.

(4) An isolation zone shall be maintained around the physical barrier at the perimeter of the protected area and any part of a building used as part of that physical barrier. The isolation zone shall be monitored to detect the presence of individuals or vehicles within the zone so as to allow response by armed members of the license security organization to be initiated at the time of penetration of the protected area. Parking facilities, both for employees and visitors, shall be located outside the isolation zone.

(5) Isolation zones and clear areas between barriers shall be provided with illumination sufficient for the monitoring required by paragraphs (b) (3) and (4) of this section, but not less than 0.2 foot candles.

(c) *Access requirements*. The licensee shall control all points of personnel and vehicle access into a protected area, including shipping or receiving areas, and into each vital area. Identification of personnel and vehicles shall be made and authorization shall be checked at such points.

(1) At the point of personnel and vehicle access into a protected area, all individuals, except employees who possess a NRC or United States Department of Energy access authorization, and all hand-carried packages shall be searched for devices such as firearms, explosives, and incendiary devices, or other items which could be used for radiological sabotage. The search shall be conducted either by a physical search or by the use of equipment capable of detecting such devices. Employees who possess an NRC or Department of Energy access authorization shall be searched at random intervals. Subsequent to search, drivers of delivery and service vehicles shall be escorted at all times while within the protection area.

(2) All packages being delivered into the protected area shall be checked for proper identification and authorization. Packages other than hand-carried packages shall be searched at random intervals.

(3) A picture badge identification system shall be used for all individuals who are authorized access to protected areas without escort.

(4) Access to vital areas and material access areas shall be limited to individuals who are authorized access to vital equipment or special nuclear material and who require such access to perform their duties. Authorization for such individuals shall be provided by the issuance of specially coded numbered badges indicating vital areas and material access areas to which access is authorized. Unoccupied vital areas and material access areas shall be protected by an active intrusion alarm system.

(5) Individuals not employed by the licensee must be escorted by a watchman, or other individual designated by the licensee, while in a protected area and must be badged to indicate that an escort is required. In addition, the licensee shall require that each individual not employed by the licensee register his or her name, date, time, purpose of visit, employment affiliation, citizenship, name and badge number of the escort, and name of the individual to be visited. The licensee shall retain the register of information for three years after the last entry is made in the register. Except for a driver of a delivery or service vehicle, an individual not employed by the licensee who requires frequent and extended access to a protected area or a vital area need not be escorted if the individual is provided with a picture badge, which the individual must receive upon entrance into the protected area and return each time he or she leaves the protected area, that indicates—

(i) Nonemployee-no escort required,

(ii) Areas to which access is authorized, and

(iii) The period for which access has been authorized.

(6) No vehicles used primarily for the conveyance of individuals shall be permitted within a protected area except under emergency conditions.

(7) Keys, locks, combinations, and related equipment shall be controlled to minimize the possibility of compromise and promptly changed whenever there

is evidence that they have been compromised. Upon termination of employment of any employee, keys, locks, combinations, and related equipment to which that employee had access shall be changed.

(d) *Detection aids.* (1) All alarms required pursuant to this part shall annunciate in a continuously manned central alarm station located within the protected area and in at least one other continuously manned station, not necessarily within the protected area, such that a single act cannot remove the capability of calling for assistance or otherwise responding to an alarm. All alarms shall be self-checking and tamper indicating. The annunciation of an alarm at the onsite central alarm station shall indicate the type of alarm (e.g., intrusion alarm, emergency exit alarm, etc.) and location. All intrusion alarms, emergency exit alarms, alarm systems, and line supervisory systems shall at minimum meet the performance and reliability levels indicated by GSA Interim Federal Specification W-A–00450 B (GSA-FSS). The GSA Interim Federal Specification has been approved for incorporation by reference by the Director of the Federal Register. A copy of the material is available for inspection at the NRC Library, 11545 Rockville Pike, Rockville, Maryland 20852-2738.

(2) All emergency exits in each protected area and each vital area shall be alarmed.

(e) *Communication requirements.* (1) Each guard or watchman on duty shall be capable of maintaining continuous communication with an individual in a continuously manned central alarm station within the protected area, who shall be capable of calling for assistance from other guards and watchmen and from local law enforcement authorities.

(2) The alarm stations required by paragraph (d)(1) of this section shall have conventional telephone service for communication with the law enforcement authorities as described in paragraph (e)(1) of this section.

(3) To provide the capability of continuous communication, two-way radio voice communication shall be established in addition to conventional telephone service between local law enforcement authorities and the facility and shall terminate at the facility in a continuously manned central alarm station within the protected area.

(4) All communications equipment, including offsite equipment, shall remain operable from independent power sources in the event of loss of primary power.

(f) *Testing and maintenance.* Each licensee shall test and maintain intrusion alarms, emergency alarms, communications equipment, physical barriers, and other security related devices or equipment utilized pursuant to this section as follows:

(1) All alarms, communications equipment, physical barriers, and other security related devices or equipment shall be maintained in operable and effective condition.

(2) Each intrusion alarm shall be functionally tested for operability and required performance at the beginning and end of each interval during which it is used for security, but not less frequently than once every seven (7) days.

(3) Communications equipment shall be tested for operability and performance not less frequently than once at the beginning of each security personnel work shift.

(g) *Response requirement.* (1) The licensee shall establish, maintain, and follow an NRC-approved safeguards contingency plan for responding to threats, thefts, and radiological sabotage related to the special nuclear material and nuclear facilities subject to the provisions of this section. Safeguards contingency plans must be in accordance with the criteria in appendix C to this part, ''Licensee Safeguards Contingency Plans.'' The licensee shall retain the current safeguards contingency plan as a record until the Commission terminates the license and, if any portion of the plan is superseded, retain the superseded portion for 3 years after the effective date of the change.

(2) The licensee shall establish and document liaison with law enforcement authorities. The licensee shall retain the documentation of the current liaison as a record until the Commission terminates each license for which the

liaison was developed and, if any portion of the liaison documentation is superseded, retain the superseded material for three years after each change.

(3) Upon detection of abnormal presence or activity of persons or vehicles within an isolation zone, a protected area, a material access area, or a vital area; or upon evidence or indication of intrusion into a protected area, material access area, or vital area, the licensee security organization shall:

(i) Determine whether or not a threat exists,

(ii) Assess the extent of the threat, if any, and

(iii) Take immediate concurrent measures to neutralize the threat, by:

(A) Requiring responding guards to interpose themselves between material access areas and vital areas and any adversary attempting entry for the purpose of theft of special nuclear material or radiological sabotage and to intercept any person exiting with special nuclear material, and,

(B) Informing local law enforcement agencies of the threat and requesting assistance.

(4) The licensee shall instruct every guard to prevent or impede attempted acts of theft or radiological sabotage by using force sufficient to counter the force directed at him including deadly force when the guard has a reasonable belief it is necessary in self-defense or in the defense of others.

(h) Each licensee shall establish, maintain, and follow an NRC-approved training and qualifications plan outlining the processes by which guards, watchmen, armed response persons, and other members of the security organization will be selected, trained, equipped, tested, and qualified to ensure that these individuals meet the requirements of paragraph (a)(4) of this section.

(Sec. 161i, Pub. L. 83–703, 68 Stat. 948, Pub. L. 93–377, 88 Stat. 475; secs. 201, 204(b)(1), Pub. L. 93–438, 88 Stat. 1242–1243, 1245, Pub. L. 94–79, 89 Stat. 413 (42 U.S.C. 2201, 5841, 5844))

[38 FR 35430, Dec. 28, 1973, as amended at 42 FR 64103, Dec. 22, 1977; 43 FR 11965, Mar. 23, 1978; 43 FR 37426, Aug. 23, 1978; 44 FR 68198, Nov. 28, 1979; 53 FR 19259, May 27, 1988; 57 FR 33430, July 29, 1992; 57 FR 61787, Dec. 29, 1992; 59 FR 50689, Oct. 5, 1994; 63 FR 26962, May 15, 1998; 72 FR 49561, Aug. 28, 2007; 86 FR 43403, Aug. 9, 2021]

§ 73.51 Requirements for the physical protection of stored spent nuclear fuel and high-level radioactive waste.

(a) *Applicability*. Notwithstanding the provisions of §§ 73.20, 73.50, or 73.67, the physical protection requirements of this section apply to each licensee that stores spent nuclear fuel and high-level radioactive waste pursuant to paragraphs (a)(1)(i), (ii), and (2) of this section. This includes—

(1) Spent nuclear fuel and high-level radioactive waste stored under a specific license issued pursuant to part 72 of this chapter:

(i) At an independent spent fuel storage installation (ISFSI) or

(ii) At a monitored retrievable storage (MRS) installation; or

(2) Spent nuclear fuel and high-level radioactive waste at a geologic repository operations area (GROA) licensed pursuant to part 60 or 63 of this chapter;

(b) *General performance objectives*. (1) Each licensee subject to this section shall establish and maintain a physical protection system with the objective of providing high assurance that activities involving spent nuclear fuel and high-level radioactive waste do not constitute an unreasonable risk to public health and safety.

(2) To meet the general objective of paragraph (b)(1) of this section, each licensee subject to this section shall meet the following performance capabilities.

(i) Store spent nuclear fuel and high-level radioactive waste only within a protected area;

(ii) Grant access to the protected area only to individuals who are authorized to enter the protected area;

(iii) Detect and assess unauthorized penetration of, or activities within, the protected area;

(iv) Provide timely communication to a designated response force whenever necessary; and

(v) Manage the physical protection organization in a manner that maintains its effectiveness.

(3) The physical protection system must be designed to protect against loss of control of the facility that could

be sufficient to cause a radiation exposure exceeding the dose as described in § 72.106 of this chapter.

(c) *Plan retention.* Each licensee subject to this section shall retain a copy of the effective physical protection plan as a record for 3 years or until termination of the license for which procedures were developed.

(d) *Physical protection systems, components, and procedures.* A licensee shall comply with the following provisions as methods acceptable to NRC for meeting the performance capabilities of § 73.51(b)(2). The Commission may, on a specific basis and upon request or on its own initiative, authorize other alternative measures for the protection of spent fuel and high-level radioactive waste subject to the requirements of this section, if after evaluation of the specific alternative measures, it finds reasonable assurance of compliance with the performance capabilities of paragraph (b)(2) of this section.

(1) Spent nuclear fuel and high-level radioactive waste must be stored only within a protected area so that access to this material requires passage through or penetration of two physical barriers, one barrier at the perimeter of the protected area and one barrier offering substantial penetration resistance. The physical barrier at the perimeter of the protected area must be as defined in § 73.2. Isolation zones, typically 20 feet wide each, on both sides of this barrier, must be provided to facilitate assessment. The barrier offering substantial resistance to penetration may be provided by an approved storage cask or building walls such as those of a reactor or fuel storage building.

(2) Illumination must be sufficient to permit adequate assessment of unauthorized penetrations of or activities within the protected area.

(3) The perimeter of the protected area must be subject to continual surveillance and be protected by an active intrusion alarm system which is capable of detecting penetrations through the isolation zone and that is monitored in a continually staffed primary alarm station and in one additional continually staffed location. The primary alarm station must be located within the protected area; have bullet-resisting walls, doors, ceiling, and floor; and the interior of the station must not be visible from outside the protected area. A timely means for assessment of alarms must also be provided. Regarding alarm monitoring, the redundant location need only provide a summary indication that an alarm has been generated.

(4) The protected area must be monitored by daily random patrols.

(5) A security organization with written procedures must be established. The security organization must include sufficient personnel per shift to provide for monitoring of detection systems and the conduct of surveillance, assessment, access control, and communications to assure adequate response. Members of the security organization must be trained, equipped, qualified, and requalified to perform assigned job duties in accordance with appendix B to part 73, sections I.A, (1) (a) and (b), B(1)(a), and the applicable portions of II.

(6) Documented liaison with a designated response force or local law enforcement agency (LLEA) must be established to permit timely response to unauthorized penetration or activities.

(7) A personnel identification system and a controlled lock system must be established and maintained to limit access to authorized individuals.

(8) Redundant communications capability must be provided between onsite security force members and designated response force or LLEA.

(9) All individuals, vehicles, and hand-carried packages entering the protected area must be checked for proper authorization and visually searched for explosives before entry.

(10) Written response procedures must be established and maintained for addressing unauthorized penetration of, or activities within, the protected area including Category 5, ''Procedures,'' of appendix C to part 73. The licensee shall retain a copy of response procedures as a record for 3 years or until termination of the license for which the procedures were developed. Copies of superseded material must be retained for 3 years after each change or until termination of the license.

(11) All detection systems and supporting subsystems must be tamper indicating with line supervision. These systems, as well as surveillance/assessment and illumination systems, must be maintained in operable condition. Timely compensatory measures must be taken after discovery of inoperability, to assure that the effectiveness of the of the security system is not reduced.

(12) The physical protection program must be reviewed once every 24 months by individuals independent of both physical protection program management and personnel who have direct responsibility for implementation of the physical protection program. The physical protection program review must include an evaluation of the effectiveness of the physical protection system and a verification of the liaison established with the designated response force or LLEA.

(13) The following documentation must be retained as a record for 3 years after the record is made or until termination of the license. Duplicate records to those required under § 72.180 of part 72 and § 73.71 of this part need not be retained under the requirements of this section:

(i) A log of individuals granted access to the protected area;

(ii) Screening records of members of the security organization;

(iii) A log of all patrols;

(iv) A record of each alarm received, identifying the type of alarm, location, date and time when received, and disposition of the alarm; and

(v) The physical protection program review reports.

(e) A licensee that operates a GROA is exempt from the requirements of this section for that GROA after permanent closure of the GROA.

[63 FR 26962, May 15, 1998, as amended at 63 FR 49414, Sept. 16, 1998; 66 FR 55816, Nov. 2, 2001]

§ 73.54 Protection of digital computer and communication systems and networks.

By November 23, 2009 each licensee currently licensed to operate a nuclear power plant under part 50 of this chapter shall submit, as specified in § 50.4 and § 50.90 of this chapter, a cyber security plan that satisfies the requirements of this section for Commission review and approval. Each submittal must include a proposed implementation schedule. Implementation of the licensee's cyber security program must be consistent with the approved schedule. Current applicants for an operating license or combined license who have submitted their applications to the Commission prior to the effective date of this rule must amend their applications to include a cyber security plan consistent with this section.

(a) Each licensee subject to the requirements of this section shall provide high assurance that digital computer and communication systems and networks are adequately protected against cyber attacks, up to and including the design basis threat as described in § 73.1.

(1) The licensee shall protect digital computer and communication systems and networks associated with:

(i) Safety-related and important-to-safety functions;

(ii) Security functions;

(iii) Emergency preparedness functions, including offsite communications; and

(iv) Support systems and equipment which, if compromised, would adversely impact safety, security, or emergency preparedness functions.

(2) The licensee shall protect the systems and networks identified in paragraph (a)(1) of this section from cyber attacks that would:

(i) Adversely impact the integrity or confidentiality of data and/or software;

(ii) Deny access to systems, services, and/or data; and

(iii) Adversely impact the operation of systems, networks, and associated equipment.

(b) To accomplish this, the licensee shall:

(1) Analyze digital computer and communication systems and networks and identify those assets that must be protected against cyber attacks to satisfy paragraph (a) of this section,

(2) Establish, implement, and maintain a cyber security program for the protection of the assets identified in paragraph (b)(1) of this section; and

(3) Incorporate the cyber security program as a component of the physical protection program.

(c) The cyber security program must be designed to:

(1) Implement security controls to protect the assets identified by paragraph (b)(1) of this section from cyber attacks;

(2) Apply and maintain defense-in-depth protective strategies to ensure the capability to detect, respond to, and recover from cyber attacks;

(3) Mitigate the adverse affects of cyber attacks; and

(4) Ensure that the functions of protected assets identified by paragraph (b)(1) of this section are not adversely impacted due to cyber attacks.

(d) As part of the cyber security program, the licensee shall:

(1) Ensure that appropriate facility personnel, including contractors, are aware of cyber security requirements and receive the training necessary to perform their assigned duties and responsibilities.

(2) Evaluate and manage cyber risks.

(3) Ensure that modifications to assets, identified by paragraph (b)(1) of this section, are evaluated before implementation to ensure that the cyber security performance objectives identified in paragraph (a)(1) of this section are maintained.

(4) Conduct cyber security event notifications in accordance with the provisions of § 73.77.

(e) The licensee shall establish, implement, and maintain a cyber security plan that implements the cyber security program requirements of this section.

(1) The cyber security plan must describe how the requirements of this section will be implemented and must account for the site-specific conditions that affect implementation.

(2) The cyber security plan must include measures for incident response and recovery for cyber attacks. The cyber security plan must describe how the licensee will:

(i) Maintain the capability for timely detection and response to cyber attacks;

(ii) Mitigate the consequences of cyber attacks;

(iii) Correct exploited vulnerabilities; and

(iv) Restore affected systems, networks, and/or equipment affected by cyber attacks.

(f) The licensee shall develop and maintain written policies and implementing procedures to implement the cyber security plan. Policies, implementing procedures, site-specific analysis, and other supporting technical information used by the licensee need not be submitted for Commission review and approval as part of the cyber security plan but are subject to inspection by NRC staff on a periodic basis.

(g) The licensee shall review the cyber security program as a component of the physical security program in accordance with the requirements of § 73.55(m), including the periodicity requirements.

(h) The licensee shall retain all records and supporting technical documentation required to satisfy the requirements of this section as a record until the Commission terminates the license for which the records were developed, and shall maintain superseded portions of these records for at least three (3) years after the record is superseded, unless otherwise specified by the Commission.

[74 FR 13970, Mar. 27, 2009, as amended at 80 FR 67275, Nov. 2, 2015]

§ 73.55 Requirements for physical protection of licensed activities in nuclear power reactors against radiological sabotage.

(a) *Introduction.* (1) By March 31, 2010, each nuclear power reactor licensee, licensed under 10 CFR part 50, shall implement the requirements of this section through its Commission-approved Physical Security Plan, Training and Qualification Plan, Safeguards Contingency Plan, and Cyber Security Plan referred to collectively hereafter as ''security plans.'' Current applicants for an operating license under 10 CFR part 50, or combined license under 10 CFR part 52 who have submitted their applications to the Commission prior to the effective date of this rule must amend their applications to include security plans consistent with this section.

(2) The security plans must identify, describe, and account for site-specific conditions that affect the licensee's capability to satisfy the requirements of this section.

(3) The licensee is responsible for maintaining the onsite physical protection program in accordance with Commission regulations through the implementation of security plans and written security implementing procedures.

(4) Applicants for an operating license under the provisions of part 50 of this chapter or holders of a combined license under the provisions of part 52 of this chapter, shall implement the requirements of this section before fuel is allowed onsite (protected area).

(5) The Tennessee Valley Authority Watts Bar Nuclear Plant, Unit 2, holding a current construction permit under the provisions of part 50 of this chapter, shall meet the revised requirements in paragraphs (a) through (r) of this section as applicable to operating nuclear power reactor facilities.

(6) Applicants for an operating license under the provisions of part 50 of this chapter, or holders of a combined license under the provisions of part 52 of this chapter that do not reference a standard design certification or reference a standard design certification issued after May 26, 2009 shall meet the requirement of § 73.55(i)(4)(iii).

(b) *General performance objective and requirements.* (1) The licensee shall establish and maintain a physical protection program, to include a security organization, which will have as its objective to provide high assurance that activities involving special nuclear material are not inimical to the common defense and security and do not constitute an unreasonable risk to the public health and safety.

(2) To satisfy the general performance objective of paragraph (b)(1) of this section, the physical protection program must protect against the design basis threat of radiological sabotage as stated in § 73.1.

(3) The physical protection program must be designed to prevent significant core damage and spent fuel sabotage. Specifically, the program must:

(i) Ensure that the capabilities to detect, assess, interdict, and neutralize threats up to and including the design basis threat of radiological sabotage as stated in § 73.1, are maintained at all times.

(ii) Provide defense-in-depth through the integration of systems, technologies, programs, equipment, supporting processes, and implementing procedures as needed to ensure the effectiveness of the physical protection program.

(4) The licensee shall analyze and identify site-specific conditions, including target sets, that may affect the specific measures needed to implement the requirements of this section and shall account for these conditions in the design of the physical protection program.

(5) Upon the request of an authorized representative of the Commission, the licensee shall demonstrate the ability to meet Commission requirements through the implementation of the physical protection program, including the ability of armed and unarmed personnel to perform assigned duties and responsibilities required by the security plans and licensee procedures.

(6) The licensee shall establish, maintain, and implement a performance evaluation program in accordance with appendix B to this part, to demonstrate and assess the effectiveness of armed responders and armed security officers to implement the licensee's protective strategy.

(7) The licensee shall establish, maintain, and implement an access authorization program in accordance with § 73.56 and shall describe the program in the Physical Security Plan.

(8) The licensee shall establish, maintain, and implement a cyber security program in accordance with § 73.54.

(9) The licensee shall establish, maintain, and implement an insider mitigation program and shall describe the program in the Physical Security Plan.

(i) The insider mitigation program must monitor the initial and continuing trustworthiness and reliability of individuals granted or retaining unescorted access authorization to a protected or vital area, and implement

defense-in-depth methodologies to minimize the potential for an insider to adversely affect, either directly or indirectly, the licensee's capability to prevent significant core damage and spent fuel sabotage.

(ii) The insider mitigation program must contain elements from:

(A) The access authorization program described in § 73.56;

(B) The fitness-for-duty program described in part 26 of this chapter;

(C) The cyber security program described in § 73.54; and

(D) The physical protection program described in this section.

(10) The licensee shall use the site corrective action program to track, trend, correct and prevent recurrence of failures and deficiencies in the physical protection program.

(11) Implementation of security plans and associated procedures must be coordinated with other onsite plans and procedures to preclude conflict during both normal and emergency conditions.

(c) *Security plans.* (1) Licensee security plans must describe:

(i) How the licensee will implement requirements of this section through the establishment and maintenance of a security organization, the use of security equipment and technology, the training and qualification of security personnel, the implementation of predetermined response plans and strategies, and the protection of digital computer and communication systems and networks.

(ii) Site-specific conditions that affect how the licensee implements Commission requirements.

(2) *Protection of security plans.* The licensee shall protect the security plans and other security-related information against unauthorized disclosure in accordance with the requirements of § 73.21.

(3) *Physical Security Plan.* The licensee shall establish, maintain, and implement a Physical Security Plan which describes how the performance objective and requirements set forth in this section will be implemented.

(4) *Training and Qualification Plan.* The licensee shall establish, maintain, and implement, and follow a Training and Qualification Plan that describes how the criteria set forth in appendix B, section VI, to this part, ''Nuclear Power Reactor Training and Qualification Plan for Personnel Performing Security Program Duties,'' will be implemented.

(5) *Safeguards Contingency Plan.* The licensee shall establish, maintain, and implement a Safeguards Contingency Plan that describes how the criteria set forth in appendix C, section II, to this part, ''Nuclear Power Plant Safeguards Contingency Plans,'' will be implemented.

(6) *Cyber Security Plan.* The licensee shall establish, maintain, and implement a Cyber Security Plan that describes how the criteria set forth in § 73.54 ''Protection of Digital Computer and Communication systems and Networks'' of this part will be implemented.

(7) *Security implementing procedures.* (i) The licensee shall have a management system to provide for the development, implementation, revision, and oversight of security procedures that implement Commission requirements and the security plans.

(ii) Implementing procedures must document the structure of the security organization and detail the types of duties, responsibilities, actions, and decisions to be performed or made by each position of the security organization.

(iii) The licensee shall:

(A) Provide a process for the written approval of implementing procedures and revisions by the individual with overall responsibility for the security program.

(B) Ensure that revisions to security implementing procedures satisfy the requirements of this section.

(iv) Implementing procedures need not be submitted to the Commission for approval, but are subject to inspection by the Commission.

(d) *Security organization.* (1) The licensee shall establish and maintain a security organization that is designed, staffed, trained, qualified, and equipped to implement the physical protection program in accordance with the requirements of this section.

(2) The security organization must include:

(i) A management system that provides oversight of the onsite physical protection program.

(ii) At least one member, onsite and available at all times, who has the authority to direct the activities of the security organization and who is assigned no other duties that would interfere with this individual's ability to perform these duties in accordance with the security plans and the licensee protective strategy.

(3) The licensee may not permit any individual to implement any part of the physical protection program unless the individual has been trained, equipped, and qualified to perform their assigned duties and responsibilities in accordance with appendix B, section VI, to this part and the Training and Qualification Plan. Non-security personnel may be assigned duties and responsibilities required to implement the physical protection program and shall:

(i) Be trained through established licensee training programs to ensure each individual is trained, qualified, and periodically re-qualified to perform assigned duties.

(ii) Be properly equipped to perform assigned duties.

(iii) Possess the knowledge, skills, and abilities, to include physical attributes such as sight and hearing, required to perform their assigned duties and responsibilities.

(e) *Physical barriers*. Each licensee shall identify and analyze site-specific conditions to determine the specific use, type, function, and placement of physical barriers needed to satisfy the physical protection program design requirements of § 73.55(b).

(1) The licensee shall:

(i) Design, construct, install and maintain physical barriers as necessary to control access into facility areas for which access must be controlled or denied to satisfy the physical protection program design requirements of paragraph (b) of this section.

(ii) Describe in the physical security plan, physical barriers, barrier systems, and their functions within the physical protection program.

(2) The licensee shall retain, in accordance with § 73.70, all analyses and descriptions of the physical barriers and barrier systems used to satisfy the requirements of this section, and shall protect these records in accordance with the requirements of § 73.21.

(3) Physical barriers must:

(i) Be designed and constructed to:

(A) Protect against the design basis threat of radiological sabotage;

(B) Account for site-specific conditions; and

(C) Perform their required function in support of the licensee physical protection program.

(ii) Provide deterrence, delay, or support access control.

(iii) Support effective implementation of the licensee's protective strategy.

(4) Consistent with the stated function to be performed, openings in any barrier or barrier system established to meet the requirements of this section must be secured and monitored to prevent exploitation of the opening.

(5) *Bullet resisting physical barriers*. The reactor control room, the central alarm station, and the location within which the last access control function for access to the protected area is performed, must be bullet-resisting.

(6) *Owner controlled area*. The licensee shall establish and maintain physical barriers in the owner controlled area as needed to satisfy the physical protection program design requirements of § 73.55(b).

(7) *Isolation zone*. (i) An isolation zone must be maintained in outdoor areas adjacent to the protected area perimeter barrier. The isolation zone shall be:

(A) Designed and of sufficient size to permit observation and assessment of activities on either side of the protected area barrier;

(B) Monitored with intrusion detection equipment designed to satisfy the requirements of § 73.55(i) and be capable of detecting both attempted and actual penetration of the protected area perimeter barrier before completed penetration of the protected area perimeter barrier; and

(C) Monitored with assessment equipment designed to satisfy the requirements of § 73.55(i) and provide real-time and play-back/recorded video images of the detected activities before and after each alarm annunciation.

(ii) Obstructions that could prevent the licensee's capability to meet the

observation and assessment requirements of this section must be located outside of the isolation zone.

(8) *Protected area.* (i) The protected area perimeter must be protected by physical barriers that are designed and constructed to:

(A) Limit access into the protected area to only those personnel, vehicles, and materials required to perform official duties;

(B) Channel personnel, vehicles, and materials to designated access control portals; and

(C) Be separated from any other barrier designated as a vital area physical barrier, unless otherwise identified in the Physical Security Plan.

(ii) Penetrations through the protected area barrier must be secured and monitored in a manner that prevents or delays, and detects the exploitation of any penetration.

(iii) All emergency exits in the protected area must be alarmed and secured by locking devices that allow prompt egress during an emergency and satisfy the requirements of this section for access control into the protected area.

(iv) Where building walls or roofs comprise a portion of the protected area perimeter barrier, an isolation zone is not necessary provided that the detection and, assessment requirements of this section are met, appropriate barriers are installed, and the area is described in the security plans.

(v) All exterior areas within the protected area, except for areas that must be excluded for safety reasons, must be periodically checked to detect and deter unauthorized personnel, vehicles, and materials.

(9) *Vital areas.* (i) Vital equipment must be located only within vital areas, which must be located within a protected area so that access to vital equipment requires passage through at least two physical barriers, except as otherwise approved by the Commission and identified in the security plans.

(ii) The licensee shall protect all vital area access portals and vital area emergency exits with intrusion detection equipment and locking devices that allow rapid egress during an emergency and satisfy the vital area entry control requirements of this section.

(iii) Unoccupied vital areas must be locked and alarmed.

(iv) More than one vital area may be located within a single protected area.

(v) At a minimum, the following shall be considered vital areas:

(A) The reactor control room;

(B) The spent fuel pool;

(C) The central alarm station; and

(D) The secondary alarm station in accordance with § 73.55(i)(4)(iii).

(vi) At a minimum, the following shall be located within a vital area:

(A) The secondary power supply systems for alarm annunciation equipment; and

(B) The secondary power supply systems for non-portable communications equipment.

(10) *Vehicle control measures.* Consistent with the physical protection program design requirements of § 73.55(b), and in accordance with the site-specific analysis, the licensee shall establish and maintain vehicle control measures, as necessary, to protect against the design basis threat of radiological sabotage vehicle bomb assault.

(i) *Land vehicles.* Licensees shall:

(A) Design, construct, install, and maintain a vehicle barrier system, to include passive and active barriers, at a stand-off distance adequate to protect personnel, equipment, and systems necessary to prevent significant core damage and spent fuel sabotage against the effects of the design basis threat of radiological sabotage land vehicle bomb assault.

(B) Periodically check the operation of active vehicle barriers and provide a secondary power source, or a means of mechanical or manual operation in the event of a power failure, to ensure that the active barrier can be placed in the denial position to prevent unauthorized vehicle access beyond the required standoff distance.

(C) Provide periodic surveillance and observation of vehicle barriers and barrier systems adequate to detect indications of tampering and degradation or to otherwise ensure that each vehicle barrier and barrier system is able to satisfy the intended function.

(D) Where a site has rail access to the protected area, install a train derailer, remove a section of track, or restrict access to railroad sidings and provide

periodic surveillance of these measures.

(ii) *Waterborne vehicles.* Licensees shall:

(A) Identify areas from which a waterborne vehicle must be restricted, and where possible, in coordination with local, State, and Federal agencies having jurisdiction over waterway approaches, deploy buoys, markers, or other equipment.

(B) In accordance with the site-specific analysis, provide periodic surveillance and observation of waterway approaches and adjacent areas.

(f) *Target sets.* (1) The licensee shall document and maintain the process used to develop and identify target sets, to include the site-specific analyses and methodologies used to determine and group the target set equipment or elements.

(2) The licensee shall consider cyber attacks in the development and identification of target sets.

(3) Target set equipment or elements that are not contained within a protected or vital area must be identified and documented consistent with the requirements in § 73.55(f)(1) and be accounted for in the licensee's protective strategy.

(4) The licensee shall implement a process for the oversight of target set equipment and systems to ensure that changes to the configuration of the identified equipment and systems are considered in the licensee's protective strategy. Where appropriate, changes must be made to documented target sets.

(g) *Access controls.* (1) Consistent with the function of each barrier or barrier system, the licensee shall control personnel, vehicle, and material access, as applicable, at each access control point in accordance with the physical protection program design requirements of § 73.55(b).

(i) To accomplish this, the licensee shall:

(A) Locate access control portals outside of, or concurrent with, the physical barrier system through which it controls access.

(B) Equip access control portals with locking devices, intrusion detection equipment, and surveillance equipment consistent with the intended function.

(C) Provide supervision and control over the badging process to prevent unauthorized bypass of access control equipment located at or outside of the protected area.

(D) Limit unescorted access to the protected area and vital areas, during non-emergency conditions, to only those individuals who require unescorted access to perform assigned duties and responsibilities.

(E) Assign an individual the responsibility for the last access control function (controlling admission to the protected area) and isolate the individual within a bullet-resisting structure to assure the ability of the individual to respond or summon assistance.

(ii) Where vehicle barriers are established, the licensee shall:

(A) Physically control vehicle barrier portals to ensure only authorized vehicles are granted access through the barrier.

(B) Search vehicles and materials for contraband or other items which could be used to commit radiological sabotage in accordance with paragraph (h) of this section.

(C) Observe search functions to ensure a response can be initiated if needed.

(2) Before granting access into the protected area, the licensee shall:

(i) Confirm the identity of individuals.

(ii) Verify the authorization for access of individuals, vehicles, and materials.

(iii) Confirm, in accordance with industry shared lists and databases that individuals are not currently denied access to another licensed facility.

(iv) Search individuals, vehicles, and materials in accordance with paragraph (h) of this section.

(3) *Vehicles in the protected area.* (i) The licensee shall exercise control over all vehicles inside the protected area to ensure that they are used only by authorized persons and for authorized purposes.

(ii) Vehicles inside the protected area must be operated by an individual authorized unescorted access to the area, or must be escorted by an individual as required by paragraph (g)(8) of this section.

(iii) Vehicle use inside the protected area must be limited to plant functions or emergencies, and keys must be removed or the vehicle otherwise disabled when not in use.

(iv) Vehicles transporting hazardous materials inside the protected area must be escorted by an armed member of the security organization.

(4) *Vital areas.* (i) Licensees shall control access into vital areas consistent with access authorization lists.

(ii) In response to a site-specific credible threat or other credible information, implement a two-person (line-of-sight) rule for all personnel in vital areas so that no one individual is permitted access to a vital area.

(5) *Emergency conditions.* (i) The licensee shall design the access control system to accommodate the potential need for rapid ingress or egress of authorized individuals during emergency conditions or situations that could lead to emergency conditions.

(ii) To satisfy the design criteria of paragraph (g)(5)(i) of this section during emergency conditions, the licensee shall implement security procedures to ensure that authorized emergency personnel are provided prompt access to affected areas and equipment.

(6) *Access control devices.* (i) The licensee shall control all keys, locks, combinations, passwords and related access control devices used to control access to protected areas, vital areas and security systems to reduce the probability of compromise. To accomplish this, the licensee shall:

(A) Issue access control devices only to individuals who have unescorted access authorization and require access to perform official duties and responsibilities.

(B) Maintain a record, to include name and affiliation, of all individuals to whom access control devices have been issued, and implement a process to account for access control devices at least annually.

(C) Implement compensatory measures upon discovery or suspicion that any access control device may have been compromised. Compensatory measures must remain in effect until the compromise is corrected.

(D) Retrieve, change, rotate, deactivate, or otherwise disable access control devices that have been or may have been compromised or when a person with access to control devices has been terminated under less than favorable conditions.

(ii) The licensee shall implement a numbered photo identification badge system for all individuals authorized unescorted access to the protected area and vital areas.

(A) Identification badges may be removed from the protected area only when measures are in place to confirm the true identity and authorization for unescorted access of the badge holder before allowing unescorted access to the protected area.

(B) Except where operational safety concerns require otherwise, identification badges must be clearly displayed by all individuals while inside the protected area and vital areas.

(C) The licensee shall maintain a record, to include the name and areas to which unescorted access is granted, of all individuals to whom photo identification badges have been issued.

(iii) Access authorization program personnel shall be issued passwords and combinations to perform their assigned duties and may be excepted from the requirement of paragraph (g)(6)(i)(A) of this section provided they meet the background requirements of § 73.56.

(7) *Visitors.* (i) The licensee may permit escorted access to protected and vital areas to individuals who have not been granted unescorted access in accordance with the requirements of § 73.56 and part 26 of this chapter. The licensee shall:

(A) Implement procedures for processing, escorting, and controlling visitors.

(B) Confirm the identity of each visitor through physical presentation of a recognized identification card issued by a local, State, or Federal government agency that includes a photo or contains physical characteristics of the individual requesting escorted access.

(C) Maintain a visitor control register in which all visitors shall register their name, date, time, purpose of visit, employment affiliation, citizenship, and name of the individual to be visited before being escorted into any protected or vital area.

(D) Issue a visitor badge to all visitors that clearly indicates an escort is required.

(E) Escort all visitors, at all times, while inside the protected area and vital areas.

(F) Deny escorted access to any individual who is currently denied access in industry shared data bases.

(ii) Individuals not employed by the licensee but who require frequent or extended unescorted access to the protected area and/or vital areas to perform duties and responsibilities required by the licensee at irregular or intermittent intervals, shall satisfy the access authorization requirements of § 73.56 and part 26 of this chapter, and shall be issued a non-employee photo identification badge that is easily distinguished from other identification badges before being allowed unescorted access to the protected and vital areas. Non-employee photo identification badges must visually reflect that the individual is a non-employee and that no escort is required.

(8) *Escorts.* The licensee shall ensure that all escorts are trained to perform escort duties in accordance with the requirements of this section and site training requirements.

(i) Escorts shall be authorized unescorted access to all areas in which they will perform escort duties.

(ii) Individuals assigned to visitor escort duties shall be provided a means of timely communication with security personnel to summon assistance when needed.

(iii) Individuals assigned to vehicle escort duties shall be trained and qualified in accordance with appendix B, section VI, of this part and provided a means of continuous communication with security personnel to ensure the ability to summon assistance when needed.

(iv) When visitors are performing work, escorts shall be generally knowledgeable of the activities to be performed by the visitor and report behaviors or activities that may constitute an unreasonable risk to the health and safety of the public and common defense and security, including a potential threat to commit radiological sabotage, consistent with § 73.56(f)(1).

(v) Each licensee shall describe visitor to escort ratios for the protected area and vital areas in physical security plans. Implementing procedures shall provide necessary observation and control requirements for all visitor activities.

(h) *Search programs.* (1) The objective of the search program is to detect, deter, and prevent the introduction of firearms, explosives, incendiary devices, or other items which could be used to commit radiological sabotage. To accomplish this the licensee shall search individuals, vehicles, and materials consistent with the physical protection program design requirements in paragraph (b) of this section, and the function to be performed at each access control point or portal before granting access.

(2) *Owner controlled area searches.* (i) Where the licensee has established physical barriers in the owner controlled area, the licensee shall implement search procedures for access control points in the barrier.

(ii) For each vehicle access control point, the licensee shall describe in implementing procedures areas of a vehicle to be searched, and the items for which the search is intended to detect and prevent access. Areas of the vehicle to be searched must include, but are not limited to, the cab, engine compartment, undercarriage, and cargo area.

(iii) Vehicle searches must be performed by at least two (2) trained and equipped security personnel, one of which must be armed. The armed individual shall be positioned to observe the search process and provide immediate response.

(iv) Vehicle searches must be accomplished through the use of equipment capable of detecting firearms, explosives, incendiary devices, or other items which could be used to commit radiological sabotage, or through visual and physical searches, or both, to ensure that all items are identified before granting access.

(v) Vehicle access control points must be equipped with video surveillance equipment that is monitored by an individual capable of initiating a response.

(3) Protected area searches. Licensees shall search all personnel, vehicles and materials requesting access to protected areas.

(i) The search for firearms, explosives, incendiary devices, or other items which could be used to commit radiological sabotage shall be accomplished through the use of equipment capable of detecting these items, or through visual and physical searches, or both, to ensure that all items are clearly identified before granting access to protected areas. The licensee shall subject all persons except official Federal, state, and local law enforcement personnel on official duty to these searches upon entry to the protected area. Armed security officers who are on duty and have exited the protected area may re-enter the protected area without being searched for firearms.

(ii) Whenever search equipment is out of service, is not operating satisfactorily, or cannot be used effectively to search individuals, vehicles, or materials, a visual and physical search shall be conducted.

(iii) When an attempt to introduce firearms, explosives, incendiary devices, or other items which could be used to commit radiological sabotage has occurred or is suspected, the licensee shall implement actions to ensure that the suspect individuals, vehicles, and materials are denied access and shall perform a visual and physical search to determine the absence or existence of a threat.

(iv) For each vehicle access portal, the licensee shall describe in implementing procedures areas of a vehicle to be searched before access is granted. Areas of the vehicle to be searched must include, but are not limited to, the cab, engine compartment, undercarriage, and cargo area.

(v) Exceptions to the protected area search requirements for materials may be granted for safety or operational reasons provided the design criteria of § 73.55(b) are satisfied, the materials are clearly identified, the types of exceptions to be granted are described in the security plans, and the specific security measures to be implemented for excepted items are detailed in site procedures.

(vi) To the extent practicable, excepted materials must be positively controlled, stored in a locked area, and opened at the final destination by an individual familiar with the items.

(vii) Bulk material excepted from the protected area search requirements must be escorted by an armed member of the security organization to its final destination or to a receiving area where the excepted items are offloaded and verified.

(viii) To the extent practicable, bulk materials excepted from search shall not be offloaded adjacent to a vital area.

(i) *Detection and assessment systems.* (1) The licensee shall establish and maintain intrusion detection and assessment systems that satisfy the design requirements of § 73.55(b) and provide, at all times, the capability to detect and assess unauthorized persons and facilitate the effective implementation of the licensee's protective strategy.

(2) Intrusion detection equipment must annunciate and video assessment equipment shall display concurrently, in at least two continuously staffed onsite alarm stations, at least one of which must be protected in accordance with the requirements of the central alarm station within this section.

(3) The licensee's intrusion detection and assessment systems must be designed to:

(i) Provide visual and audible annunciation of the alarm.

(ii) Provide a visual display from which assessment of the detected activity can be made.

(iii) Ensure that annunciation of an alarm indicates the type and location of the alarm.

(iv) Ensure that alarm devices to include transmission lines to annunciators are tamper indicating and self-checking.

(v) Provide an automatic indication when the alarm system or a component of the alarm system fails, or when the system is operating on the backup power supply.

(vi) Support the initiation of a timely response in accordance with the security plans, licensee protective strategy, and associated implementing procedures.

(vii) Ensure intrusion detection and assessment equipment at the protected area perimeter remains operable from an uninterruptible power supply in the event of the loss of normal power.

(4) *Alarm stations.* (i) Both alarm stations required by paragraph (i)(2) of this section must be designed and equipped to ensure that a single act, in accordance with the design basis threat of radiological sabotage defined in § 73.1(a)(1), cannot disable both alarm stations. The licensee shall ensure the survivability of at least one alarm station to maintain the ability to perform the following functions:

(A) Detect and assess alarms;

(B) Initiate and coordinate an adequate response to an alarm;

(C) Summon offsite assistance; and

(D) Provide command and control.

(ii) Licensees shall:

(A) Locate the central alarm station inside a protected area. The interior of the central alarm station must not be visible from the perimeter of the protected area.

(B) Continuously staff each alarm station with at least one trained and qualified alarm station operator. The alarm station operator must not be assigned other duties or responsibilities which would interfere with the ability to execute the functions described in § 73.55(i)(4)(i) of this section.

(C) Not permit any activities to be performed within either alarm station that would interfere with an alarm station operator's ability to execute assigned duties and responsibilities.

(D) Assess and initiate response to all alarms in accordance with the security plans and implementing procedures.

(E) Assess and initiate response to other events as appropriate.

(F) Ensure that an alarm station operator cannot change the status of a detection point or deactivate a locking or access control device at a protected or vital area portal, without the knowledge and concurrence of the alarm station operator in the other alarm station.

(G) Ensure that operators in both alarm stations are knowledgeable of the final disposition of all alarms.

(H) Maintain a record of all alarm annunciations, the cause of each alarm, and the disposition of each alarm.

(iii) Applicants for an operating license under the provisions of part 50 of this chapter, or holders of a combined license under the provisions of part 52 of this chapter, shall construct, locate, protect, and equip both the central and secondary alarm stations to the standards for the central alarm station contained in this section. Both alarm stations shall be equal and redundant, such that all functions needed to satisfy the requirements of this section can be performed in both alarm stations.

(5) *Surveillance, observation, and monitoring.* (i) The physical protection program must include surveillance, observation, and monitoring as needed to satisfy the design requirements of § 73.55(b), identify indications of tampering, or otherwise implement the site protective strategy.

(ii) The licensee shall provide continuous surveillance, observation, and monitoring of the owner controlled area as described in the security plans to detect and deter intruders and ensure the integrity of physical barriers or other components and functions of the onsite physical protection program. Continuous surveillance, observation, and monitoring responsibilities may be performed by security personnel during continuous patrols, through use of video technology, or by a combination of both.

(iii) Unattended openings that intersect a security boundary such as underground pathways must be protected by a physical barrier and monitored by intrusion detection equipment or observed by security personnel at a frequency sufficient to detect exploitation.

(iv) Armed security patrols shall periodically check external areas of the protected area to include physical barriers and vital area portals.

(v) Armed security patrols shall periodically inspect vital areas to include the physical barriers used at all vital area portals.

(vi) The licensee shall provide random patrols of all accessible areas containing target set equipment.

(vii) Security personnel shall be trained to recognize obvious indications of tampering consistent with their assigned duties and responsibilities.

(viii) Upon detection of tampering, or other threats, the licensee shall initiate response in accordance with the security plans and implementing procedures.

(6) *Illumination.* (i) The licensee shall ensure that all areas of the facility are provided with illumination necessary to satisfy the design requirements of § 73.55(b) and implement the protective strategy.

(ii) The licensee shall provide a minimum illumination level of 0.2 footcandles, measured horizontally at ground level, in the isolation zones and appropriate exterior areas within the protected area. Alternatively, the licensee may augment the facility illumination system by means of low-light technology to meet the requirements of this section or otherwise implement the protective strategy.

(iii) The licensee shall describe in the security plans how the lighting requirements of this section are met and, if used, the type(s) and application of low-light technology.

(j) *Communication requirements.* (1) The licensee shall establish and maintain continuous communication capability with onsite and offsite resources to ensure effective command and control during both normal and emergency situations.

(2) Individuals assigned to each alarm station shall be capable of calling for assistance in accordance with the security plans and the licensee's procedures.

(3) All on-duty security force personnel shall be capable of maintaining continuous communication with an individual in each alarm station, and vehicle escorts shall maintain continuous communication with security personnel. All personnel escorts shall maintain timely communication with the security personnel.

(4) The following continuous communication capabilities must terminate in both alarm stations required by this section:

(i) Radio or microwave transmitted two-way voice communication, either directly or through an intermediary, in addition to conventional telephone service between local law enforcement authorities and the site.

(ii) A system for communication with the control room.

(5) Non-portable communications equipment must remain operable from independent power sources in the event of the loss of normal power.

(6) The licensee shall identify site areas where communication could be interrupted or cannot be maintained, and shall establish alternative communication measures or otherwise account for these areas in implementing procedures.

(k) *Response requirements.* (1) The licensee shall establish and maintain, at all times, properly trained, qualified and equipped personnel required to interdict and neutralize threats up to and including the design basis threat of radiological sabotage as defined in § 73.1, to prevent significant core damage and spent fuel sabotage.

(2) The licensee shall ensure that all firearms, ammunition, and equipment necessary to implement the site security plans and protective strategy are in sufficient supply, are in working condition, and are readily available for use.

(3) The licensee shall train each armed member of the security organization to prevent or impede attempted acts of radiological sabotage by using force sufficient to counter the force directed at that person, including the use of deadly force when the armed member of the security organization has a reasonable belief that the use of deadly force is necessary in self-defense or in the defense of others, or any other circumstances as authorized by applicable State or Federal law.

(4) The licensee shall provide armed response personnel consisting of armed responders which may be augmented with armed security officers to carry out armed response duties within predetermined time lines specified by the site protective strategy.

(5) *Armed responders.* (i) The licensee shall determine the minimum number of armed responders necessary to satisfy the design requirements of § 73.55(b) and implement the protective

strategy. The licensee shall document this number in the security plans.

(ii) The number of armed responders shall not be less than ten (10).

(iii) Armed responders shall be available at all times inside the protected area and may not be assigned other duties or responsibilities that could interfere with their assigned response duties.

(6) *Armed security officers.* (i) Armed security officers, designated to strengthen onsite response capabilities, shall be onsite and available at all times to carry out their assigned response duties.

(ii) The minimum number of armed security officers designated to strengthen onsite response capabilities must be documented in the security plans.

(7) The licensee shall have procedures to reconstitute the documented number of available armed response personnel required to implement the protective strategy.

(8) *Protective strategy.* The licensee shall establish, maintain, and implement a written protective strategy in accordance with the requirements of this section and part 73, appendix C, Section II. Upon receipt of an alarm or other indication of a threat, the licensee shall:

(i) Determine the existence and level of a threat in accordance with pre-established assessment methodologies and procedures.

(ii) Initiate response actions to interdict and neutralize threats in accordance with the requirements of part 73, appendix C, section II, the safeguards contingency plan, and the licensee's response strategy.

(iii) Notify law enforcement agencies (local, State, and Federal law enforcement agencies (LLEA)), in accordance with site procedures.

(9) *Law enforcement liaison.* To the extent practicable, licensees shall document and maintain current agreements with applicable law enforcement agencies to include estimated response times and capabilities.

(10) *Heightened security.* Licensees shall establish, maintain, and implement a threat warning system which identifies specific graduated protective measures and actions to be taken to increase licensee preparedness against a heightened security threat.

(i) Licensees shall ensure that the specific protective measures and actions identified for each threat level are consistent with the security plans and other emergency plans and procedures.

(ii) Upon notification by an authorized representative of the Commission, licensees shall implement the specific threat level indicated by the Commission representative.

(l) *Facilities using mixed-oxide (MOX) fuel assemblies containing up to 20 weight percent plutonium dioxide (PuO_2).* (1) Commercial nuclear power reactors licensed under 10 CFR parts 50 or 52 and authorized to use special nuclear material in the form of MOX fuel assemblies containing up to 20 weight percent PuO_2 shall, in addition to meeting the requirements of this section, protect un-irradiated MOX fuel assemblies against theft or diversion as described in this paragraph.

(2) Commercial nuclear power reactors authorized to use MOX fuel assemblies containing up to 20 weight percent PuO_2 are exempt from the requirements of §§ 73.20, 73.45, and 73.46 for the onsite physical protection of un-irradiated MOX fuel assemblies.

(3) *Administrative controls.* (i) The licensee shall describe in the security plans the operational and administrative controls to be implemented for the receipt, inspection, movement, storage, and protection of un-irradiated MOX fuel assemblies.

(ii) The licensee shall implement the use of tamper-indicating devices for un-irradiated MOX fuel assembly transport and shall verify their use and integrity before receipt.

(iii) Upon receipt of un-irradiated MOX fuel assemblies, the licensee shall:

(A) Inspect un-irradiated MOX fuel assemblies for damage.

(B) Search un-irradiated MOX fuel assemblies for unauthorized materials.

(iv) The licensee may conduct the required inspection and search functions simultaneously.

(v) The licensee shall ensure the proper placement and control of un-irradiated MOX fuel assemblies as follows:

(A) At least one armed security officer shall be present during the receipt and inspection of un-irradiated MOX fuel assemblies. This armed security officer shall not be an armed responder as required by paragraph (k) of this section.

(B) The licensee shall store un-irradiated MOX fuel assemblies only within a spent fuel pool, located within a vital area, so that access to the un-irradiated MOX fuel assemblies requires passage through at least two physical barriers and the water barrier combined with the additional measures detailed in this section.

(vi) The licensee shall implement a material control and accountability program that includes a predetermined and documented storage location for each un-irradiated MOX fuel assembly.

(4) *Physical controls.* (i) The licensee shall lock, lockout, or disable all equipment and power supplies to equipment required for the movement and handling of un-irradiated MOX fuel assemblies when movement activities are not authorized.

(ii) The licensee shall implement a two-person, line-of-sight rule within the spent fuel pool area whenever control systems or equipment required for the movement or handling of un-irradiated MOX fuel assemblies must be accessed.

(iii) The licensee shall conduct random patrols of areas containing un-irradiated MOX fuel assemblies to identify indications of tampering and ensure the integrity of barriers and locks.

(iv) Locks, keys, and any other access control device used to secure equipment and power sources required for the movement of un-irradiated MOX fuel assemblies, or openings to areas containing un-irradiated MOX fuel assemblies, must be controlled by the security organization.

(v) Removal of locks used to secure equipment and power sources required for the movement of un-irradiated MOX fuel assemblies or openings to areas containing un-irradiated MOX fuel assemblies must require approval by both the on-duty security shift supervisor and the operations shift manager.

(A) At least one armed security officer shall be present to observe activities involving the movement of un-irradiated MOX fuel assemblies before the removal of the locks and providing power to equipment required for the movement or handling of un-irradiated MOX fuel assemblies.

(B) At least one armed security officer shall be present at all times until power is removed from equipment and locks are secured.

(C) Security officers shall be knowledgeable of authorized and unauthorized activities involving un-irradiated MOX fuel assemblies.

(5) At least one armed security officer shall be present and shall maintain constant surveillance of un-irradiated MOX fuel assemblies when the assemblies are not located in the spent fuel pool or reactor.

(6) The licensee shall maintain at all times the capability to detect, assess, interdict and neutralize threats to un-irradiated MOX fuel assemblies in accordance with the requirements of this section.

(7) *MOX fuel assemblies containing greater than 20 weight percent* PuO_2. (i) Requests for the use of MOX fuel assemblies containing greater than 20 weight percent PuO_2 shall be reviewed and approved by the Commission before receipt of MOX fuel assemblies.

(ii) Additional measures for the physical protection of un-irradiated MOX fuel assemblies containing greater than 20 weight percent PuO_2 shall be determined by the Commission on a case-by-case basis and documented through license amendment in accordance with 10 CFR 50.90.

(m) *Security program reviews.* (1) As a minimum the licensee shall review each element of the physical protection program at least every 24 months. Reviews shall be conducted:

(i) Within 12 months following initial implementation of the physical protection program or a change to personnel, procedures, equipment, or facilities that potentially could adversely affect security.

(ii) As necessary based upon site-specific analyses, assessments, or other performance indicators.

(iii) By individuals independent of those personnel responsible for program management and any individual

who has direct responsibility for implementing the onsite physical protection program.

(2) Reviews of the security program must include, but not limited to, an audit of the effectiveness of the physical security program, security plans, implementing procedures, cyber security programs, safety/security interface activities, the testing, maintenance, and calibration program, and response commitments by local, State, and Federal law enforcement authorities.

(3) The results and recommendations of the onsite physical protection program reviews, management's findings regarding program effectiveness, and any actions taken as a result of recommendations from prior program reviews, must be documented in a report to the licensee's plant manager and to corporate management at least one level higher than that having responsibility for day-to-day plant operations. These reports must be maintained in an auditable form and available for inspection.

(4) Findings from onsite physical protection program reviews must be entered into the site corrective action program.

(n) *Maintenance, testing, and calibration.* (1) The licensee shall:

(i) Establish, maintain, and implement a maintenance, testing and calibration program to ensure that security systems and equipment, including secondary and uninterruptible power supplies, are tested for operability and performance at predetermined intervals, maintained in operable condition, and are capable of performing their intended functions.

(ii) Describe the maintenance, testing and calibration program in the physical security plan. Implementing procedures must specify operational and technical details required to perform maintenance, testing, and calibration activities to include, but not limited to, purpose of activity, actions to be taken, acceptance criteria, and the intervals or frequency at which the activity will be performed.

(iii) Identify in procedures the criteria for determining when problems, failures, deficiencies, and other findings are documented in the site corrective action program for resolution.

(iv) Ensure that information documented in the site corrective action program is written in a manner that does not constitute safeguards information as defined in 10 CFR 73.21.

(v) Implement compensatory measures that ensure the effectiveness of the onsite physical protection program when there is a failure or degraded operation of security-related components or equipment.

(2) The licensee shall test each intrusion alarm for operability at the beginning and end of any period that it is used for security, or if the period of continuous use exceeds seven (7) days. The intrusion alarm must be tested at least once every seven (7) days.

(3) Intrusion detection and access control equipment must be performance tested in accordance with the security plans and implementing procedures.

(4) Equipment required for communications onsite must be tested for operability not less frequently than once at the beginning of each security personnel work shift.

(5) Communication systems between the alarm stations and each control room, and between the alarm stations and local law enforcement agencies, to include backup communication equipment, must be tested for operability at least once each day.

(6) Search equipment must be tested for operability at least once each day and tested for performance at least once during each seven (7) day period.

(7) A program for testing or verifying the operability of devices or equipment located in hazardous areas must be specified in the implementing procedures and must define alternate measures to be taken to ensure the timely completion of testing or maintenance when the hazardous condition or other restrictions are no longer applicable.

(8) Security equipment or systems shall be tested in accordance with the site maintenance, testing and calibration procedures before being placed back in service after each repair or inoperable state.

(o) *Compensatory measures.* (1) The licensee shall identify criteria and measures to compensate for degraded or inoperable equipment, systems, and components to meet the requirements of this section.

(2) Compensatory measures must provide a level of protection that is equivalent to the protection that was provided by the degraded or inoperable, equipment, system, or components.

(3) Compensatory measures must be implemented within specific time frames necessary to meet the requirements stated in paragraph (b) of this section and described in the security plans.

(p) *Suspension of security measures.* (1) The licensee may suspend implementation of affected requirements of this section under the following conditions:

(i) In accordance with §§ 50.54(x) and 50.54(y) of this chapter, the licensee may suspend any security measures under this section in an emergency when this action is immediately needed to protect the public health and safety and no action consistent with license conditions and technical specifications that can provide adequate or equivalent protection is immediately apparent. This suspension of security measures must be approved as a minimum by a licensed senior operator before taking this action.

(ii) During severe weather when the suspension of affected security measures is immediately needed to protect the personal health and safety of security force personnel and no other immediately apparent action consistent with the license conditions and technical specifications can provide adequate or equivalent protection. This suspension of security measures must be approved, as a minimum, by a licensed senior operator, with input from the security supervisor or manager, before taking this action.

(2) Suspended security measures must be reinstated as soon as conditions permit.

(3) The suspension of security measures must be reported and documented in accordance with the provisions of § 73.71.

(q) *Records.* (1) The Commission may inspect, copy, retain, and remove all reports, records, and documents required to be kept by Commission regulations, orders, or license conditions, whether the reports, records, and documents are kept by the licensee or a contractor.

(2) The licensee shall maintain all records required to be kept by Commission regulations, orders, or license conditions, until the Commission terminates the license for which the records were developed, and shall maintain superseded portions of these records for at least three (3) years after the record is superseded, unless otherwise specified by the Commission.

(3) If a contracted security force is used to implement the onsite physical protection program, the licensee's written agreement with the contractor must be retained by the licensee as a record for the duration of the contract.

(4) Review and audit reports must be maintained and available for inspection, for a period of three (3) years.

(r) *Alternative measures.* (1) The Commission may authorize an applicant or licensee to provide a measure for protection against radiological sabotage other than one required by this section if the applicant or licensee demonstrates that:

(i) The measure meets the same performance objectives and requirements specified in paragraph (b) of this section; and

(ii) The proposed alternative measure provides protection against radiological sabotage or theft of un-irradiated MOX fuel assemblies, equivalent to that which would be provided by the specific requirement for which it would substitute.

(2) The licensee shall submit proposed alternative measure(s) to the Commission for review and approval in accordance with §§ 50.4 and 50.90 of this chapter before implementation.

(3) In addition to fully describing the desired changes, the licensee shall submit a technical basis for each proposed alternative measure. The basis must include an analysis or assessment that demonstrates how the proposed alternative measure provides a level of protection that is at least equal to that which would otherwise be provided by the specific requirement of this section.

(4) Alternative vehicle barrier systems. In the case of vehicle barrier systems required by § 73.55(e)(10), the licensee shall demonstrate that:

(i) The alternative measure provides protection against the use of a vehicle as a means of transportation to gain proximity to vital areas;

(ii) The alternative measure provides protection against the use of a vehicle as a vehicle bomb; and

(iii) Based on comparison of the costs of the alternative measures to the costs of meeting the Commission's requirements using the essential elements of 10 CFR 50.109, the costs of fully meeting the Commission's requirements are not justified by the protection that would be provided.

[74 FR 13971, Mar. 27, 2009, as amended at 77 FR 39909, July 6, 2012]

§ 73.56 Personnel access authorization requirements for nuclear power plants.

(a) *Introduction.* (1) By March 31, 2010, each nuclear power reactor licensee, licensed under 10 CFR part 50, shall implement the requirements of this section through revisions to its Commission-approved Physical Security Plan.

(2) The licensee shall establish, implement and maintain its access authorization program in accordance with the requirements of this section.

(3) Each applicant for an operating license under the provisions of part 50 of this chapter, and each holder of a combined license under the provisions of part 52 of this chapter, shall implement the requirements of this section before fuel is allowed on site (protected area).

(4) The licensee or applicant may accept, in part or whole, an access authorization program implemented by a contractor or vendor to satisfy appropriate elements of the licensee's access authorization program in accordance with the requirements of this section. Only a licensee shall grant an individual unescorted access. Licensees and applicants shall certify individuals' unescorted access authorization and are responsible to maintain, deny, terminate, or withdraw unescorted access authorization.

(b) *Applicability.* (1) The following individuals shall be subject to an access authorization program:

(i) Any individual to whom a licensee intends to grant unescorted access to nuclear power plant protected or vital areas or any individual for whom a licensee or an applicant intends to certify unescorted access authorization;

(ii) Any individual whose duties and responsibilities permit the individual to take actions by electronic means, either on site or remotely, that could adversely impact the licensee's or applicant's operational safety, security, or emergency preparedness;

(iii) Any individual who has responsibilities for implementing a licensee's or applicant's protective strategy, including, but not limited to, armed security force officers, alarm station operators, and tactical response team leaders; and

(iv) The licensee or applicant access authorization program reviewing official or contractor or vendor access authorization program reviewers.

(2) Other individuals, at the licensee's or applicant's discretion, including employees of a contractor or a vendor who are designated in access authorization program procedures, are subject to an access authorization program that meets the requirements of this section.

(c) *General performance objective.* The licensee's or applicant's access authorization program must provide high assurance that the individuals who are specified in paragraph (b)(1), and, if applicable, paragraph (b)(2) of this section are trustworthy and reliable, such that they do not constitute an unreasonable risk to public health and safety or the common defense and security, including the potential to commit radiological sabotage.

(d) *Background investigation.* In order to grant an individual unescorted access to the protected area or vital area of a nuclear power plant or certify an individual unescorted access authorization, licensees, applicants and contractors or vendors shall ensure that the individual has been subject to a background investigation. The background investigation must include, but is not limited to, the following elements:

(1) *Informed consent.* Licensees, applicants, and contractors or vendors shall

not initiate any element of a background investigation without the informed and signed consent of the subject individual. This consent shall include authorization to share personal information with appropriate entities. The licensee or applicant to whom the individual is applying for unescorted access and unescorted access authorization, respectively, or the contractors or vendors supporting the licensee or applicant shall inform the individual of his or her right to review information collected to assure its accuracy, and provide the individual with an opportunity to correct any inaccurate or incomplete information that is developed by licensees, applicants, or contractors or vendors about the individual.

(i) The subject individual may withdraw his or her consent at any time. Licensees, applicants, and contractors or vendors shall inform the individual that:

(A) Withdrawal of his or her consent will remove the individual's application for access authorization under the licensee's or applicant's access authorization program or contractor or vendor access authorization program; and

(B) Other licensees and applicants shall have access to information documenting the withdrawal. Additionally, the contractors or vendors may have the same access to the information, if such information is necessary for assisting licensees or applicants complying with requirements set forth in this section.

(ii) If an individual withdraws his or her consent, licensees, applicants, and contractors or vendors may not initiate any elements of the background investigation that were not in progress at the time the individual withdrew his or her consent, but shall complete any background investigation elements that are in progress at the time consent is withdrawn. The licensee or applicant shall record the status of the individual's application for unescorted access or unescorted access authorization, respectively. Contractors or vendors may record the status of the individual's application for unescorted access or unescorted access authorization for licensees or applicants. Additionally, licensees, applicants, or contractors or vendors shall collect and maintain the individual's application for unescorted access or unescorted access authorization; his or her withdrawal of consent for the background investigation; the reason given by the individual for the withdrawal; and any pertinent information collected from the background investigation elements that were completed. This information must be shared with other licensees in accordance with paragraph (o)(6) of this section.

(iii) Licensees, applicants, and contractors or vendors shall inform, in writing, any individual who is applying for unescorted access or unescorted access authorization that the following actions are sufficient cause for denial or unfavorable termination of unescorted access or unescorted access authorization status:

(A) Refusal to provide a signed consent for the background investigation;

(B) Refusal to provide, or the falsification of, any personal history information required under this section, including the failure to report any previous denial or unfavorable termination of unescorted access or unescorted access authorization;

(C) Refusal to provide signed consent for the sharing of personal information with other licensees, applicants, or the contractor or vendors under paragraph (d)(4)(v) of this section; or

(D) Failure to report any arrests or legal actions specified in paragraph (g) of this section.

(2) *Personal history disclosure.* (i) Any individual who is applying for unescorted access or unescorted access authorization shall disclose the personal history information that is required by the licensee's or applicant's access authorization program, including any information that may be necessary for the reviewing official to make a determination of the individual's trustworthiness and reliability.

(ii) Licensees, applicants, and contractors or vendors shall not require an individual to disclose an administrative withdrawal of unescorted access or unescorted access authorization under the requirements of § 73.56(g), (h)(7), or (i)(1)(v) of this section. However, the

individual must disclose this information if the individual's unescorted access or unescorted access authorization is administratively withdrawn at the time he or she is seeking unescorted access or unescorted access authorization, or the individual's unescorted access or unescorted access authorization was subsequently denied or terminated unfavorably by a licensee, applicant, or contractor or vendor.

(3) *Verification of true identity*. Licensees, applicants, and contractors or vendors shall verify the true identity of an individual who is applying for unescorted access or unescorted access authorization in order to ensure that the applicant is the person that he or she has claimed to be. At a minimum, licensees, applicants, and contractors or vendors shall validate that the social security number that the individual has provided is his or hers, and, in the case of foreign nationals, validate the claimed non-immigration status that the individual has provided is correct. In addition, licensees and applicants shall also determine whether the results of the fingerprinting required under § 73.57 confirm the individual's claimed identity, if such results are available.

(4) *Employment history evaluation*. Licensees, applicants, and contractors or vendors shall ensure that an employment history evaluation has been completed on a best effort basis, by questioning the individual's present and former employers, and by determining the activities of the individual while unemployed.

(i) For the claimed employment period, the individual must provide the reason for any termination, eligibility for rehire, and other information that could reflect on the individual's trustworthiness and reliability.

(ii) If the claimed employment was military service the individual shall provide a characterization of service, reason for separation, and any disciplinary actions that could affect a trustworthiness and reliability determination.

(iii) If education is claimed in lieu of employment, the individual shall provide any information related to the claimed education that could reflect on the individual's trustworthiness and reliability and, at a minimum, verify that the individual was registered for the classes and received grades that indicate that the individual participated in the educational process during the claimed period.

(iv) If a previous employer, educational institution, or any other entity with which the individual claims to have been engaged fails to provide information or indicates an inability or unwillingness to provide information within 3 business days of the request, the licensee, applicant, or contractor or vendor shall:

(A) Document this refusal or unwillingness in the licensee's, applicant's, or contractor's or vendor's record of the investigation; and

(B) Obtain a confirmation of employment, educational enrollment and attendance, or other form of engagement claimed by the individual from at least one alternate source that has not been previously used.

(v) When any licensee, applicant, contractor, or vendor is seeking the information required for an unescorted access or unescorted access authorization decision under this section and has obtained a signed release from the subject individual authorizing the disclosure of such information, other licensees, applicants, contractors and vendors shall make available the personal or access authorization information requested regarding the denial or unfavorable termination of unescorted access or unescorted access authorization.

(vi) In conducting an employment history evaluation, the licensee, applicant, contractor, or vendor may obtain information and documents by electronic means, including, but not limited to, telephone, facsimile, or e-mail. Licensees, applicants, contractors, or vendors shall make a record of the contents of the telephone call and shall retain that record, and any documents or electronic files obtained electronically, in accordance with paragraph (o) of this section.

(5) *Credit history evaluation*. Licensees, applicants, contractors and vendors shall ensure that the full credit history of any individual who is applying for unescorted access or unescorted access authorization is evaluated. A

full credit history evaluation must include, but is not limited to, an inquiry to detect potential fraud or misuse of social security numbers or other financial identifiers, and a review and evaluation of all of the information that is provided by a national credit-reporting agency about the individual's credit history. For individuals including foreign nationals and United States citizens who have resided outside the United States and do not have established credit history that covers at least the most recent seven years in the United States, the licensee, applicant, contractor or vendor must document all attempts to obtain information regarding the individual's credit history and financial responsibility from some relevant entity located in that other country or countries.

(6) *Character and reputation evaluation*. Licensees, applicants, contractors, and vendors shall ascertain the character and reputation of an individual who has applied for unescorted access or unescorted access authorization by conducting reference checks. Reference checks may not be conducted with any person who is known to be a close member of the individual's family, including but not limited to, the individual's spouse, parents, siblings, or children, or any individual who resides in the individual's permanent household. The reference checks must focus on the individual's reputation for trustworthiness and reliability.

(7) *Criminal history review*. The licensee's or applicant's reviewing official shall evaluate the entire criminal history record of an individual who is applying for unescorted access or unescorted access authorization to determine whether the individual has a record of criminal activity that may adversely impact his or her trustworthiness and reliability. A criminal history record must be obtained in accordance with the requirements of § 73.57. For individuals who do not have or are not expected to have unescorted access, a criminal history record of the individual shall be obtained in accordance with the requirements set forth in paragraph (k)(1)(ii) of this section.

(e) *Psychological assessment*. In order to assist in determining an individual's trustworthiness and reliability, licensees, applicants, contractors or vendors shall ensure that a psychological assessment has been completed before the individual is granted unescorted access or certified unescorted access authorization. Individuals who are applying for initial unescorted access or unescorted access authorization, or who have not maintained unescorted access or unescorted access authorization for greater than 365 days, shall be subject to a psychological assessment. The psychological assessment must be designed to evaluate the possible adverse impact of any noted psychological characteristics on the individual's trustworthiness and reliability.

(1) A licensed psychologist or psychiatrist with the appropriate training and experience shall conduct the psychological assessment.

(2) The psychological assessment must be conducted in accordance with the applicable ethical principles for conducting such assessments established by the American Psychological Association or American Psychiatric Association.

(3) At a minimum, the psychological assessment must include the administration and interpretation of a standardized, objective, professionally-accepted psychological test that provides information to identify indications of disturbances in personality or psychopathology that may have adverse implications for an individual's trustworthiness and reliability. A psychiatrist or psychologist specified in paragraph (e) of this section shall establish the predetermined thresholds for each scale, in accordance with paragraph (e)(2) of this section, that must be applied in interpreting the results of the psychological test to determine whether an individual must be interviewed by a licensed psychiatrist or psychologist, under § 73.56(e)(4)(i) of this section.

(4) The psychological assessment must include a clinical interview:

(i) If an individual's scores on the psychological test in paragraph (e)(3) of this section identify indications of disturbances in personality or psychopathology that may have implications for an individual's trustworthiness and reliability; or

(ii) If the individual is a member of the population that performs one or

more job functions that are critical to the safe and secure operation of the licensee's facility, as defined in paragraph (i)(1)(v)(B) of this section.

(5) In the course of conducting a psychological assessment for those individuals who are specified in paragraph (h) of this section for initial unescorted access or unescorted access authorization category, if the licensed psychologist or psychiatrist identifies or discovers any information, including a medical condition, that could adversely impact the individual's fitness for duty or trustworthiness and reliability, the licensee, applicant, or contractor or vendor shall ensure that the psychologist or psychiatrist contact appropriate medical personnel to obtain further information as need for a determination. The results of the evaluation and a recommendation shall be provided to the licensee's or applicant's reviewing official.

(6) During psychological reassessments, if the licensed psychologist or psychiatrist identifies or discovers any information, including a medical condition, that could adversely impact the fitness for duty or trustworthiness and reliability of those individuals who are currently granted unescorted access or certified unescorted access authorization status, he or she shall inform (1) the reviewing official of the discovery within 24 hours of the discovery and (2) the medical personnel designated in the site implementing procedures, who shall ensure that an appropriate evaluation of the possible medical condition is conducted under the requirements of part 26 of this chapter. The results of the evaluation and a recommendation shall be provided to the licensee's or applicant's reviewing official.

(f) *Behavioral observation*. (1) Licensee and applicant access authorization programs must include a behavioral observation program that is designed to detect behaviors or activities that may constitute an unreasonable risk to the health and safety of the public and common defense and security, including a potential threat to commit radiological sabotage. Licensees, applicants and contractors or vendors must ensure that the individuals specified in paragraph (b)(1) and, if applicable, (b)(2) of this section are subject to behavioral observation.

(2) Each person subject to the behavior observation program shall be responsible for communicating to the licensee or applicant observed behaviors of individuals subject to the requirements of this section. Such behaviors include any behavior of individuals that may adversely affect the safety or security of the licensee's facility or that may constitute an unreasonable risk to the public health and safety or the common defense and security, including a potential threat to commit radiological sabotage.

(i) Licensees, applicants, and contractors or vendors shall ensure that individuals who are subject to this section also successfully complete initial behavioral observation training and requalification behavior observation training as required in paragraphs (f)(2)(ii) and (iii) of this section.

(ii) Behavioral observation training must be:

(A) Completed before the licensee grants unescorted access or certifies unescorted access authorization or an applicant certifies unescorted access authorization, as defined in paragraph (h)(4)(ii) of this section,

(B) Current before the licensee grants unescorted access update or reinstatement or licensee or applicant certifies unescorted access authorization reinstatement as defined in paragraph (h)(4)(ii) of this section, and

(C) Maintained in a current status during any period of time an individual possesses unescorted access or unescorted access authorization in accordance with paragraph (f)(2)(iv) of this section.

(iii) For initial behavioral observation training, individuals shall demonstrate completion by passing a comprehensive examination that addresses the knowledge and abilities necessary to detect behavior or activities that have the potential to constitute an unreasonable risk to the health and safety of the public and common defense and security, including a potential threat to commit radiological sabotage. Remedial training and re-testing are required for individuals who fail to satisfactorily complete the examination.

(iv) Individuals shall complete refresher training on a nominal 12-month frequency, or more frequently where the need is indicated. Individuals may take and pass a comprehensive examination that meets the requirements of paragraph (f)(2)(iii) of this section in lieu of completing annual refresher training.

(v) Initial and refresher training may be delivered using a variety of media, including, but not limited to, classroom lectures, required reading, video, or computer-based training systems. The licensee, applicant, or contractor or vendor shall monitor the completion of training.

(3) Individuals who are subject to an access authorization program under this section shall at a minimum, report any concerns arising from behavioral observation, including, but not limited to, concerns related to any questionable behavior patterns or activities of others to the reviewing official, his or her supervisor, or other management personnel designated in their site procedures. The recipient of the report shall, if other than the reviewing official, promptly convey the report to the reviewing official, who shall reassess the reported individual's unescorted access or unescorted access authorization status. The reviewing official shall determine the elements of the reassessment based on the accumulated information of the individual. If the reviewing official has a reason to believe that the reported individual's trustworthiness or reliability is questionable, the reviewing official shall either administratively withdraw or terminate the individual's unescorted access or unescorted access authorization while completing the re-evaluation or investigation. If the reviewing official determines from the information provided that there is cause for additional action, the reviewing official may inform the supervisor of the reported individual.

(g) *Self-reporting of legal actions.* (1) Any individual who has applied for unescorted access or unescorted access authorization or is maintaining unescorted access or unescorted access authorization under this section shall promptly report to the reviewing official, his or her supervisor, or other management personnel designated in site procedures any legal action(s) taken by a law enforcement authority or court of law to which the individual has been subject that could result in incarceration or a court order or that requires a court appearance, including but not limited to an arrest, an indictment, the filing of charges, or a conviction, but excluding minor civil actions or misdemeanors such as parking violations or speeding tickets. The recipient of the report shall, if other than the reviewing official, promptly convey the report to the reviewing official. On the day that the report is received, the reviewing official shall evaluate the circumstances related to the reported legal action(s) and re-determine the reported individual's unescorted access or unescorted access authorization status.

(2) The licensee or applicant shall inform the individual of this obligation, in writing, prior to granting unescorted access or certifying unescorted access authorization.

(h) *Granting unescorted access and certifying unescorted access authorization.* Licensees and applicants shall implement the requirements of this paragraph for granting or certifying initial or reinstated unescorted access or unescorted access authorization. The investigatory information collected to satisfy the requirements of this section for individuals who are being considered for unescorted access or unescorted access authorization shall be valid for a trustworthiness and reliability determination by a licensee or applicant for 30 calendar days.

(1) *Determination basis.* (i) The licensee's or applicant's reviewing official shall determine whether to grant, certify, deny, unfavorably terminate, maintain, or administratively withdraw an individual's unescorted access or unescorted access authorization status, based on an evaluation of all of the information required by this section.

(ii) The licensee's or applicant's reviewing official may not grant unescorted access or certify unescorted access authorization status to an individual until all of the information required by this section has been evaluated by the reviewing official and the reviewing official has determined that

the accumulated information supports a determination of the individual's trustworthiness and reliability. However, the reviewing official may deny or terminate unescorted access or unescorted access authorization of any individual based on disqualifying information even if not all the information required by this section has been collected or evaluated.

(2) *Unescorted access for NRC-certified personnel.* Licensees and applicants shall grant unescorted access to any individual who has been certified by the Nuclear Regulatory Commission as suitable for such access.

(3) *Access denial.* Licensees or applicants may not permit an individual, who is identified as having an access-denied status by another licensee subject to this section, or has an access authorization status other than favorably terminated, to enter any nuclear power plant protected area or vital area, under escort or otherwise, or take actions by electronic means that could adversely impact the licensee's or applicant's safety, security, or emergency response or their facilities, under supervision or otherwise, except upon completion of the initial unescorted access authorization process.

(4) *Granting unescorted access and certifying unescorted access authorization*—(i) *Initial unescorted access or unescorted access authorization.* In satisfying the requirements of paragraph (h)(1) of this section, for individuals who have never held unescorted access or unescorted access authorization status or whose unescorted access or unescorted access authorization status has been interrupted for a period of 3 years or more, the licensee, applicant, or contractor or vendor shall satisfy the requirements of paragraphs (d), (e), (f), and (g) of this section. In meeting requirements set forth in paragraph (d)(4) of this section, the licensee, applicant, or contractor or vendor shall evaluate the 3 years before the date on which the application for unescorted access was submitted, or since the individual's eighteenth birthday, whichever is shorter. For the 1-year period preceding the date upon which the individual applies for unescorted access or unescorted access authorization, the licensee, applicant or contractor or vendor shall ensure that the employment history evaluation is conducted with every employer, regardless of the length of employment. For the remaining 2-year period, the licensee, applicant, or contractor or vendor shall ensure that the employment history evaluation is conducted with the employer by whom the individual claims to have been employed the longest within each calendar month.

(ii) *Interruption of unescorted access or unescorted access authorization.* In satisfying the requirements of paragraph (h)(1) of this section, for individuals who have previously been granted unescorted access or unescorted access authorization, but whose access had been terminated under favorable conditions, licensees, applicants or contractors or vendors shall satisfy the requirements of paragraphs (d), (e), (f), and (g) of this section, with consideration of the specific requirements for periods of interruption described below in paragraphs (h)(4)(ii)(A) or (h)(4)(ii)(B) of this section, as applicable. However, for individuals whose unescorted access or unescorted access authorization was interrupted for less than or equal to 30 calendar days, licensees, applicants, or contractors or vendors must only satisfy the requirements set forth in paragraphs (d)(1), (d)(2), and (d)(3) of this section. The applicable periods of interruption are determined by the number of calendar days between the day after the individual's access was terminated and the day upon which the individual applies for unescorted access or unescorted access authorization.

(A) *Update of unescorted access or unescorted access authorization.* For individuals whose last unescorted access or unescorted access authorization status has been interrupted for more than 30 calendar days but less than or equal to 365 calendar days, the licensee, applicant or contractor or vendor shall complete the individual's employment history evaluation in accordance with the requirements of paragraph (d)(4) of this section, within 5 business days after reinstatement. The licensee, applicant, or contractor or vendor shall ensure that the employment history evaluation has been conducted with the employer by whom the individual

claims to have been employed the longest within the calendar month. However, if the employment history evaluation is not completed within 5 business days of reinstatement due to circumstances that are outside of the licensee's, applicant's, or contractor's or vendor's control and the licensee or applicant, contractor or vendor is not aware of any potentially disqualifying information regarding the individual within the past 5 years, the licensee may extend the individual's unescorted access an additional 5 business days. If the employment history evaluation is not completed within this extended 5 business days, the licensee shall administratively withdraw unescorted access and complete the employment history evaluation in accordance with § 73.56(d)(4) of this section. For re-certification of unescorted access authorization, prior to re-certification of unescorted access authorization status of an individual, the licensee or applicant shall complete all the elements stated above including drug screening and employment evaluation.

(B) *Reinstatement of unescorted access or unescorted access authorization*. For individuals whose last unescorted access or unescorted access authorization status has been interrupted for greater than 365 calendar days but fewer than 3 years the licensee, applicant or contractor or vendor shall evaluate the period of time since the individual last held unescorted access or unescorted access authorization status, up to and including the day the individual applies for re-instated unescorted access authorization. For the 1-year period preceding the date upon which the individual applies for unescorted access authorization, the licensee, applicant, or contractor or vendor shall ensure that the employment history evaluation is conducted with every employer, regardless of the length of employment. For the remaining period, the licensee, applicant or contractor or vendor shall ensure that the employment history evaluation is conducted with the employer by whom the individual claims to have been employed the longest within each calendar month. In addition, the individual shall be subject to the psychological assessment required in § 73.56(e).

(5) *Accepting unescorted access authorization from other access authorization programs*. Licensees who are seeking to grant unescorted access or certify unescorted access authorization or applicants who are seeking to certify unescorted access authorization to an individual who is subject to another access authorization program or another access authorization program that complies with this section may rely on those access authorization programs or access authorization program elements to comply with the requirements of this section. However, the licensee who is seeking to grant unescorted access or the licensee or applicant who is seeking to certify unescorted access authorization shall ensure that the program elements to be accepted have been maintained consistent with the requirements of this section by the other access authorization program.

(6) *Information sharing*. To meet the requirements of this section, licensees, applicants, and contractors or vendors may rely upon the information that other licensees, applicants, and contractors or vendors who are also subject to this section, have gathered about individuals who have previously applied for unescorted access or unescorted access authorization, and developed about individuals during periods in which the individuals maintained unescorted access or unescorted access authorization status.

(i) Maintaining unescorted access or unescorted access authorization.

(1) Individuals may maintain unescorted access or unescorted access authorization status under the following conditions:

(i) The individual remains subject to a behavioral observation program that complies with the requirements of § 73.56(f) of this section.

(ii) The individual successfully completes behavioral observation refresher training or testing on the nominal 12-month frequency required in § 73.56(f)(2)(ii) of this section.

(iii) The individual complies with the licensee's or applicant's access authorization program policies and procedures to which he or she is subject, including the self-reporting of legal actions responsibility specified in paragraph (g) of this section.

(iv) The individual is subject to an annual (within 365 calendar days) supervisory review conducted in accordance with the requirements of the licensee's or applicant's behavioral observation program. The individual shall be subject to a supervisory interview in accordance with the requirements of the licensee's or applicant's behavioral observation program, if the supervisor does not have the frequent interaction with the individual throughout the review period needed to form an informed and reasonable opinion regarding the individual's behavior, trustworthiness, and reliability.

(v) The licensee's or applicant's reviewing official determines that the individual continues to be trustworthy and reliable. This determination must, at a minimum, be based on the following:

(A) A criminal history update and credit history re-evaluation for any individual with unescorted access. The criminal history update and credit history re-evaluation must be completed within 5 years of the date on which these elements were last completed.

(B) For individuals who perform one or more of the job functions described in this paragraph, the trustworthiness and reliability determination must be based on a criminal history update and credit history re-evaluation within three years of the date on which these elements were last completed, or more frequently, based on job assignment as determined by the licensee or applicant, and a psychological re-assessment within 5 years of the date on which this element was last completed:

(*1*) Individuals who have extensive knowledge of defensive strategies and design and/or implementation of the plant's defense strategies, including—

(*i*) Site security supervisors;

(*ii*) Site security managers;

(*iii*) Security training instructors; and

(*iv*) Corporate security managers;

(*2*) Individuals in a position to grant an applicant unescorted access or unescorted access authorization, including site access authorization managers;

(*3*) Individuals assigned a duty to search for contraband or other items that could be used to commit radiological sabotage (*i.e.*, weapons, explosives, incendiary devices);

(*4*) Individuals who have access, extensive knowledge, or administrative control over plant digital computer and communication systems and networks as identified in §73.54, including—

(*i*) Plant network systems administrators;

(*ii*) IT personnel who are responsible for securing plant networks; or

(*5*) Individuals qualified for and assigned duties as: armed security officers, armed responders, alarm station operators, response team leaders, and armorers as defined in the licensee's or applicant's Physical Security Plan; and reactor operators, senior reactor operators and non-licensed operators. Non-licensed operators include those individuals responsible for the operation of plant systems and components, as directed by a reactor operator or senior reactor operator. A non-licensed operator also includes individuals who monitor plant instrumentation and equipment and principally perform their duties outside of the control room.

(C) The criminal history update and the credit history re-evaluation shall be completed within 30 calendar days of each other.

(vi) If the criminal history update, credit history re-evaluation, psychological re-assessment, if required, and supervisory review and interview, if applicable, have not been completed and the information evaluated by the reviewing official within the time frame specified under paragraph (v) of this section, the licensee or applicant shall administratively withdraw the individual's unescorted access or unescorted access authorization until these requirements have been met.

(2) If an individual who has unescorted access or unescorted access authorization status is not subject to an access authorization program that meets the requirements of this part for more than 30 continuous days, then the licensee or applicant shall terminate the individual's unescorted access or unescorted access authorization status

and the individual shall meet the requirements in this section, as applicable, to regain unescorted access or unescorted access authorization.

(j) *Access to vital areas.* Licensees or applicants shall establish, implement, and maintain a list of individuals who are authorized to have unescorted access to specific nuclear power plant vital areas during non-emergency conditions. The list must include only those individuals who have a continued need for access to those specific vital areas in order to perform their duties and responsibilities. The list must be approved by a cognizant licensee or applicant manager or supervisor who is responsible for directing the work activities of the individual who is granted unescorted access to each vital area, and updated and re-approved no less frequently than every 31 days.

(k) *Trustworthiness and reliability of background screeners and access authorization program personnel.* Licensees, applicants, and contractors or vendors shall ensure that any individual who collects, processes, or has access to personal information that is used to make unescorted access or unescorted access authorization determinations under this section has been determined to be trustworthy and reliable.

(1) *Background screeners.* Licensees, applicants, and contractors or vendors who rely on individuals who are not directly under their control to collect and process information that will be used by a reviewing official to make unescorted access or unescorted access authorization determinations shall ensure that a trustworthiness and reliability evaluation of such individuals has been completed to support a determination that such individuals are trustworthy and reliable. At a minimum, the following checks are required:

(i) Verify the individual's true identity as specified in paragraph (d)(3) of this section;

(ii) A local criminal history review and evaluation based on information obtained from an appropriate State or local court or agency in which the individual resided;

(iii) A credit history review and evaluation;

(iv) An employment history review and evaluation covering the past 3 years; and

(v) An evaluation of character and reputation.

(2) *Access authorization program personnel.* Licensees, applicants, and contractors or vendors shall ensure that any individual who evaluates personal information for the purpose of processing applications for unescorted access or unescorted access authorization, including but not limited to a psychologist or psychiatrist who conducts psychological assessments under § 73.56(e), has access to the files, records, and personal information associated with individuals who have applied for unescorted access or unescorted access authorization, or is responsible for managing any databases that contain such files, records, and personal information has been determined to be trustworthy and reliable, as follows:

(i) The individual is subject to an access authorization program that meets the requirements of this section; or

(ii) The licensee, applicant, and contractor or vendor determines that the individual is trustworthy and reliable based upon an evaluation that meets the requirements of § 73.56(d)(1) through (d)(6) and (e) and either a local criminal history review and evaluation as specified in § 73.56(k)(1)(ii) or a criminal history check that meets the requirements of § 73.56(d)(7).

(l) *Review procedures.* Each licensee and applicant shall include a procedure for the notification of individuals who are denied unescorted access, unescorted access authorization, or who are unfavorably terminated. Additionally, procedures must include provisions for the review, at the request of the affected individual, of a denial or unfavorable termination of unescorted access or unescorted access authorization that may adversely affect employment. The procedure must contain a provision to ensure the individual is informed of the grounds for the denial or unfavorable termination and allow the individual an opportunity to provide additional relevant information and an opportunity for an objective review of the information upon which the denial or unfavorable termination of

unescorted access or unescorted access authorization was based. The procedure must provide for an impartial and independent internal management review. Licensees and applicants shall not grant unescorted access or certify unescorted access authorization, or permit the individual to maintain unescorted access or unescorted access authorization during the review process.

(m) *Protection of information.* Each licensee, applicant, contractor, or vendor shall establish and maintain a system of files and procedures to ensure personal information is not disclosed to unauthorized persons.

(1) Licensees, applicants and contractors or vendors shall obtain signed consent from the subject individual that authorizes the disclosure of any information collected and maintained under this section before disclosing the information, except for disclosures to the following individuals:

(i) The subject individual or his or her representative, when the individual has designated the representative in writing for specified unescorted access authorization matters;

(ii) NRC representatives;

(iii) Appropriate law enforcement officials under court order;

(iv) A licensee's, applicant's, or contractor's or vendor's representatives who have a need to have access to the information in performing assigned duties, including determinations of trustworthiness and reliability and audits of access authorization programs;

(v) The presiding officer in a judicial or administrative proceeding that is initiated by the subject individual;

(vi) Persons deciding matters under the review procedures in paragraph (k) of this section; or

(vii) Other persons pursuant to court order.

(2) All information pertaining to a denial or unfavorable termination of the individual's unescorted access or unescorted access authorization shall be promptly provided, upon receipt of a written request by the subject individual or his or her designated representative as designated in writing. The licensee or applicant may redact the information to be released to the extent that personal privacy information, including the name of the source of the information is withheld.

(3) A contract with any individual or organization who collects and maintains personal information that is relevant to an unescorted access or unescorted access authorization determination must require that such records be held in confidence, except as provided in paragraphs (m)(1) through (m)(2) of this section.

(4) Licensees, applicants, or contractors or vendors and any individual or organization who collects and maintains personal information on behalf of a licensee, applicant, or contractor or vendor, shall establish, implement, and maintain a system and procedures for the secure storage and handling of the information collected.

(n) *Audits and corrective action.* Each licensee and applicant shall be responsible for the continuing effectiveness of the access authorization program, including access authorization program elements that are provided by the contractors or vendors, and the access authorization programs of any of the contractors or vendors that are accepted by the licensee or applicant. Each licensee, applicant, and contractor or vendor shall ensure that access authorization programs and program elements are audited to confirm compliance with the requirements of this section and those comprehensive actions are taken to correct any non-conformance that is identified.

(1) Each licensee and applicant shall ensure that its entire access authorization program is audited nominally every 24 months. Licensees, applicants and contractors or vendors are responsible for determining the appropriate frequency, scope, and depth of additional auditing activities within the nominal 24-month period based on the review of program performance indicators, such as the frequency, nature, and severity of discovered problems, personnel or procedural changes, and previous audit findings.

(2) Access authorization program services that are provided to a licensee or applicant by contractor or vendor personnel who are off site or are not under the direct daily supervision or observation of the licensee's or applicant's personnel must be audited by

the licensee or applicant on a nominal 12-month frequency. In addition, any access authorization program services that are provided to contractors or vendors by subcontractor personnel who are off site or are not under the direct daily supervision or observation of the contractor's or vendor's personnel must be audited by the licensee or applicant on a nominal 12-month frequency.

(3) Licensee's and applicant's contracts with contractors or vendors must reserve the licensee's or applicant's right to audit the contractors or vendors and the contractor's or vendor's subcontractors providing access authorization program services at any time, including at unannounced times, as well as to review all information and documentation that is reasonably relevant to the performance of the program.

(4) Licensee's and applicant's contracts with the contractors or vendors, and contractors' or vendors' contracts with subcontractors, must also require that the licensee or applicant shall be provided access to and be permitted to take away copies of any documents or data that may be needed to assure that the contractor or vendor and its subcontractors are performing their functions properly and that staff and procedures meet applicable requirements.

(5) Audits must focus on the effectiveness of the access authorization program or program element(s), as appropriate. At least one member of the licensee or applicant audit team shall be a person who is knowledgeable of and practiced with meeting the performance objectives and requirements of the access authorization program or program elements being audited. The individuals performing the audit of the access authorization program or program element(s) shall be independent from both the subject access authorization programs' management and from personnel who are directly responsible for implementing the access authorization program or program elements being audited.

(6) The results of the audits, along with any recommendations, must be documented in the site corrective action program in accordance with § 73.55(b)(10) and reported to senior management having responsibility in the area audited and to management responsible for the access authorization program. Each audit report must identify conditions that are adverse to the proper performance of the access authorization program, the cause of the condition(s), and, when appropriate, recommended corrective actions, and corrective actions taken. The licensee, applicant, or contractor or vendor shall review the audit findings and take any additional corrective actions, to include re-auditing of the deficient areas where indicated, to preclude repetition of the condition.

(7) Licensees and applicants may jointly conduct audits, or may accept audits of the contractors or vendors that were conducted by other licensees and applicants who are subject to this section, if the audit addresses the services obtained from the contractor or vendor by each of the sharing licensees and applicants. The contractors or vendors may jointly conduct audits, or may accept audits of its subcontractors that were conducted by other licensees, applicants, or contractors or vendors who are subject to this section, if the audit addresses the services obtained from the subcontractor by each of the sharing licensees, applicants, and the contractors or vendors.

(i) Licensees, applicants, and contractors or vendors shall review audit records and reports to identify any areas that were not covered by the shared or accepted audit and ensure that authorization program elements and services upon which the licensee, applicant, or contractor or vendor relies are audited, if the program elements and services were not addressed in the shared audit.

(ii) Sharing licensees and applicants need not re-audit the same contractor or vendor for the same time. Sharing contractors or vendors need not re-audit the same subcontractor for the same time.

(iii) Sharing licensees, applicants, and contractors or vendors shall maintain a copy of the shared audits, including findings, recommendations, and corrective actions.

(o) *Records.* Licensee, applicants, and contractors or vendors shall maintain the records that are required by the

regulations in this section for the period specified by the appropriate regulation. If a retention period is not otherwise specified, these records must be retained until the Commission terminates the facility's license, certificate, or other regulatory approval.

(1) Records may be stored and archived electronically, provided that the method used to create the electronic records meets the following criteria:

(i) Provides an accurate representation of the original records;

(ii) Prevents unauthorized access to the records;

(iii) Prevents the alteration of any archived information and/or data once it has been committed to storage; and

(iv) Permits easy retrieval and recreation of the original records.

(2) Licensees and applicants who are subject to this section shall retain the following records:

(i) Records of the information that must be collected under paragraphs (d) and (e) of this section that results in the granting of unescorted access or certifying of unescorted access authorization for at least 5 years after the licensee or applicant terminates or denies an individual's unescorted access or unescorted access authorization or until the completion of all related legal proceedings, whichever is later;

(ii) Records pertaining to denial or unfavorable termination of unescorted access or unescorted access authorization and related management actions for at least 5 years after the licensee or applicant terminates or denies an individual's unescorted access or unescorted access authorization or until the completion of all related legal proceedings, whichever is later; and

(iii) Documentation of the granting and termination of unescorted access or unescorted access authorization for at least 5 years after the licensee or applicant terminates or denies an individual's unescorted access or unescorted access authorization or until the completion of all related legal proceedings, whichever is later. Contractors or vendors may maintain the records that are or were pertinent to granting, certifying, denying, or terminating unescorted access or unescorted access authorization that they collected for licensees or applicants. If the contractors or vendors maintain the records on behalf of a licensee or an applicant, they shall follow the record retention requirement specified in this section. Upon termination of a contract between the contractor and vendor and a licensee or applicant, the contractor or vendor shall provide the licensee or applicant with all records collected for the licensee or applicant under this chapter.

(3) Licensees, applicants, and contractors or vendors shall retain the following records for at least 3 years or until the completion of all related proceedings, whichever is later:

(i) Records of behavioral observation training conducted under paragraph (f)(2) of this section; and

(ii) Records of audits, audit findings, and corrective actions taken under paragraph (n) of this section.

(4) Licensees, applicants, and contractors or vendors shall retain written agreements for the provision of services under this section, for three years after termination or completion of the agreement, or until completion of all proceedings related to a denial or unfavorable termination of unescorted access or unescorted access authorization that involved those services, whichever is later.

(5) Licensees, applicants, and contractors or vendors shall retain records of the background investigations, psychological assessments, supervisory reviews, and behavior observation program actions related to access authorization program personnel, conducted under paragraphs (d) and (e) of this section, for the length of the individual's employment by or contractual relationship with the licensee, applicant, or the contractor or vendor and three years after the termination of employment, or until the completion of any proceedings relating to the actions of such access authorization program personnel, whichever is later.

(6) Licensees, applicants, and the contractors or vendors who have been authorized to add or manipulate data that is shared with licensees subject to this section shall ensure that data linked to the information about individuals who have applied for

unescorted access or unescorted access authorization, which is specified in the licensee's or applicant's access authorization program documents, is retained.

(i) If the shared information used for determining individual's trustworthiness and reliability changes or new or additional information is developed about the individual, the licensees, applicants, and the contractors or vendors that acquire this information shall correct or augment the data and ensure it is shared with licensees subject to this section. If the changed, additional or developed information has implications for adversely affecting an individual's trustworthiness and reliability, the licensee, applicant, or the contractor or vendor who discovered or obtained the new, additional or changed information, shall, on the day of discovery, inform the reviewing official of any licensee or applicant access authorization program under which the individual is maintaining his or her unescorted access or unescorted access authorization status of the updated information.

(ii) The reviewing official shall evaluate the shared information and take appropriate actions, which may include denial or unfavorable termination of the individual's unescorted access authorization. If the notification of change or updated information cannot be made through usual methods, licensees, applicants, and the contractors or vendors shall take manual actions to ensure that the information is shared as soon as reasonably possible. Records maintained in any database(s) must be available for NRC review.

(7) If a licensee or applicant administratively withdraws an individual's unescorted access or unescorted access authorization status caused by a delay in completing any portion of the background investigation or for a licensee or applicant initiated evaluation, or reevaluation that is not under the individual's control, the licensee or applicant shall record this administrative action to withdraw the individual's unescorted access or unescorted access authorization with other licensees subject to this section. However, licensees and applicants shall not document this administrative withdrawal as denial or unfavorable termination and shall not respond to a suitable inquiry conducted under the provisions of 10 CFR parts 26, a background investigation conducted under the provisions of this section, or any other inquiry or investigation as denial nor unfavorable termination. Upon favorable completion of the background investigation element that caused the administrative withdrawal, the licensee or applicant shall immediately ensure that any matter that could link the individual to the administrative action is eliminated from the subject individual's access authorization or personnel record and other records, except if a review of the information obtained or developed causes the reviewing official to unfavorably terminate or deny the individual's unescorted access.

[74 FR 13979, Mar. 27, 2009, as amended at 77 FR 39909, July 6, 2012, 81 FR 86910, Dec. 2, 2016]

§ 73.57 Requirements for criminal history records checks of individuals granted unescorted access to a nuclear power facility, a non-power reactor, or access to Safeguards Information.

(a) *General.* (1) Each licensee who is authorized to engage in an activity subject to regulation by the Commission shall comply with the requirements of this section.

(2) Each applicant for a license to engage in an activity subject to regulation by the Commission, as well as each entity who has provided written notice to the Commission of intent to file an application for licensing, certification, permitting, or approval of a product subject to regulation by the Commission shall submit fingerprints for those individuals who will have access to Safeguards Information.

(3) Before receiving its operating license under 10 CFR part 50 or before the Commission makes its finding under § 52.103(g) of this chapter, each applicant for a license to operate a nuclear power reactor (including an applicant for a combined license) or a non-power reactor may submit fingerprints for those individuals who will require unescorted access to the nuclear power facility or non-power reactor facility.

(b) *General performance objective and requirements.* (1) Except those listed in paragraph (b)(2) of this section, each licensee subject to the provisions of this section shall fingerprint each individual who is permitted unescorted access to the nuclear power facility, the non-power reactor facility in accordance with paragraph (g) of this section, or access to Safeguards Information. The licensee will then review and use the information received from the Federal Bureau of Investigation (FBI) and, based on the provisions contained in this section, determine either to continue to grant or to deny further unescorted access to the nuclear power facility, the non-power reactor facility, or access to Safeguards Information for that individual. Individuals who do not have unescorted access or access to Safeguards Information shall be fingerprinted by the licensee and the results of the criminal history records check shall be used before making a determination for granting unescorted access to the nuclear power facility, non-power reactor facility, or to Safeguards Information.

(2) Licensees need not fingerprint in accordance with the requirements of this section for the following categories:

(i) For unescorted access to the nuclear power facility or the non-power reactor facility (but must adhere to provisions contained in §§ 73.21 and 73.22): NRC employees and NRC contractors on official agency business; individuals responding to a site emergency in accordance with the provisions of § 73.55(a); offsite emergency response personnel who are responding to an emergency at a non-power reactor facility; a representative of the International Atomic Energy Agency (IAEA) engaged in activities associated with the U.S./IAEA Safeguards Agreement at designated facilities who has been certified by the NRC; law enforcement personnel acting in an official capacity; Federal, State or local government employees who have had equivalent reviews of FBI criminal history data; and individuals employed at a facility who possess ''Q'' or ''L'' clearances or possess another active government granted security clearance (*i.e.*, Top Secret, Secret, or Confidential);

(ii) For access to Safeguards Information only but must adhere to provisions contained in §§ 73.21, 73.22, and 73.23: the categories of individuals specified in 10 CFR 73.59.

(iii) Any licensee currently processing criminal history requests through the FBI pursuant to Executive Order 13467, as amended by Executive Order 13764, need not also submit such requests to the NRC under this section; and

(iv) Upon further notice to licensees and without further rulemaking, the Commission may waive certain requirements of this section on a temporary basis.

(v) Individuals who have a valid unescorted access authorization to a non-power reactor facility on November 7, 2012 are not required to undergo a new fingerprint-based criminal history records check pursuant to paragraph (g) of this section, until such time that the existing authorization expires, is terminated, or is otherwise to be renewed.

(3) The licensee shall notify each affected individual that the fingerprints will be used to secure a review of his/her criminal history record, and inform the individual of proper procedures for revising the record or including explanation in the record.

(4) Fingerprinting is not required if the licensee is reinstating the unescorted access to the nuclear power facility, the non-power reactor facility, or access to Safeguards Information granted an individual if:

(i) The individual returns to the same nuclear power utility or non-power reactor facility that granted access and such access has not been interrupted for a continuous period of more than 365 days; and

(ii) The previous access was terminated under favorable conditions.

(5) Fingerprints need not be taken, in the discretion of the licensee, if an individual who is an employee of a licensee, contractor, manufacturer, or supplier has been granted unescorted access to a nuclear power facility, a non-power reactor facility, or to Safeguards Information by another licensee, based in part on a criminal history records check under this section. The criminal history records check file

may be transferred to the gaining licensee in accordance with the provisions of paragraph (f)(3) of this section.

(6) All fingerprints obtained by the licensee under this section must be submitted to the Attorney General of the United States through the Commission.

(7) The licensee shall review the information received from the Attorney General and consider it in making a determination for granting unescorted access to the individual or access to Safeguards Information.

(8) A licensee shall use the information obtained as part of a criminal history records check solely for the purpose of determining an individual's suitability for unescorted access to the nuclear power facility, the non-power reactor facility, or access to Safeguards Information.

(c) *Prohibitions.* (1) A licensee may not base a final determination to deny an individual unescorted access to the nuclear power facility, the non-power reactor facility, or access to Safeguards Information solely on the basis of information received from the FBI involving:

(i) An arrest more than 1 year old for which there is no information of the disposition of the case; or

(ii) An arrest that resulted in dismissal of the charge or an acquittal.

(2) A licensee may not use information received from a criminal history check obtained under this section in a manner that would infringe upon the rights of any individual under the First Amendment to the Constitution of the United States, nor shall the licensee use the information in any way which would discriminate among individuals on the basis of race, religion, national origin, sex, or age.

(d) *Procedures for processing of fingerprint checks.* (1) For the purpose of complying with this section, licensees shall, using an appropriate method listed in § 73.4, submit to the NRC's Division of Physical and Cyber Security Policy, Mail Stop T–07D04M , one completed, legible standard fingerprint card (Form FD–258, ORIMDNRCOOOZ) or, where practicable, other fingerprint records for each individual requiring unescorted access to the nuclear power facility, the non-power reactor facility, or access to Safeguards Information, to the Director of the NRC's Division of Physical and Cyber Security Policy, marked for the attention of the Division's Criminal History Check Section. Copies of these forms may be obtained by writing the Office of the Chief Information Officer, U.S. Nuclear Regulatory Commission, Washington, DC 20555–0001, by calling 301–415–5877, or by email to *FORMS.Resource@nrc.gov*. Guidance on what alternative formats might be practicable is referenced in § 73.4. The licensee shall establish procedures to ensure that the quality of the fingerprints taken results in minimizing the rejection rate of fingerprint cards due to illegible or incomplete cards.

(2) The Commission will review applications for criminal history checks for completeness. Any Form FD–258 or other fingerprint record containing omissions or evident errors will be returned to the licensee for corrections. The fee for processing fingerprint checks includes one free resubmission if the initial submission is returned by the FBI because the fingerprint impressions cannot be classified. The one free resubmission must have the FBI Transaction Control Number reflected on the resubmission. If additional submissions are necessary, they will be treated as an initial submittal and require a second payment of the processing fee. The payment of a new processing fee entitles the submitter to an additional free resubmittal, if necessary. Previously rejected submissions may not be included with the third submission because the submittal will be rejected automatically.

(3)(i) Fees for the processing of fingerprint checks are due upon application. Licensees shall submit payment with the application for the processing of fingerprints through corporate check, certified check, cashier's check, money order, or electronic payment, made payable to ''U.S. NRC.'' (For guidance on making electronic payments, contact the Security Branch, Division of Facilities and Security, at (301) 415–7404). Combined payment for multiple applications is acceptable.

(ii) The application fee is the sum of the user fee charged by the FBI for

each fingerprint card or other fingerprint record submitted by the NRC on behalf of a licensee, and an administrative processing fee assessed by the NRC. The NRC processing fee covers administrative costs associated with NRC handling of licensee fingerprint submissions. The Commission publishes the amount of the fingerprint records check application fee on the NRC public Web site. (To find the current fee amount, go to the Electronic Submittals page at *http://www.nrc.gov/site-help/e-submittals.html* and see the link for the Criminal History Program.) The Commission will directly notify licensees who are subject to this regulation of any fee changes.

(4) The Commission will forward to the submitting licensee all data received from the FBI as a result of the licensee's application(s) for criminal history checks, to include the FBI fingerprint record.

(e) *Right to correct and complete information.* (1) Prior to any final adverse determination, the licensee shall make available to the individual the contents of records obtained from the FBI for the purpose of assuring correct and complete information. Confirmation of receipt by the individual of this notification must be maintained by the licensee for a period of 1 year from the date of the notification.

(2) If after reviewing the record, an individual believes that it is incorrect or incomplete in any respect and wishes changes, corrections, or updating (of the alleged deficiency), or to explain any matter in the record, the individual may initiate challenge procedures. These procedures include direct application by the individual challenging the record to the agency, *i.e.*, law enforcement agency, that contributed the questioned information or direct challenge as to the accuracy or completeness of any entry on the criminal history record to the Federal Bureau of Investigation Criminal Investigative Services Division, 1000 Custer Hollow Road, Clarksburg, WV 26537-9700 as set forth in 28 CFR 16.30 through 16.34. In the latter case, the FBI then forwards the challenge to the agency that submitted the data requesting that agency to verify or correct the challenged entry. Upon receipt of an official communication directly from the agency that contributed the original information, the FBI Criminal Justice Information Services Division makes any changes necessary in accordance with the information supplied by that agency. Licensees must provide at least 10 days for an individual to initiate action to challenge the results of an FBI criminal history records check after the record being made available for his/her review. The licensee may make a final adverse determination based upon the criminal history record, if applicable, only upon receipt of the FBI's confirmation or correction of the record.

(3) In addition to the right to obtain records from the FBI in paragraph (e)(1) of this section and the right to initiate challenge procedures in paragraph (e)(2) of this section, an individual participating in an NRC adjudication and seeking to obtain Safeguards Information for use in that adjudication may appeal a final adverse determination by the NRC Office of Administration to the presiding officer of the proceeding. The request may also seek to have the Chief Administrative Judge designate an officer other than the presiding officer of the proceeding to review the adverse determination.

(f) *Protection of information.* (1) Each licensee who obtains a criminal history record on an individual under this section shall establish and maintain a system of files and procedures for protection of the record and the personal information from unauthorized disclosure.

(2) The licensee may not disclose the record or personal information collected and maintained to persons other than the subject individual, his/her representative, or to those who have a need to have access to the information in performing assigned duties in the process of granting or denying unescorted access to the nuclear power facility, the non-power reactor facility or access to Safeguards Information. No individual authorized to have access to the information may re-disseminate the information to any other individual who does not have a need to know.

(3) The personal information obtained on an individual from a criminal

history record check may be transferred to another licensee:

(i) Upon the individual's written request to the licensee holding the data to re-disseminate the information contained in his/her file; and

(ii) The gaining licensee verifies information such as name, date of birth, social security number, sex, and other applicable physical characteristics for identification.

(4) The licensee shall make criminal history records obtained under this section available for examination by an authorized representative of the NRC to determine compliance with the regulations and laws.

(5) The licensee shall retain all fingerprint and criminal history records received from the FBI, or a copy if the individual's file has been transferred, on an individual (including data indicating no record) for one year after termination or denial of unescorted access to the nuclear power facility, the non-power reactor facility, or access to Safeguards Information.

(g) *Fingerprinting requirements for unescorted access for non-power reactor licensees.* (1) No person shall be permitted unescorted access to a non-power reactor facility unless that person has been determined by an NRC-approved reviewing official to be trustworthy and reliable based on the results of an FBI fingerprint-based criminal history records check obtained in accordance with this paragraph. The reviewing official is required to have unescorted access in accordance with this section or access to Safeguards Information.

(2) Each non-power reactor licensee subject to the requirements of this section shall obtain the fingerprints for a criminal history records check for each individual who is seeking or permitted:

(i) Unescorted access to vital areas of the non-power reactor facility; or

(ii) Unescorted access to special nuclear material in the non-power reactor facility provided the individual who is seeking or permitted unescorted access possesses the capability and knowledge to make unauthorized use of the special nuclear material in the non-power reactor facility or to remove the special nuclear material from the non-power reactor in an unauthorized manner.

[52 FR 6314, Mar. 2, 1987; 52 FR 7821, Mar. 13, 1987]

EDITORIAL NOTE: For FEDERAL REGISTER citations affecting § 73.57, see the List of CFR Sections Affected, which appears in the Finding Aids section of the printed volume and at *www.govinfo.gov*.

§ 73.58 Safety/security interface requirements for nuclear power reactors.

(a) Each operating nuclear power reactor licensee with a license issued under part 50 or 52 of this chapter shall comply with the requirements of this section.

(b) The licensee shall assess and manage the potential for adverse effects on safety and security, including the site emergency plan, before implementing changes to plant configurations, facility conditions, or security.

(c) The scope of changes to be assessed and managed must include planned and emergent activities (such as, but not limited to, physical modifications, procedural changes, changes to operator actions or security assignments, maintenance activities, system reconfiguration, access modification or restrictions, and changes to the security plan and its implementation).

(d) Where potential conflicts are identified, the licensee shall communicate them to appropriate licensee personnel and take compensatory and/or mitigative actions to maintain safety and security under applicable Commission regulations, requirements, and license conditions.

[74 FR 13987, Mar. 27, 2009]

§ 73.59 Relief from fingerprinting, identification and criminal history records checks and other elements of background checks for designated categories of individuals.

Fingerprinting, and the identification and criminal history records checks required by section 149 of the Atomic Energy Act of 1954, as amended, and other elements of background checks are not required for the following individuals prior to granting access to Safeguards Information, including Safeguards Information designated

as Safeguards Information-Modified Handling as defined in 10 CFR 73.2:

(a) An employee of the Commission or the Executive Branch of the United States government who has undergone fingerprinting for a prior U.S. government criminal history records check;

(b) A member of Congress;

(c) An employee of a member of Congress or Congressional committee who has undergone fingerprinting for a prior U.S. government criminal history records check;

(d) The Comptroller General or an employee of the Government Accountability Office who has undergone fingerprinting for a prior U.S. Government criminal history records check;

(e) The Governor of a State or his or her designated State employee representative;

(f) A representative of a foreign government organization that is involved in planning for, or responding to, nuclear or radiological emergencies or security incidents who the Commission approves for access to Safeguards Information, including Safeguards Information designated as Safeguards Information—Modified Handling;

(g) Federal, State, or local law enforcement personnel;

(h) State Radiation Control Program Directors and State Homeland Security Advisors or their designated State employee representatives;

(i) Agreement State employees conducting security inspections on behalf of the NRC pursuant to an agreement executed under section 274.i. of the Atomic Energy Act of 1954, as amended;

(j) Representatives of the International Atomic Energy Agency (IAEA) engaged in activities associated with the U.S./IAEA Safeguards Agreement who have been certified by the NRC;

(k) Any agent, contractor, or consultant of the aforementioned persons who has undergone equivalent criminal history records and background checks to those required by 10 CFR 73.22(b) or 73.23(b).

(l) Tribal official or the Tribal official's designated representative, and Tribal law enforcement personnel.

[73 FR 63580, Oct. 24, 2008, as amended at 77 FR 34206, June 11, 2012]

§ 73.60 Additional requirements for physical protection at nonpower reactors.

Each nonpower reactor licensee who, pursuant to the requirements of part 70 of this chapter, possesses at any site or contiguous sites subject to control by the licensee uranium–235 (contained in uranium enriched to 20 percent or more in the U–235 isotope), uranium–233, or plutonium, alone or in any combination in a quantity of 5000 grams or more computed by the formula, grams = (grams contained U–235) + 2.5 (grams U–233 + grams plutonium), shall protect the special nuclear material from theft or diversion pursuant to the requirements of paragraphs 73.67 (a), (b), (c), and (d), in addition to this section, except that a licensee is exempt from the requirements of paragraphs (a), (b), (c), (d), and (e) of this section to the extent that it possesses or uses special nuclear material that is not readily separable from other radioactive material and that has a total external radiation level in excess of 1 gray (100 rad) per hour at a distance of 1 meter (3.3 feet) from any accessible surface without intervening shielding.

(a) *Access requirements.* (1) Special nuclear material shall be stored or processed only in a material access area. No activities other than those which require access to special nuclear material or equipment employed in the process, use, or storage of special nuclear material, shall be permitted within a material access area.

(2) Material access areas shall be located only within a protected area to which access is controlled.

(3) Special nuclear material not in process shall be stored in a vault equipped with an intrusion alarm or in a vault-type room, and each such vault or vault-type room shall be controlled as a separate material access area.

(4) Enriched uranium scrap in the form of small pieces, cuttings, chips, solutions or in other forms which result from a manufacturing process, contained in 30-gallon or larger containers, with a uranium-235 content of less than 0.25 grams per liter, may be stored within a locked and separately fenced area which is within a larger protected area provided that the storage area is no closer than 25 feet to the

perimeter of the protected area. The storage area when unoccupied shall be protected by a guard or watchman who shall patrol at intervals not exceeding 4 hours, or by intrusion alarms.

(5) Admittance to a material access area shall be under the control of authorized individuals and limited to individuals who require such access to perform their duties.

(6) Prior to entry into a material access area, packages shall be searched for devices such as firearms, explosives, incendiary devices, or counterfeit substitute items which could be used for theft or diversion of special nuclear material.

(7) Methods to observe individuals within material access areas to assure that special nuclear material is not diverted shall be provided and used on a continuing basis.

(b) *Exit requirement.* Each individual, package, and vehicle shall be searched for concealed special nuclear material before exiting from a material access area unless exit is into a contiguous material access area. The search may be carried out by a physical search or by use of equipment capable of detecting the presence of concealed special nuclear material.

(c) *Detection aid requirement.* Each unoccupied material access area shall be locked and protected by an intrusion alarm on active status. All emergency exits shall be continuously alarmed.

(d) *Testing and maintenance.* Each licensee shall test and maintain intrusion alarms, physical barriers, and other devices utilized pursuant to the requirements of this section as follows:

(1) Intrusion alarms, physical barriers, and other devices used for material protection shall be maintained in operable condition.

(2) Each intrusion alarm shall be inspected and tested for operability and required functional performance at the beginning and end of each interval during which it is used for material protection, but not less frequently than once every seven (7) days.

(e) *Response requirement.* Each licensee shall establish, maintain, and follow an NRC-approved safeguards contingency plan for responding to threats, thefts, and radiological sabotage related to the special nuclear material and nuclear facilities subject to the provisions of this section. Safeguards contingency plans must be in accordance with the criteria in Appendix C to this part, ''Licensee Safeguards Contingency Plans.''

(f) In addition to the fixed-site requirements set forth in this section and in § 73.67, the Commission may require, depending on the individual facility and site conditions, any alternate or additional measures deemed necessary to protect against radiological sabotage at nonpower reactors licensed to operate at or above a power level of 2 megawatts thermal.

[38 FR 35430, Dec. 28, 1973, as amended at 44 FR 68199, Nov. 28, 1979; 57 FR 33431, July 29, 1992; 58 FR 13700, Mar. 15, 1993; 86 FR 43403, Aug. 9, 2021]

§ 73.61 Relief from fingerprinting and criminal history records check for designated categories of individuals permitted unescorted access to certain radioactive materials or other property.

Notwithstanding any other provision of the Commission's regulations, fingerprinting and the identification and criminal history records checks required by section 149 of the Atomic Energy Act of 1954, as amended, are not required for the following individuals prior to granting unescorted access to radioactive materials or other property that the Commission determines by regulation or order to be of such significance to the public health and safety or the common defense and security as to warrant fingerprinting and background checks:

(a) An employee of the Commission or of the Executive Branch of the U.S. Government who has undergone fingerprinting for a prior U.S. Government criminal history check;

(b) A Member of Congress;

(c) An employee of a member of Congress or Congressional committee who has undergone fingerprinting for a prior U.S. Government criminal history check;

(d) The Governor of a State or his or her designated State employee representative;

(e) Federal, State, or local law enforcement personnel;

(f) State Radiation Control Program Directors and State Homeland Security

Advisors or their designated State employee representatives;

(g) Agreement State employees conducting security inspections on behalf of the NRC pursuant to an agreement executed under section 274.i. of the Atomic Energy Act;

(h) Representatives of the International Atomic Energy Agency (IAEA) engaged in activities associated with the U.S./IAEA Safeguards Agreement who have been certified by the NRC.

[72 FR 4948, Feb. 2, 2007]

PHYSICAL PROTECTION OF SPECIAL NUCLEAR MATERIAL OF MODERATE AND LOW STRATEGIC SIGNIFICANCE

§ 73.67 Licensee fixed site and in-transit requirements for the physical protection of special nuclear material of moderate and low strategic significance.

(a) *General performance objectives.* (1) Each licensee who possesses, uses or transports special nuclear material of moderate or low strategic significance shall establish and maintain a physical protection system that will achieve the following objectives:

(i) Minimize the possibilities for unauthorized removal of special nuclear material consistent with the potential consequences of such actions; and

(ii) Facilitate the location and recovery of missing special nuclear material.

(2) To achieve these objectives, the physical protection system shall provide:

(i) Early detection and assessment of unauthorized access or activities by an external adversary within the controlled access area containing special nuclear material;

(ii) Early detection of removal of special nuclear material by an external adversary from a controlled access area;

(iii) Assure proper placement and transfer of custody of special nuclear material; and

(iv) Respond to indications of an unauthorized removal of special nuclear material and then notify the appropriate response forces of its removal in order to facilitate its recovery.

(b)(1) A licensee is exempt from the requirements of this section to the extent that he possesses, uses, or transports:

(i) Special nuclear material which is not readily separable from other radioactive material and which has a total external radiation level in excess of 1 gray (100 rad) per hour at a distance of 1 meter (3.3 feet) from any accessible surface without intervening shielding, or

(ii) Sealed plutonium-beryllium neutron sources totaling 500 grams or less contained plutonium at any one site or contiguous sites, or

(iii) Plutonium with an isotopic concentration exceeding 80 percent in plutonium-238.

(2) A licensee who has quantities of special nuclear material equivalent to special nuclear material of moderate strategic significance distributed over several buildings may, for each building which contains a quantity of special nuclear material less than or equal to a level of special nuclear material of low strategic significance, protect the material in that building under the lower classification physical security requirements.

(c) Each licensee who possesses, uses, transports, or delivers to a carrier for transport special nuclear material of moderate strategic significance, or 10 kg or more of special nuclear material of low strategic significance shall:

(1) Submit a security plan or an amended security plan describing how the licensee will comply with all the requirements of paragraphs (d), (e), (f), and (g) of this section, as appropriate, including schedules of implementation. The licensee shall retain a copy of the effective security plan as a record for three years after the close of period for which the licensee possesses the special nuclear material under each license for which the original plan was submitted. Copies of superseded material must be retained for three years after each change.

(2) Within 30 days after the plan submitted pursuant to paragraph (c)(1) of this section is approved, or when specified by the NRC in writing, implement the approved security plan.

(d) *Fixed site requirements for special nuclear material of moderate strategic significance.* Each licensee who possesses, stores, or uses quantities and types of special nuclear material of moderate strategic significance at a fixed site or contiguous sites, except as allowed by paragraph (b)(2) of this section and except those who are licensed to operate a nuclear power reactor pursuant to part 50, shall:

(1) Use the material only within a controlled access area which is illuminated sufficiently to allow detection and surveillance of unauthorized penetration or activities,

(2) Store the material only within a controlled access area such as a vault-type room or approved security cabinet or their equivalent which is illuminated sufficiently to allow detection and surveillance of unauthorized penetration or activities,

(3) Monitor with an intrusion alarm or other device or procedures the controlled access areas to detect unauthorized penetration or activities,

(4) Conduct screening prior to granting an individual unescorted access to the controlled access area where the material is used or stored, in order to obtain information on which to base a decision to permit such access,

(5) Develop and maintain a controlled badging and lock system to identify and limit access to the controlled access areas to authorized individuals,

(6) Limit access to the controlled access areas to authorized or escorted individuals who require such access in order to perform their duties,

(7) Assure that all visitors to the controlled access areas are under the constant escort of an individual who has been authorized access to the area,

(8) Establish a security organization or modify the current security organization to consist of at least one watchman per shift able to assess and respond to any unauthorized penetrations or activities in the controlled access areas,

(9) Provide a communication capability between the security organization and appropriate response force,

(10) Search on a random basis vehicles and packages leaving the controlled access areas, and

(11) Establish and maintain written response procedures for dealing with threats of thefts or thefts of these materials. The licensee shall retain a copy of the response procedures as a record for the period during which the licensee possesses the appropriate type and quantity of special nuclear material requiring this record under each license for which the original procedures were developed and, for three years thereafter. Copies of superseded material must be retained for three years after each change.

(e) *In-transit requirements for special nuclear material of moderate strategic significance.* (1) Each licensee who transports, exports or delivers to a carrier for transport special nuclear material of moderate strategic significance shall:

(i) Provide advance notification to the receiver of any planned shipments specifying the mode of transport, estimated time of arrival, location of the nuclear material transfer point, name of carrier and transport identification,

(ii) Receive confirmation from the receiver prior to the commencement of the planned shipment that the receiver will be ready to accept the shipment at the planned time and location and acknowledges the specified mode of transport,

(iii) Check the integrity of the container and locks or seals prior to shipment, and

(iv) Arrange for the in-transit physical protection of the materials in accordance with the requirements of § 73.67(e)(3) unless the receiver is a licensee and has agreed in writing to arrange for the in-transit physical protection.

(2) Each licensee who receives special nuclear material of moderate strategic significance shall:

(i) Check the integrity of the containers and seals upon receipt of the shipment,

(ii) Notify the shipper of receipt of the material as required in § 74.15 of this chapter, and

(iii) Arrange for the in-transit physical protection of the material in accordance with the requirements of

§ 73.67(e)(3) unless the shipper is a licensee and has agreed in writing to arrange for the in-transit physical protection.

(3) Each licensee who arranges for the in-transit physical protection of special nuclear material of moderate strategic significance, or who takes delivery of this material free on board (f.o.b.) the point at which it is delivered to a carrier for transport shall:

(i) Arrange for telephone or radio communications between the transport and the licensee or its designee: (A) To periodically confirm the status of the shipment (B) for notification of any delays in the scheduled shipment, and (C) to request appropriate local law enforcement agency response in the event of an emergency.

(ii) Minimize the time that the material is in transit by reducing the number and duration of nuclear material transfers and by routing the material in the most safe and direct manner,

(iii) Conduct screening of all licensee employees involved in the transportation of the material in order to obtain information on which to base a decision to permit them control over the material,

(iv) Establish and maintain written response procedures for dealing with threats of thefts or thefts of this material. The licensee shall retain a copy of the current response procedures as a record for three years after the close of period for which the licensee possesses the special nuclear material under each license for which the original procedures were developed and copies of superseded material must be retained for three years after each change.

(v) Make arrangements to be notified immediately of the arrival of the shipment at its destination, or of any such shipment that is lost or unaccounted for after the estimated time of arrival at its destination, and

(vi) Initiate immediately a trace investigation of any shipment that is determined to be lost or unaccounted for after a reasonable time beyond the estimated arrival time.

(vii) Notify the NRC Headquarters Operations Center by telephone at the numbers specified in appendix A to this part within one hour after the discovery of the loss of the shipment and within one hour after recovery of or accounting for such lost shipment in accordance with the provisions of § 73.71 of this part.

(4) Each licensee who arranges the physical protection of strategic special nuclear material in quantities of moderate strategic significance while in transit or who takes delivery of this material free on board (f.o.b.) the point at which it is delivered to a carrier for transport shall comply with the requirements of paragraphs (e) (1), (2), and (3) of this section. The licensee shall retain each record required by paragraphs (e) (1), (2), (3), and (4) (i) and (ii) of this section for three years after close of period licensee possesses special nuclear material under each license that authorizes these licensee activities. Copies of superseded material must be retained for three years after each change. In addition, the licensee shall—

(i) Make all shipments of the material either (A) in dedicated transports with no intermediate stops to load or unload other cargo and with no carrier or vehicle transfers or temporary storage in-transit, or (B) under arrangements whereby the custody of the shipment and all custody transfers are acknowledged by signature, and

(ii) Maintain the material under lock or under the control of an individual who has acknowledged acceptance of custody of the material by signature.

(5) Each licensee who exports special nuclear material of moderate strategic significance shall comply with the requirements specified in paragraphs (c) and (e) (1), (3), and (4) of this section. The licensee shall retain each record required by these sections for three years after the close of period for which the licensee possesses the special nuclear material under each license that authorizes the licensee to export this material. Copies of superseded material must be retained for three years after each change.

(6) Each licensee who imports special nuclear material of moderate strategic significance shall,

(i) Comply with the requirements specified in paragraphs (c) and (e) (2), (3), and (4) of this section. The licensee shall retain each record required by these sections for three years after the

close of period for which the licensee possesses the special nuclear material under each license that authorizes the licensee to import this material. Copies of superseded material must be retained for three years after each change.

(ii) Notify the exporter who delivered the material to a carrier for transport of the arrival of such material.

(7) If, after receiving advance notice pursuant to § 73.72 from a licensee planning to import, export, transport, deliver to a carrier for transport in a single shipment, or take delivery at the point where it is delivered to a carrier, special nuclear material of moderate strategic significance containing in any part strategic special nuclear material, it appears to the Commission that two or more shipments of special nuclear material of moderate strategic significance, constituting in the aggregate an amount equal to or greater than a formula quantity of strategic special nuclear material, may be en route at the same time, the Commission may order one or more of the shippers to delay shipment according to the following provisions:

(i) The shipper shall provide to the Commission, upon request, such additional information regarding a planned shipment as the Commission considers pertinent to the decision on whether to delay such shipment.

(ii) The receiver of each shipment, or the shipper if the receiver is not a licensee, shall notify the Director, Division of Physical and Cyber Security Policy, Office of Nuclear Security and Incident Response, by telephone, no later than 24 hours after arrival of such shipment at its final destination, or after such shipment has left the United States as an export, to confirm the integrity of the shipment at the time of receipt or exit from the United States.

(iii) The Commission shall notify the affected shippers no later than two days before the scheduled shipment date that a given shipment is to be delayed.

(iv) Shipments of special nuclear material of moderate strategic significance which are protected in accordance with the provisions of §§ 73.20, 73.25, and 73.26 shall not be subject to orders to delay shipment nor considered to constitute a portion of an aggregate formula quantity of strategic special nuclear material for the purposes of determining whether any shipments must delayed.

(f) *Fixed site requirements for special nuclear material of low strategic significance.* Each licensee who possesses, stores, or uses special nuclear material of low strategic significance at a fixed site or contiguous sites, except those who are licensed to operate a nuclear power reactor pursuant to part 50, shall:

(1) Store or use the material only within a controlled access area,

(2) Monitor with an intrusion alarm or other device or procedures the controlled access areas to detect unauthorized penetrations or activities,

(3) Assure that a watchman or offsite response force will respond to all unauthorized penetrations or activities, and

(4) Establish and maintain response procedures for dealing with threats of thefts or thefts of this material. The licensee shall retain a copy of the current response procedures as a record for three years after the close of period for which the licensee possesses the special nuclear material under each license for which the procedures were established. Copies of superseded material must be retained for three years after each change.

(g) *In-transit requirements for special nuclear material of low strategic significance.* (1) Each licensee who transports or who delivers to a carrier for transport special nuclear material of low strategic significance shall:

(i) Provide advance notification to the receiver of any planned shipments specifying the mode of transport, estimated time of arrival, location of the nuclear material transfer point, name of carrier and transport identification,

(ii) Receive confirmation from the receiver prior to commencement of the planned shipment that the receiver will be ready to accept the shipment at the planned time and location and acknowledges the specified mode of transport,

(iii) Transport the material in a tamper indicating sealed container,

(iv) Check the integrity of the containers and seals prior to shipment, and

(v) Arrange for the in-transit physical protection of the material in accordance with the requirements of § 73.67(g)(3) of this part, unless the receiver is a licensee and has agreed in writing to arrange for the in-transit physical protection.

(2) Each licensee who receives quantities and types of special nuclear material of low strategic significance shall:

(i) Check the integrity of the containers and seals upon receipt of the shipment,

(ii) Notify the shipper of receipt of the material as required in § 74.15 of this chapter, and

(iii) Arrange for the in-transit physical protection of the material in accordance with the requirements of § 73.67(g)(3) of this part, unless the shipper is a licensee and has agreed in writing to arrange for the in-transit physical protection.

(3) Each licensee, either shipper or receiver, who arranges for the physical protection of special nuclear material of low strategic significance while in transit or who takes delivery of such material free on board (f.o.b.) the point at which it is delivered to a carrier for transport shall:

(i) Establish and maintain response procedures for dealing with threats or thefts of this material. The licensee shall retain a copy of the current response procedures as a record for three years after the close of period for which the licensee possesses the special nuclear material under each license for which the procedures were established. Copies of superseded material must be retained for three years after each change.

(ii) Make arrangements to be notified immediately of the arrival of the shipment at its destination, or of any such shipment that is lost or unaccounted for after the estimated time of arrival at its destination, and

(iii) Conduct immediately a trace investigation of any shipment that is lost or unaccounted for after the estimated arrival time and notify the NRC Headquarters Operations Center by telephone at the numbers specified in appendix A to this part within 1 hour after the discovery of the loss of the shipment and within 1 hour after recovery of or accounting for such lost shipment in accordance with the provisions of § 73.71 of this part.

(4) Each licensee who exports special nuclear material of low strategic significance shall comply with the appropriate requirements specified in paragraphs (c) and (g) (1) and (3) of this section. The licensee shall retain each record required by these sections for three years after the close of period for which the licensee possesses the special nuclear material under each license that authorizes the licensee to export this material. Copies of superseded material must be retained for three years after each change.

(5) Each licensee who imports special nuclear material of low strategic significance shall:

(i) Comply with the requirements specified in paragraphs (c) and (g) (2) and (3) of this section and retain each record required by these paragraphs for three years after the close of period for which the licensee possesses the special nuclear material under each license that authorizes the licensee to import this material. Copies of superseded material must be retained for three years after each change.

(ii) Notify the person who delivered the material to a carrier for transport of the arrival of such material.

[44 FR 43283, July 24, 1979. Redesignated at 44 FR 68198, Nov. 28, 1979, as amended at 45 FR 19215, Mar. 25, 1980; 47 FR 19114, May 4, 1982; 52 FR 21657, June 9, 1987; 53 FR 19260, May 27, 1988; 57 FR 33431, July 29, 1992, 59 FR 14087, Mar. 25, 1994; 67 FR 3586, Jan. 25, 2002; 67 FR 78143, Dec. 23, 2002; 68 FR 14530, Mar. 26, 2003; 68 FR 23575, May 5, 2003; 73 FR 32463, June 9, 2008; 74 FR 62684, Dec. 1, 2009; 83 FR 58723, Nov. 21, 2018; 85 FR 65664, Oct. 16, 2020; 86 FR 43403, Aug. 9, 2021]

RECORDS AND REPORTS

§ 73.70 Records.

Each record required by this part must be legible throughout the retention period specified by each Commission regulation. The record may be the original or a reproduced copy or a microform provided that the copy or microform is authenticated by authorized personnel and that the microform is capable of producing a clear copy throughout the required retention period. The record may also be stored in

electronic media with the capability for producing legible, accurate, and complete records during the required retention period. Records such as letters, drawings, specifications, must include all pertinent information such as stamps, initials, and signatures. The licensee shall maintain adequate safeguards against tampering with and loss of records. Each licensee subject to the provisions of §§ 73.20, 73.25, 73.26, 73.27, 73.45, 73.46, 73.55, or 73.60 shall keep the following records:

(a) Names and addresses of all individuals who have been designated as authorized individuals. The licensee shall retain this record of currently designated authorized individuals for the period during which the licensee possesses the appropriate type and quantity of special nuclear material requiring this record under each license that authorizes the activity that is subject to the recordkeeping requirement and, for three years thereafter. Copies of superseded material must be retained for three years after each change.

(b) Names, addresses, and badge numbers of all individuals authorized to have access to vital equipment or special nuclear material, and the vital areas and material access areas to which authorization is granted. The licensee shall retain the record of individuals currently authorized this access for the period during which the licensee possesses the appropriate type and quantity of special nuclear material requiring this record under each license that authorizes the activity that is subject to the recordkeeping requirement and, for three years thereafter. Copies of superseded material must be retained for three years after each change.

(c) A register of visitors, vendors, and other individuals not employed by the licensee pursuant to §§ 73.46(d)(13), 73.55(g)(7), or 73.60. The licensee shall retain this register as a record, available for inspection, for 3 years after the last entry is made in the register.

(d) A log indicating name, badge number, time of entry, and time of exit of all individuals granted access to a vital area except those individuals entering or exiting the reactor control room. The licensee shall retain this log as a record for three years after the last entry is made in the log.

(e) Documentation of all routine security tours and inspections, and of all tests, inspections, and maintenance performed on physical barriers, intrusion alarms, communications equipment, and other security related equipment used pursuant to the requirements of this part. The licensee shall retain the documentation for these events for three years from the date of documenting each event.

(f) A record at each onsite alarm annunciation location of each alarm, false alarm, alarm check, and tamper indication that identifies the type of alarm, location, alarm circuit, date, and time. In addition, details of response by facility guards and watchmen to each alarm, intrusion, or other security incident shall be recorded. The license shall retain each record for three years after the record is made.

(g) Shipments of special nuclear material subject to the requirements of this part, including names of carriers, major roads to be used, flight numbers in the case of air shipments, dates and expected times of departure and arrival of shipments, verification of communication equipment on board the transfer vehicle, names of individuals who are to communicate with the transport vehicle, container seal descriptions and identification, and any other information to confirm the means utilized to comply with §§ 73.25, 73.26, and 73.27. This information must be recorded prior to shipment. Information obtained during the course of the shipment such as reports of all communications, change of shipping plan, including monitor changes, trace investigations, and others must also be recorded. The licensee shall retain each record about a shipment required by this paragraph (g) for three years after the record is made.

(h) Procedures for controlling access to protected areas and for controlling access to keys for locks used to protect special nuclear material. The licensee shall retain a copy of the current procedures as a record until the Commission terminates each license for which the procedures were developed and, if

any portion of the procedure is superseded, retain the superseded material for three years after each change.

[53 FR 19261, May 27, 1988, as amended at 57 FR 33431, July 29, 1992; 83 FR 30288, June 28, 2018; 84 FR 63568, Nov. 18, 2019]

§ 73.71 Reporting of safeguards events.

(a)(1) Each licensee subject to the provisions of § 73.25, § 73.26, § 73.27(c), § 73.37, § 73.67(e), or § 73.67(g) shall notify the NRC Headquarters Operations Center by telephone within 1 hour after discovery of the loss of any shipment of SNM or spent fuel, and within 1 hour after recovery of or accounting for such lost shipment. Contact numbers for the NRC Headquarters Operations Center are found in appendix A to this part.

(2) This notification must be made to the NRC Operations Center via the Emergency Notification System, if the licensee is party to that system. If the Emergency Notification System is inoperative or unavailable, the licensee shall make the required notification via commercial telephonic service or other dedicated telephonic system or any other methods that will ensure that a report is received by the NRC Operations Center within one hour. The exemption of § 73.22(f)(3) applies to all telephonic reports required by this section.

(3) The licensee shall, upon request to the NRC, maintain an open and continuous communication channel with the NRC Operations Center.

(4) The initial telephonic notification must be followed within a period of 60 days by a written report submitted to the NRC by an appropriate method listed in § 73.4. In addition to the addressees specified in § 73.4, the licensee shall also provide one copy of the written report addressed to the Director, Office of Nuclear Security and Incident Response. The report must include sufficient information for NRC analysis and evaluation.

(5) Significant supplemental information which becomes available after the initial telephonic notification to the NRC Operations Center or after the submission of the written report must be telephonically reported to the NRC Operations Center and also submitted in a revised written report (with the revisions indicated) to the Regional Office and the Document Control Desk. Errors discovered in a written report must be corrected in a revised report with revisions indicated. The revised report must replace the previous report; the update must be a complete entity and not contain only supplementary or revised information. Each licensee shall maintain a copy of the written report of an event submitted under this section as record for a period of three years from the date of the report.

(b)(1) Each licensee subject to the provisions of § 73.20, § 73.37, § 73.50, § 73.51, § 73.55, § 73.60, or § 73.67 shall notify the NRC Headquarters Operations Center by telephone within 1 hour of discovery of the safeguards events described in paragraph I (a)(1) of appendix G to this part. Licensees subject to the provisions of § 73.20, § 73.37, § 73.50, § 73.51, § 73.55, § 73.60, or each licensee possessing strategic special nuclear material and subject to § 73.67(d) shall notify the NRC Headquarters Operations Center within 1 hour after discovery of the safeguards events described in paragraphs I (a)(2), (a)(3), (b), and (c) of appendix G to this part. Licensees subject to the provisions of § 73.20, § 73.37, § 73.50, § 73.51, § 73.55, or § 73.60 shall notify the NRC Headquarters Operations Center within 1 hour after discovery of the safeguards events described in paragraph I (d) of appendix G to this part. Contact numbers for the NRC Headquarters Operations Center are found in appendix A to this part.

(2) This notification must be made in accordance with the requirements of paragraphs (a) (2), (3), (4), and (5) of this section.

(c) Each licensee subject to the provisions of §§ 73.20, 73.37, 73.50, 73.51, 73.55, 73.60, or each licensee possessing SSNM and subject to the provisions of § 73.67(d) shall maintain a current log and record the safeguards events described in paragraphs II (a) and (b) of appendix G to this part within 24 hours of discovery by a licensee employee or member of the licensee's contract security organization. The licensee shall retain the log of events recorded under this section as a record for 3 years

after the last entry is made in each log or until termination of the license.

(d) Each licensee shall submit to the Commission the 60-day written reports required under the provisions of this section that are of a quality that will permit legible reproduction and processing. If the facility is subject to § 50.73 of this chapter, the licensee shall prepare the written report on NRC Form 366. If the facility is not subject to § 50.73 of this chapter, the licensee shall not use this form but shall prepare the written report in letter format. The report must include sufficient information for NRC analysis and evaluation.

(e) Duplicate reports are not required for events that are also reportable in accordance with §§ 50.72 and 50.73 of this chapter.

[52 FR 21658, June 9, 1987; 52 FR 23257, June 18, 1987, as amended at 59 FR 14087, Mar. 25, 1994; 60 FR 13617, Mar. 14, 1995; 63 FR 26963, May 15, 1998; 67 FR 3586, Jan. 25, 2002; 68 FR 14530, Mar. 26, 2003; 68 FR 23575, May 5, 2003; 68 FR 33617, June 5, 2003; 74 FR 62684, Dec. 1, 2009; 78 FR 29557, May 20, 2013; 83 FR 58723, Nov. 21, 2018; 84 FR 63568, Nov. 18, 2019; 85 FR 65664, Oct. 16, 2020]

§ 73.72 Requirement for advance notice of shipment of formula quantities of strategic special nuclear material, special nuclear material of moderate strategic significance, or irradiated reactor fuel.

(a) A licensee, other than one specified in paragraph (b) of this section, who, in a single shipment, plans to deliver to a carrier for transport, to take delivery at the point where a shipment is delivered to a carrier for transport, to import, to export, or to transport a formula quantity of strategic special nuclear material, special nuclear material of moderate strategic significance, or irradiated reactor fuel[1] required to be protected in accordance with § 73.37, shall:

(1) Notify in writing by mail addressed to ATTN: Director, Office of Nuclear Security and Incident Response, U.S. Nuclear Regulatory Commission, Washington, DC 20555, or by using any appropriate method listed in § 73.4 of this part. Classified notifications shall be sent to the NRC headquarters classified mailing address listed in appendix A to this part.

(2) Assure that the notification will be received at least 10 days before transport of the shipment commences at the shipping facility;

(3) Include the following information in the notification:

(i) The name(s), address(es), and telephone number(s) of the shipper, receiver, and carrier(s);

(ii) A physical description of the shipment:

(A) For a shipment other than irradiated fuel, the elements, isotopes, enrichment, and quantity;

(B) For a shipment of irradiated fuel, the physical form, quantity, type of reactor, and original enrichment;

(iii) A listing of the mode(s) of shipment, transfer point(s), and route(s) to be used;

(iv) The estimated time and date that shipment will commence and that each country along the route is scheduled to be entered; and

(v) The estimated time and date of arrival of the shipment at the destination;

(4) The NRC Headquarters Operations Center shall be notified about the shipment status by telephone at the phone numbers listed in appendix A to this part. Classified and safeguards notifications shall be made by secure telephone. The notifications shall take place at the following intervals:

(i) At least 2 days before commencement of the shipment;

(ii) Two hours before commencement of the shipment; and

(iii) Once the shipment is received at its destination.

(5) The NRC Headquarters Operations Center shall be notified by telephone of schedule changes of more than 6 hours at the phone numbers listed in appendix A to this part. Classified and safeguards notifications shall be made by secure telephone.

(b) A licensee who conducts an onsite transfer of spent nuclear fuel that does not travel upon or cross a public

[1] For purposes of 10 CFR 73.72, the terms ''irradiated reactor fuel'' as described in 10 CFR 73.37 and ''spent nuclear fuel'' are used interchangeably.

highway is exempt from the requirements of this section for that transfer.

[52 FR 9653, Mar. 26, 1987, as amended at 53 FR 4111, Feb. 12, 1988; 60 FR 24552, May 9, 1995; 67 FR 3586, Jan. 25, 2002; 68 FR 58820, Oct. 10, 2003; 74 FR 62684, Dec. 1, 2009; 78 FR 29557, May 20, 2013; 83 FR 58723, Nov. 21, 2018; 84 FR 63568, Nov. 18, 2019; 84 FR 67659, Dec. 11, 2019; 85 FR 65664, Oct. 16, 2020]

§ 73.73 Requirement for advance notice and protection of export shipments of special nuclear material of low strategic significance.

(a) A licensee authorized to export special nuclear material of low strategic significance shall:

(1) Notify in writing the Director, Office of Nuclear Security and Incident Response, by email (preferred method) to *AdvanceNotifications.Resource@nrc.gov* or by using any appropriate method listed in § 73.4;

(2) Assure that the notification will be received at least 10 days before transport of the shipment commences at the shipper's facility;

(3) Include the following information in the notification:

(i) The name(s), address(es), and telephone number(s) of the shipper, receiver, and carrier(s);

(ii) A physical description of the shipment (the elements, isotopes, form, etc.);

(iii) A listing of the mode(s) of shipment, transfer points, and routes to be used;

(iv) The estimated time and date that shipment will commence and that each country along the route is scheduled to be entered; and

(v) The estimated time and date of arrival of the shipment at the destination;

(4) Assure that during transport outside the United States, the shipment will be protected in accordance with Annex I to the Convention on the Physical Protection of Nuclear Material (see appendix E of this part).

(b) A licensee who needs to amend a written advance notification required by paragraph (a) of this section may notify the NRC Headquarters Operations Center by telephone at the numbers listed in appendix A to this part.

[52 FR 9653, Mar. 26, 1987, as amended at 53 FR 4112, Feb. 12, 1988; 60 FR 24553, May 9, 1995; 67 FR 3586, Jan. 25, 2002; 68 FR 58820, Oct. 10, 2003; 74 FR 62684, Dec. 1, 2009; 83 FR 58723, Nov. 21, 2018; 86 FR 67843, Nov. 30, 2021]

§ 73.74 Requirement for advance notice and protection of import shipments of nuclear material from countries that are not party to the Convention on the Physical Protection of Nuclear Material.

(a) A licensee authorized to import special nuclear material of low strategic significance from a country not a party to the Convention on the Physical Protection of Nuclear Material (*i.e.*, not listed in appendix F of this part) shall:

(1) Notify in writing the Director, Office of Nuclear Security and Incident Response, by email (preferred method) to *AdvanceNotifications.Resource@nrc.gov* or by using any appropriate method listed in § 73.4;

(2) Assure that the notification will be received at least 10 days before transport of the shipment commences at the shipper's facility; and

(3) Include the following information in the notification:

(i) The name(s), address(es) and telephone number(s) of the shipper, receiver, and carrier(s);

(ii) A physical description of the shipment (the isotopes, enrichment, quantity, etc.);

(iii) A listing of mode(s) of shipment, transfer points, and routes to be used;

(iv) The estimated time and date that shipment will commence and that each country along the route is scheduled to be entered; and

(v) The estimated time and date of arrival of the shipment at the destination.

(b) A licensee who needs to amend a written advance notification required by paragraph (a) of this section may notify the NRC Headquarters Operations Center by telephone at the numbers listed in appendix A to this part.

(c) A licensee authorized to import from a country not a party to the Convention on the Physical Protection of

Nuclear Material (*i.e.*, not listed in appendix F of this part) a formula quantity of special nuclear material, special nuclear material of moderate strategic significance, special nuclear material of low strategic significance, or irradiated reactor fuel shall assure that during transport outside the United States the shipment will be protected in accordance with Annex I to the Convention on the Physical Protection of Nuclear Material (see appendix E of this part).

[52 FR 9654, Mar. 26, 1987, as amended at 53 FR 4112, Feb. 12, 1988; 60 FR 24553, May 9, 1995; 67 FR 3586, Jan. 25, 2002; 68 FR 58820, Oct. 10, 2003; 74 FR 62684, Dec. 1, 2009; 83 FR 58723, Nov. 21, 2018; 86 FR 67843, Nov. 30, 2021]

§ 73.75 Posting.

(a) This section applies to:

(1) Production or utilization facilities;

(2) High-level waste storage or disposal facilities and independent spent fuel storage installations;

(3) Uranium enrichment, uranium conversion, or nuclear fuel fabrication facilities.

(b)(1) Licensees or certificate holders operating facilities described in paragraph (a) of this section that have a protected area shall conspicuously post notices at every vehicle and pedestrian entrance to the protected area.

(2) Licensees or certificate holders operating facilities described in paragraph (a) of this section that include buildings not within a protected area that nonetheless contain special nuclear material, byproduct material, or source material shall conspicuously post notices at the personnel and vehicle entrances to each such building, except with respect to buildings for which no security plan is required under this part.

(3) The required notices must state: ''The willful unauthorized introduction of any dangerous weapon, explosive, or other dangerous instrument or material likely to produce substantial injury or damage to persons or property into or upon these premises is a Federal crime. (42 U.S.C. 2278a.)''

(4) Every notice posted under this section must be easily readable day and night by both pedestrian and vehicular traffic entering the facility or installation.

(5) These notices may be combined with other notices.

(c) This section does not apply to facilities that, in addition to being regulated by the NRC under a license or certificate of compliance issued by the Commission, are also covered by U.S. Department of Energy regulations imposing criminal penalties, and associated posting requirements, under section 229 of the Atomic Energy Act with respect to unauthorized introduction of dangerous weapons, explosives, or other dangerous instruments or materials likely to produce substantial injury or damage to persons or property.

[74 FR 52674, Oct. 14, 2009]

§ 73.77 Cyber security event notifications.

(a) Each licensee subject to the provisions of § 73.54 shall notify the NRC Headquarters Operations Center via the Emergency Notification System (ENS), in accordance with paragraph (c) of this section:

(1) Within one hour after discovery of a cyber attack that adversely impacted safety-related or important-to-safety functions, security functions, or emergency preparedness functions (including offsite communications); or that compromised support systems and equipment resulting in adverse impacts to safety, security, or emergency preparedness functions within the scope of § 73.54.

(2) Within four hours:

(i) After discovery of a cyber attack that could have caused an adverse impact to safety-related or important-to-safety functions, security functions, or emergency preparedness functions (including offsite communications); or that could have compromised support systems and equipment, which if compromised, could have adversely impacted safety, security, or emergency preparedness functions within the scope of § 73.54.

(ii) After discovery of a suspected or actual cyber attack initiated by personnel with physical or electronic access to digital computer and communication systems and networks within the scope of § 73.54.

(iii) After notification of a local, State, or other Federal agency (e.g., law enforcement, FBI, etc.) of an event related to the licensee's implementation of their cyber security program for digital computer and communication systems and networks within the scope of § 73.54 that does not otherwise require a notification under paragraph (a) of this section.

(3) Within eight hours after receipt or collection of information regarding observed behavior, activities, or statements that may indicate intelligence gathering or pre-operational planning related to a cyber attack against digital computer and communication systems and networks within the scope of § 73.54.

(b) *Twenty-four hour recordable events.* (1) The licensee shall use the site corrective action program to record vulnerabilities, weaknesses, failures and deficiencies in their § 73.54 cyber security program within twenty-four hours of their discovery.

(2) The licensee shall use the site corrective action program to record notifications made under paragraph (a) of this section within twenty-four hours of their discovery.

(c) *Notification process.* (1) Each licensee shall make telephonic notifications required by paragraph (a) of this section to the NRC Headquarters Operations Center via the ENS. If the ENS is inoperative or unavailable, the licensee shall make the notification via a commercial telephone service or other dedicated telephonic system or any other methods that will ensure a report is received by the NRC Headquarters Operations Center within the timeframe. Commercial telephone numbers for the NRC Headquarters Operations Center are specified in appendix A to this part.

(2) Notifications required by this section that contain Safeguards Information may be made to the NRC Headquarters Operations Center without using secure communications systems under the exception in § 73.22(f)(3) for emergency or extraordinary conditions.

(3) Notifications required by this section that contain Safeguards Information and/or classified national security information and/or restricted data must be made to the NRC Headquarters Operations Center using secure communications systems appropriate to the sensitivity/classification level of the message. Licensees making these types of telephonic notifications must contact the NRC Headquarters Operations Center at the commercial numbers specified in appendix A to this part and request a transfer to a secure telephone.

(i) If the licensee's secure communications capability is unavailable (e.g., due to the nature of the security event), the licensee must provide as much information to the NRC as is required by this section, without revealing or discussing any Safeguards Information and/or Classified Information, in order to meet the timeliness requirements of this section. The licensee must also indicate to the NRC that its secure communications capability is unavailable.

(ii) Licensees using a non-secure communications capability may be directed by the NRC Emergency Response management to provide classified information to the NRC over the non-secure system, due to the significance of the ongoing security event. In such circumstances, the licensee must document this direction and any information provided to the NRC over a non-secure communications capability in the written security follow-up report required in accordance with paragraph (d) of this section.

(4) For events reported under paragraph (a)(1) of this section, the NRC may request that the licensee maintain an open and continuous communication channel with the NRC Headquarters Operations Center.

(5) Licensees desiring to retract a previous security event report that has been determined to not meet the threshold of a reportable event must telephonically notify the NRC Headquarters Operations Center and indicate the report being retracted and basis for the retraction.

(6) *Declaration of emergencies.* Notifications made to the NRC for the declaration of an emergency class shall be performed in accordance with § 50.72 of this chapter, as applicable.

(7) *Elimination of duplication.* Separate notifications and reports are not

required for events that are also reportable in accordance with §§ 50.72 and 50.73 of this chapter. However, these notifications should also indicate the applicable § 73.77 reporting criteria.

(d) *Written security follow-up reports.* Each licensee making an initial telephonic notification of security events to the NRC according to the provisions of paragraphs (a)(1), (a)(2)(i), and (a)(2)(ii) of this section must also submit a written security follow-up report to the NRC within 60 days of the telephonic notification in accordance with § 73.4.

(1) Licensees are not required to submit a written security follow-up report following a telephonic notification made under § 73.77(a)(2)(iii) or (a)(3).

(2) Each licensee shall submit to the NRC written security follow-up reports that are of a quality that will permit legible reproduction and processing.

(3) Licensees shall prepare the written security follow-up report on NRC Form 366.

(4) In addition to the addressees specified in § 73.4, the licensee shall also provide one copy of the written security follow-up report addressed to the Director, Office of Nuclear Security and Incident Response, or the Director's designee. Any written security follow-up reports containing classified information shall be transmitted to the NRC Headquarters' classified mailing address as specified in appendix A to this part.

(5) The written security follow-up report must include sufficient information for NRC analysis and evaluation.

(6) Significant supplemental information which becomes available after the initial telephonic notification to the NRC Headquarters Operations Center or after the submission of the written security follow-up report must be telephonically reported to the NRC Headquarters Operations Center under paragraph (c) of this section and also submitted in a revised written security follow-up report (with the revisions indicated) as required under this section.

(7) Errors discovered in a written security follow-up report must be corrected in a revised written security follow-up report with the revision(s) indicated.

(8) The revised written security follow-up report must replace the previous written security follow-up report; the update must be complete and not be limited to only supplementary or revised information.

(9) If the licensee subsequently retracts a telephonic notification made under this section as not meeting the threshold of a reportable event, and has not yet submitted a written security follow-up report then submission of a written security follow-up report is not required.

(10) If the licensee subsequently retracts a telephonic notification made under this section as not meeting the threshold of a reportable event after it has submitted a written security follow-up report required by this paragraph, then the licensee shall submit a revised written security follow-up report in accordance with this paragraph.

(11) Each written security follow-up report submitted containing Safeguards Information or Classified Information must be created, stored, marked, labeled, handled, and transmitted to the NRC according to the requirements of §§ 73.21 and 73.22 or with part 95 of this chapter, as applicable.

(12) Each licensee shall maintain a copy of the written security follow-up report of an event submitted under this section as a record for a period of three years from the date of the report or until the Commission terminates the license for which the records were developed, whichever comes first.

[80 FR 67275, Nov. 2, 2015]

ENFORCEMENT

§ 73.80 Violations.

(a) The Commission may obtain an injunction or other court order to prevent a violation of the provisions of—

(1) The Atomic Energy Act of 1954, as amended;

(2) Title II of the Energy Reorganization Act of 1974, as amended; or

(3) A regulation or order issued pursuant to those Acts.

(b) The Commission may obtain a court order for the payment of a civil penalty imposed under section 234 of the Atomic Energy Act:

(1) For violations of—

(i) Sections 53, 57, 62, 63, 81, 82, 101, 103, 104, 107, or 109 of the Atomic Energy Act of 1954, as amended:

(ii) Section 206 of the Energy Reorganization Act;

(iii) Any rule, regulation, or order issued pursuant to the sections specified in paragraph (b)(1)(i) of this section;

(iv) Any term, condition, or limitation of any license issued under the sections specified in paragraph (b)(1)(i) of this section.

(2) For any violation for which a license may be revoked under Section 186 of the Atomic Energy Act of 1954, as amended.

[57 FR 55078, Nov. 24, 1992]

§ 73.81 Criminal penalties.

(a) Section 223 of the Atomic Energy Act of 1954, as amended, provides for criminal sanctions for willful violation of, attempted violation of, or conspiracy to violate, any regulation issued under sections 161b, 161i, or 161o of the Act. For purposes of section 223, all the regulations in part 73 are issued under one or more of sections 161b, 161i, or 161o, except for the sections listed in paragraph (b) of this section.

(b) The regulations in part 73 that are not issued under sections 161b, 161i, or 161o for the purposes of section 223 are as follows: §§73.1, 73.2, 73.3, 73.4, 73.5, 73.6, 73.8, 73.25, 73.45, 73.75, 73.80, and 73.81.

(c)(1) No person without authorization may carry, transport, or otherwise introduce or cause to be introduced any dangerous weapon, explosive, or other dangerous instrument or material likely to produce substantial injury or damage to persons or property into or upon a protected facility or installation. Willful violations of this provision are punishable by the criminal penalties set forth in sections 229b and 229c of the Atomic Energy Act of 1954, as amended.

(2) As used in this section:

(i) ''Protected facility or installation'' means any production or utilization facility, high-level waste storage or disposal facility, independent spent fuel storage installation, uranium enrichment, uranium conversion, or nuclear fuel fabrication facility, but does not include those portions of such facilities that are not required under §73.75(b) of this part to be identified by notices posted at their pedestrian and vehicle entrances, and does not include facilities described in §73.75(c) of this part.

(ii) ''Without authorization'' means not authorized as part of one's official duties to carry the weapon, explosive, or other instrument or material;

(iii) ''Dangerous weapon'' includes any firearm, as defined in either 18 U.S.C. 921 or 26 U.S.C. 5845, or dangerous weapon, as defined in 18 U.S.C. 930;

(iv) ''Explosive'' means any explosive as defined in 18 U.S.C. 844(j).

(3) An item, such as a dangerous weapon, explosive, or other dangerous instrument or material, is considered to have been carried, transported, or otherwise introduced or caused to be introduced into or upon a protected facility or installation for purposes of paragraph (c)(1) of this section once the item has traveled past a notice posted pursuant to §73.75 of this part at a vehicle or pedestrian entrance to the protected facility, or once the item has entered the protected facility or installation at a location that is not a vehicle or pedestrian entrance to the facility, whether such entry is accomplished through, over, under, or around a fence, wall, floor, roof, or other structural barrier enclosing the protected facility or installation or by any other means.

(4) For all protected facilities or installations that do not possess special nuclear material, byproduct material, or source material as of the effective date of this rule, this provision shall take effect upon receipt of such material at the applicable facility or installation.

[57 FR 55079, Nov. 24, 1992, as amended at 74 FR 52674, Oct. 14, 2009]

APPENDIX A TO PART 73—U.S. NUCLEAR REGULATORY COMMISSION OFFICES AND CLASSIFIED MAILING ADDRESSES

	Address	Telephone (24 hour)	E-Mail
NRC Headquarters Operations Center	USNRC, Division of Incident Response Operations, Washington, DC 20555–0001.	(301) 816–5100, (301) 951–0550, (301) 816–5151 (fax).	*H001@nrc.gov*
Region I: Connecticut, Delaware, District of Columbia, Maine, Maryland, Massachusetts, New Hampshire, New Jersey, New York, Pennsylvania, Rhode Island, and Vermont	USNRC, Region I, 2100 Renaissance Boulevard, Suite 100, King of Prussia, PA 19406–2713.	(610) 337–5000, (800) 432–1156 TDD: (301) 415–5575.	*RidsRgn1MailCenter@nrc.gov*
Region II: Alabama, Florida, Georgia, Kentucky, North Carolina, Puerto Rico, South Carolina, Tennessee, Virginia, Virgin Islands, and West Virginia	USNRC, Region II, 245 Peachtree Center Avenue, NE., Suite 1200, Atlanta, GA 30303–1257.	(404) 997–4000, (800) 877–8510, TDD: (301) 415–5575.	*RidsRgn2Mail Center@nrc.gov*
Region III: Illinois, Indiana, Iowa, Michigan, Minnesota, Missouri, Ohio and Wisconsin	USNRC, Region III, 2443 Warrenville Road, Suite 210, Lisle, IL 60532–4352.	(630) 829–9500, (800) 522–3025, TDD: (301) 415–5575.	*RidsRgn3MailCenter@nrc.gov*
Region IV: Alaska, Arizona, Arkansas, California, Colorado, Hawaii, Idaho, Kansas, Louisiana, Mississippi, Montana, Nebraska, Nevada, New Mexico, North Dakota, Oklahoma, Oregon, South Dakota, Texas, Utah, Washington, Wyoming, and the U.S. territories and possessions in the Pacific	US NRC, Region IV, 1600 E. Lamar Blvd., Arlington, TX 76011–4511.	(817) 860–8100, (800) 952–9677, TDD: (301) 415–5575.	*RidsRgn4MailCenter@nrc.gov*

CLASSIFIED MAILING ADDRESSES

	Address
NRC Headquarters	U.S. NRC, Caller Box 2500, Rockville, MD 20852.
Region I	U.S. NRC, 475 Allendale Road, King of Prussia, PA 19406.
Region II	USNRC, P.O. Box 56267, Atlanta, GA 30343.
Region III	USNRC, Region III, 2443 Warrenville Road, Suite 210, Lisle, IL 60532–4352.
Region IV	US NRC, Region IV, 1600 E. Lamar Blvd., Arlington, TX 76011–4511.

I. Classified mail shall be transmitted in accordance with §95.39 of this chapter to the appropriate NRC classified mailing address listed in this appendix.

II. Classified documents may be hand delivered to the NRC to the appropriate NRC street address listed in this appendix. Hand delivered classified documents shall be transmitted in accordance with §95.39 of this chapter.

[68 FR 58820, Oct. 10, 2003, as amended at 71 FR 15012, Mar. 27, 2006; 73 FR 30460, May 28, 2008; 75 FR 21981, Apr. 27, 2010; 76 FR 72086, Nov. 22, 2011; 77 FR 39909, July 6, 2012; 79 FR 66606, Nov. 10, 2014; 82 FR 52825, Nov. 15, 2017]

APPENDIX B TO PART 73—GENERAL CRITERIA FOR SECURITY PERSONNEL

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INTRODUCTION

Applicants and power reactor licensees subject to the requirements of §73.55 shall comply only with the requirements of section VI of this appendix. All other licensees, applicants, or certificate holders shall comply only with sections I through V of this appendix.

Security personnel who are responsible for the protection of special nuclear material on site or in transit and for the protection of the facility or shipment vehicle against radiological sabotage should, like other elements of the physical security system, be required to meet minimum criteria to ensure that they will effectively perform their assigned security-related job duties. In order to ensure that those individuals responsible for security are properly equipped and qualified to execute the job duties prescribed for them, the NRC has developed general criteria that specify security personnel qualification requirements.

These general criteria establish requirements for the selection, training, equipping, testing, and qualification of individuals who will be responsible for protecting special nuclear materials, nuclear facilities, and nuclear shipments.

When required to have security personnel that have been trained, equipped, and qualified to perform assigned security job duties in accordance with the criteria in this appendix, the licensee must establish, maintain, and follow a plan that shows how the criteria will be met. The plan must be submitted to the NRC for approval and must be implemented within 30 days after approval by the NRC unless otherwise specified by the NRC in writing.

DEFINITIONS

Terms defined in parts 50, 70, and 73 of this chapter have the same meaning when used in this appendix.

CRITERIA

I. Employment suitability and qualification.

A. Suitability: 1. Prior to employment, or assignment to the security organization, an individual shall meet the following suitability criteria:

a. Educational development—Possess a high school diploma or pass an equivalent performance examination designed to measure basic job-related mathematical, language, and reasoning skills, ability, and knowledge, required to perform security job duties.

b. Felony convictions—Have no felony convictions involving the use of a weapon and no felony convictions that reflect on the individual's reliability.

2. Prior to employment or assignment to the security organization in an armed capacity, the individual, in addition to (a) and (b) above, must be 21 years of age or older.

B. Physical and mental qualifications. 1. Physical qualifications:

a. Individuals whose security tasks and job duties are directly associated with the effective implementation of the licensee physical security and contingency plans shall have no physical weaknesses or abnormalities that would adversely affect their performance of assigned security job duties.

b. In addition to a. above, guards, armed response personnel, armed escorts, and central alarm station operators shall successfully pass a physical examination administered by a licensed physician. The examination shall be designed to measure the individual's physical ability to perform assigned security job duties as identified in the licensee physical security and contingency plans. Armed personnel shall meet the following additional physical requirements:

(1) Vision: (a) For each individual, distant visual acuity in each eye shall be correctable to 20/30 (Snellen or equivalent) in the better eye and 20/40 in the other eye with eyeglasses or contact lenses. If uncorrected distance vision is not at least 20/40 in the better eye, the individual shall carry an extra pair of corrective lenses. Near visual acuity, corrected or uncorrected, shall be at least 20/40 in the better eye. Field of vision must be at least 70° horizontal meridian in each eye. The ability to distinguish red, green, and yellow colors is required. Loss of vision in one eye is disqualifying. Glaucoma shall be disqualifying, unless controlled by acceptable medical or surgical means, provided such medications as may be used for controlling glaucoma do

not cause undesirable side effects which adversely affect the individual's ability to perform assigned security job duties, and provided the visual acuity and field of vision requirements stated above are met. On-the-job evaluation shall be used for individuals who exhibit a mild color vision defect.

(b) Where corrective eyeglasses are required, they shall be of the safety glass type.

(c) The use of corrective eyeglasses or contact lenses shall not interfere with an individual's ability to effectively perform assigned security job duties during normal or emergency operations.

(2) Hearing: (a) Individuals shall have no hearing loss in the better ear greater than 30 decibels average at 500 Hz, 1,000 Hz, and 2,000 Hz with no level greater that 40 decibels at any one frequency (by ISO 389 ''Standard Reference Zero for the Calibration of Puritone Audiometer'' (1975) or ANSI S3.6–1969 (R. 1973) ''Specifications for Audiometers''). ISO 389 and ANSI S3.6–1969 have been approved for incorporation by reference by the Director of the Federal Register. A copy of each standard is available for inspection at the NRC Library, 11545 Rockville Pike, Rockville, Maryland 20852-2738.

(b) A hearing aid is acceptable provided suitable testing procedures demonstrate auditory acuity equivalent to the above stated requirement.

(c) The use of a hearing aid shall not decrease the effective performance of the individual's assigned security job duties during normal or emergency operations.

(3) Diseases—Individuals shall have no established medical history or medical diagnosis of epilepsy or diabetes, or, where such a condition exists, the individual shall provide medical evidence that the condition can be controlled with proper medication so that the individual will not lapse into a coma or unconscious state while performing assigned security job duties.

(4) Addiction—Individuals shall have no established medical history or medical diagnosis of habitual alcoholism or drug addiction, or, where such a condition has existed, the individual shall provide certified documentation of having completed a rehabilitation program which would give a reasonable degree of confidence that the individual would be capable of performing assigned security job duties.

(5) Other physical requirements—An individual who has been incapacitated due to a serious illness, injury, disease, or operation, which could interfere with the effective performance of assigned security job duties shall, prior to resumption of such duties, provide medical evidence of recovery and ability to perform such security job duties.

2. Mental qualifications: a. Individuals whose security tasks and job duties are directly associated with the effective implementation of the licensee physical security and contingency plans shall demonstrate mental alertness and the capability to exercise good judgment, implement instructions, assimilate assigned security tasks, and possess the acuity of senses and ability of expression sufficient to permit accurate communication by written, spoken, audible, visible, or other signals required by assigned job duties.

b. Armed individuals, and central alarm station operators, in addition to meeting the requirement stated in paragraph a. above, shall have no emotional instability that would interfere with the effective performance of assigned security job duties. The determination shall be made by a licensed psychologist or psychiatrist, or physician, or other person professionally trained to identify emotional instability.

c. The licensee shall arrange for continued observation of security personnel and for appropriate corrective measures by responsible supervisors for indications of emotional instability of individuals in the course of performing assigned security job duties. Identification of emotional instability by responsible supervisors shall be subject to verification by a licensed, trained person.

C. Medical examinations and physical fitness qualifications—Guards, armed response personnel, armed escorts and other armed security force members shall be given a medical examination including a determination and written certification by a licensed physician that there are no medical contraindications as disclosed by the medical examination to participation by the individual in physical fitness tests. Subsequent to this medical examination, guards, armed response personnel, armed escorts and other armed security force members shall demonstrate physical fitness for assigned security job duties by performing a practical physical exercise program within a specific time period. The exercise program performance objectives shall be described in the license training and qualifications plan and shall consider job-related functions such as strenuous activity, physical exertion, levels of stress, and exposure to the elements as they pertain to each individual's assigned security job duties for both normal and emergency operations. The physical fitness qualification of each guard, armed response person, armed escort, and other security force member shall be documented and attested to by a licensee security supervisor. The licensee shall retain this documentation as a record for three years from the date of each qualification.

D. Contract security personnel—Contract security personnel shall be required to meet the suitability, physical, and mental requirements as appropriate to their assigned security job duties in accordance with section I of this appendix.

E. Physical requalification—At least every 12 months, central alarm station operators shall be required to meet the physical requirements of B.1.b of this section, and guards, armed response personnel, and armed escorts shall be required to meet the physical requirements of paragraphs B.1.b (1) and (2), and C of this section. The licensee shall document each individual's physical requalification and shall retain this documentation of requalification as a record for three years from the date of each requalification.

F. Documentation—The results of suitability, physical, and mental qualifications data and test results must be documented by the licensee or the licensee's agent. The licensee or the agent shall retain this documentation as a record for three years from the date of obtaining and recording these results.

G. Nothing herein authorizes or requires a licensee to investigate into or judge the reading habits, political or religious beliefs, or attitudes on social, economic, or political issues of any person.

II. Training and qualifications.

A. Training requirements—Each individual who requires training to perform assigned security-related job tasks or job duties as identified in the licensee physical security or contingency plans shall, prior to assignment, be trained to perform these tasks and duties in accordance with the licensee or the licensee's agent's documented training and qualifications plan. The licensee or the agent shall maintain documentation of the current plan and retain this documentation of the plan as a record for three years after the close of period for which the licensee possesses the special nuclear material under each license for which the plan was developed and, if any portion of the plan is superseded, retain the material that is superseded for three years after each change.

B. Qualification requirements—Each person who performs security-related job tasks or job duties required to implement the licensee physical security or contingency plan shall, prior to being assigned to these tasks or duties, be qualified in accordance with the licensee's NRC-approved training and qualifications plan. The qualifications of each individual must be documented and attested by a licensee security supervisor. The licensee shall retain this documentation of each individual's qualifications as a record for three years after the employee ends employment in the security-related capacity and for three years after the close of period for which the licensee possesses the special nuclear material under each license, and superseded material for three years after each change.

C. Contract personnel—Contract personnel shall be trained, equipped, and qualified as appropriate to their assigned security-related job tasks or job duties, in accordance with sections II, III, IV, and V of this appendix. The qualifications of each individual must be documented and attested by a licensee security supervisor. The licensee shall retain this documentation of each individual's qualifications as a record for three years after the employee ends employment in the security-related capacity and for three years after the close of period for which the licensee possesses the special nuclear material under each license, and superseded material for three years after each change.

D. Security knowledge, skills, and abilities—Each individual assigned to perform the security related task identified in the licensee physical security or contingency plan shall demonstrate the required knowledge, skill, and ability in accordance with the specified standards for each task as stated in the NRC approved licensee training and qualifications plan. The areas of knowledge, skills, and abilities that shall be considered in the licensee's training and qualifications plan are as follows:

1. Protection of nuclear facilities, transport vehicles, and special nuclear material.
2. NRC requirements and guidance for physical security at nuclear facilities and for transportation.
3. The private security guard's role in providing physical protection for the nuclear industry.
4. The authority of private guards.
5. The use of nonlethal weapons.
6. The use of deadly force.
7. Power of arrest and authority to detain individuals.
8. Authority to search individuals and seize property.
9. Adversary group operations.
10. Motivation and objectives of adversary groups.
11. Tactics and force that might be used by adversary groups to achieve their objectives.
12. Recognition of sabotage related devices and equipment that might be used against the licensee's facility or shipment vehicle.
13. Facility security organization and operation.
14. Types of physical barriers.
15. Weapons, lock and key control system operation.
16. Location of SNM and/or vital areas within a facility.
17. Protected area security and vulnerability.
18. Types of alarm systems used.
19. Response and assessment to alarm annunciations and other indications of intrusion.
20. Familiarization with types of special nuclear material processed.
21. General concepts of fixed site security systems.
22. Vulnerabilities and consequences of theft of special nuclear material or radiological sabotage of a facility.

23. Protection of security system information.
24. Personal equipment use and operation for normal and contingency operations.
25. Surveillance and assessment systems and techniques.
26. Communications systems operation, fixed site.
27. Access control systems and operation for individuals, packages, and vehicles.
28. Contraband detection systems and techniques.
29. Barriers and other delay systems around material access or vital areas.
30. Exterior and interior alarm systems operation.
31. Duress alarm operation.
32. Alarm stations operation.
33. Response force organization.
34. Response force mission.
35. Response force operation.
36. Response force engagement.
37. Security command and control system during normal operation.
38. Security command and control system during contingency operation.
39. Transportation systems security organization and operation.
40. Types of SNM transport vehicles.
41. Types of SNM escort vehicles.
42. Modes of transportation for SNM.
43. Road transport security system command and control structure.
44. Use of weapons.
45. Communications systems operation for transportation, shipment to control center and intraconvoy.
46. Vulnerabilities and consequences of theft of special nuclear material or radiological sabotage of a transport vehicle.
47. Protection of transport system security information.
48. Control of area around transport vehicle.
49. Normal convoy techniques and operations.
50. Familiarization with types of special nuclear materials shipped.
51. Fixed post station operations.
52. Access control system operation.
53. Search techniques and systems for individuals, packages and vehicles.
54. Escort and patrol responsibilities and operation.
55. Contengency response to confirmed intrusion or attempted intrusion.
56. Security system operation after component failure.
57. Fixed site security information protection.
58. Security coordination with local law enforcement agencies.
59. Security and situation reporting, documentation and report writing.
60. Contingency duties.
61. Self defense.
62. Use of and defenses against incapacitating agents.
63. Security equipment testing.
64. Contingency procedures.
65. Night vision devices and systems.
66. Mechanics of detention.
67. Basic armed and unarmed defensive tactics.
68. Response force deployment.
69. Security alert procedures.
70. Security briefing procedures.
71. Response force tactical movement.
72. Response force withdrawal.
73. Reponse force use of support fire.
74. Response to bomb and attack threats.
75. Response to civil disturbances (e.g., strikes, demonstrators).
76. Response to confirmed attempted theft of special nuclear material and/or radiological sabotage of facilities.
77. Response to hostage situations.
78. Site specific armed tactical procedures and operation.
79. Security response to emergency situations other than security incidents.
80. Basic transportation defensive response tactics.
81. Armed escort deployment.
82. Armed escort adversary engagement.
83. Armed escort formations.
84. Armed escort use of weapons fire (tactical and combat).
85. Armed escort and shipment movement under fire.
86. Tactical convoying techniques and operations.
87. Armed escort tactical exercises.
88. Armed escort response to bomb and attack threats.
89. Verification of shipment documentation and contents.
90. Continuous surveillance of shipment vehicle.
91. Normal and contingency operation for shipment mode transfer.
92. Armed personnel procedures and operation during temporary storage between mode transfers of shipments.
93. Armed escort threat assessment and response.
94. System for and operation of shipment vehicle lock and key control.
95. Techniques and procedures for isolation of shipment vehicle during a contingency situation.
96. Transportation coordination with local law enforcement agencies.
97. Procedures for verification of shipment locks and seals.
98. Transportation security and situation reporting, documentation, and report writing.
99. Procedures for shipment delivery and pickup.
100. Transportation security system for escort by road, rail, air and sea.

E. Requalification—Security personnel shall be requalified at least every 12 months to perform assigned security-related job tasks and duties for both normal and contingency operations. Requalification shall be in accordance with the NRC-approved licensee training and qualifications plan. The results of requalification must be documented and attested by a licensee security supervisor. The licensee shall retain this documentation of each individual's requalification as a record for three years from the date of each requalification.

III. Weapons training.

A. Guards, armed response personnel and armed escorts requiring weapons training to perform assigned security related job tasks or job duties shall be trained in accordance with the licensees' documented weapons training programs. Each individual shall be proficient in the use of his assigned weapon(s) and shall meet prescribed standards in the following areas:

1. Mechanical assembly, dissasembly, range penetration capability of weapon, and bullseye firing.
2. Weapons cleaning and storage.
3. Combat firing, day and night.
4. Safe weapons handling.
5. Clearing, loading, unloading, and reloading.
6. When to draw and point a weapon.
7. Rapid fire techniques.
8. Close quarter firing.
9. Stress firing.
10. Zeroing assigned weapon(s).

IV. Weapons qualification and requalification program.

Qualification firing for the handgun and the rifle must be for daylight firing, and each individual shall perform night firing for familiarization with assigned weapon(s). The results of weapons qualification and requalification must be documented by the licensee or the licensee's agent. Each individual shall be requalified at least every 12 months. The licensee shall retain this documentation of each qualification and requalification as a record for three years from the date of the qualification or requalification, as appropriate.

A. Handgun—Guards, armed escorts and armed response personnel shall qualify with a revolver or semiautomatic pistol firing the national police course, or an equivalent nationally recognized course. Qualifying score shall be an accumulated total of 70 percent of the maximum obtainable score.

B. Semiautomatic Rifle—Guards, armed escorts and armed response personnel, assigned to use the semiautomatic rifle by the licensee training and qualifications plan, shall qualify with a semiautomatic rifle by firing the 100-yard course of fire specified in section 17.5(1) of the National Rifle Association, High Power Rifle Rules book (effective March 15, 1976),[1] or a nationally recognized equivalent course of fire. Targets used shall be as stated in section 17.5 for the 100-yard course. Time limits for individuals shall be as specified in section 8.2 of the NRA rule book, regardless of the course fired. Qualifying score shall be an accumulated total of 80 percent of the maximum obtainable score.

C. Shotgun—Guards, armed escorts, and armed response personnel assigned to use the 12 gauge shotgun by the licensee training and qualifications plan shall qualify with a full choke or improved modified choke 12 gauge shotgun firing the following course:

Range	Position	No. Rounds [1]	Target [2]
15 yds	Hip fire point	4	B–27
25 yds	Shoulder	4	B–27

[1] The 4 rounds shall be fired at 4 separate targets within 10 seconds using 00 gauge (9 pellet) shotgun shells.

[2] As set forth by the National Rifle Association (NRA) in its official rules and regulations, "NRA Target Manufacturers Index," December 1976. The Index has been approved for incorporation by reference by the Director of the Federal Register. A copy of the index is available for inspection at the NRC Library, 11545 Rockville Pike, Rockville, Maryland 20852-2738.

To qualify the individual shall be required to place 50 percent of all pellets (36 pellets) within the black silhouette.

D. Requalification—Individuals shall be weapons requalified at least every 12 months in accordance with the NRC approved licensee training and qualifications plan, and in accordance with the requirements stated in A, B, and C of this section.

V. Guard, armed response personnel, and armed escort equipment.

A. Fixed Site—Fixed site guards and armed response personnel shall either be equipped with or have available the following security equipment appropriate to the individual's assigned contingency security related tasks or job duties as described in the licensee physical security and contingency plans:

1. Semiautomatic rifles with following nominal minimum specifications:
(a) .223 caliber.
(b) Muzzle velocity, 1980 ft/sec.
(c) Muzzle energy, 955 foot-pounds.
(d) Magazine or clip load of 10 rounds.
(e) Magazine reload, <10 seconds.
(f) Operable in any environment in which it will be used.

2. 12 gauge shotguns with the following capabilities:
(a) 4 round pump or semiautomatic.
(b) Operable in any environment in which it will be used.
(c) Full or modified choke.

[1] Copies of the "NRA High Power Rifle Rules" may be examined at, or obtained from, the National Rifle Association, 1600 Rhode Island Avenue NW., Washington, DC 20036.

3. Semiautomatic pistols or revolvers with the following nominal minimum specifications:

(a) .354 caliber.

(b) Muzzle energy, 250 foot-pounds.

(c) Full magazine or cylinder reload capability <6 seconds.

(d) Muzzle velocity, 850 ft/sec.

(e) Full cylinder or magazine capacity, 6 rounds.

(f) Operable in any environment in which it will be used.

4. Ammunition:

(a) For each assigned weapon as appropriate to the individual's assigned contingency security job duties and as readily available as the weapon:

(1) 18 rounds per handgun.

(2) 100 rounds per semiautomatic rifle.

(3) 12 rounds each per shotgun (00 gauge and slug).

(b) Ammunition available on site—two (2) times the amount stated in (a) above for each weapon.

5. Personal equipment to be readily available for individuals whose assigned contingency security job duties, as described in the licensee physical security and contingency plans, warrant such equipment:

(a) Helmet, combat.

(b) Gas mask, full face.

(c) Body armor (bullet-resistant vest).

(d) Flashlights and batteries.

(e) Baton.

(f) Handcuffs.

(g) Ammunition/equipment belt.

6. Binoculars.

7. Night vision aids, *i.e.*, hand-fired illumination flares or equivalent.

8. Tear gas or other nonlethal gas.

9. Duress alarms.

10. Two-way portable radios (handi-talkie) 2 channels minimum, 1 operating and 1 emergency.

B. Transportation—Armed escorts shall either be equipped with or have readily available the following security equipment appropriate to the individual's assigned contingency security related tasks or job duties, as described in the licensee physical security and contingency plans:

1. Semiautomatic rifles with the following nominal minimum specifications:

(a) .223 caliber.

(b) Muzzle velocity, 1,980 ft/sec.

(c) Muzzle energy, 955 foot-pounds.

(d) Magazine or clip of 10 rounds.

(e) Reload capability, 10 seconds.

(f) Operable in any environment in which it will be used.

2. 12 gauge shotguns.

(a) 4 round pump or semiautomatic.

(b) Operable in any environment in which it will be used.

(c) Full or modified choke.

3. Semiautomatic pistols or revolvers with the following nominal minimum specifications:

(a) .354 caliber.

(b) Muzzle energy, 250 foot-pounds.

(c) Full magazine or cylinder reload capability 6 seconds.

(d) Muzzle velocity, 850 ft/sec.

(e) Full cylinder or magazine capacity, 6 rounds.

(f) Operable in any environment in which it will be used.

4. Ammunition for each shipment.

(a) For each assigned weapon as appropriate to the individual's assigned contingency security job duties and as readily available as the weapon:

(1) 36 rounds per handgun.

(2) 120 rounds per semiautomatic rifle.

(3) 12 rounds each per shotgun (00 gauge and slug).

5. Escort vehicles, bullet resisting, equipped with communications systems, red flares, first aid kit, emergency tool kit, tire changing equipment, battery chargers for radios (where appropriate, for recharging portable radio batteries).

6. Personal equipment to be readily available for individuals whose assigned contingency security job duties, as described in the licensee physical security and contingency plans, warrant such equipment:

(a) Helmet, combat.

(b) Gas mask, full face.

(c) Body armor (bullet-resistant vest).

(d) Flashlights and batteries.

(e) Baton.

(f) Ammunition/equipment belt.

(g) Pager/duress alarms.

7. Binoculars.

8. Night vision aids, *i.e.*, hand-fired illumination flares or equivalent.

9. Tear gas or other nonlethal gas.

VI. Nuclear Power Reactor Training and Qualification Plan for Personnel Performing Security Program Duties

A. General Requirements and Introduction

1. The licensee shall ensure that all individuals who are assigned duties and responsibilities required to prevent significant core damage and spent fuel sabotage, implement the Commission-approved security plans, licensee response strategy, and implementing procedures, meet minimum training and qualification requirements to ensure each individual possesses the knowledge, skills, and abilities required to effectively perform the assigned duties and responsibilities.

2. To ensure that those individuals who are assigned to perform duties and responsibilities required for the implementation of the Commission-approved security plans, licensee response strategy, and implementing procedures are properly suited, trained, equipped, and qualified to perform their assigned duties and responsibilities, the Commission has developed minimum training

and qualification requirements that must be implemented through a Commission-approved training and qualification plan.

3. The licensee shall establish, maintain, and follow a Commission-approved training and qualification plan, describing how the minimum training and qualification requirements set forth in this appendix will be met, to include the processes by which all individuals, will be selected, trained, equipped, tested, and qualified.

4. Each individual assigned to perform security program duties and responsibilities required to effectively implement the Commission-approved security plans, licensee protective strategy, and the licensee implementing procedures, shall demonstrate the knowledge, skills, and abilities required to effectively perform the assigned duties and responsibilities before the individual is assigned the duty or responsibility.

5. The licensee shall ensure that the training and qualification program simulates, as closely as practicable, the specific conditions under which the individual shall be required to perform assigned duties and responsibilities.

6. The licensee may not allow any individual to perform any security function, assume any security duties or responsibilities, or return to security duty, until that individual satisfies the training and qualification requirements of this appendix and the Commission-approved training and qualification plan, unless specifically authorized by the Commission.

7. Annual requirements must be scheduled at a nominal twelve (12) month periodicity. Annual requirements may be completed up to three (3) months before or three (3) months after the scheduled date. However, the next annual training must be scheduled twelve (12) months from the previously scheduled date rather than the date the training was actually completed.

B. Employment Suitability and Qualification

1. Suitability.

(a) Before employment, or assignment to the security organization, an individual shall:

(1) Possess a high school diploma or pass an equivalent performance examination designed to measure basic mathematical, language, and reasoning skills, abilities, and knowledge required to perform security duties and responsibilities;

(2) Have attained the age of 21 for an armed capacity or the age of 18 for an unarmed capacity; and

(3) Not have any felony convictions that reflect on the individual's reliability.

(4) Individuals in an armed capacity, would not be disqualified from possessing or using firearms or ammunition in accordance with applicable state or Federal law, to include 18 U.S.C. 922. Licensees shall use information that has been obtained during the completion of the individual's background investigation for unescorted access to determine suitability.

(b) The qualification of each individual to perform assigned duties and responsibilities must be documented by a qualified training instructor and attested to by a security supervisor.

2. Physical qualifications.

(a) General physical qualifications.

(1) Individuals whose duties and responsibilities are directly associated with the effective implementation of the Commission-approved security plans, licensee protective strategy, and implementing procedures, may not have any physical conditions that would adversely affect their performance of assigned security duties and responsibilities.

(2) Armed and unarmed individuals assigned security duties and responsibilities shall be subject to a physical examination designed to measure the individual's physical ability to perform assigned duties and responsibilities as identified in the Commission-approved security plans, licensee protective strategy, and implementing procedures.

(3) This physical examination must be administered by a licensed health professional with the final determination being made by a licensed physician to verify the individual's physical capability to perform assigned duties and responsibilities.

(4) The licensee shall ensure that both armed and unarmed individuals who are assigned security duties and responsibilities identified in the Commission-approved security plans, the licensee protective strategy, and implementing procedures, meet the following minimum physical requirements, as required to effectively perform their assigned duties.

(b) Vision.

(1) For each individual, distant visual acuity in each eye shall be correctable to 20/30 (Snellen or equivalent) in the better eye and 20/40 in the other eye with eyeglasses or contact lenses.

(2) Near visual acuity, corrected or uncorrected, shall be at least 20/40 in the better eye.

(3) Field of vision must be at least 70 degrees horizontal meridian in each eye.

(4) The ability to distinguish red, green, and yellow colors is required.

(5) Loss of vision in one eye is disqualifying.

(6) Glaucoma is disqualifying, unless controlled by acceptable medical or surgical means, provided that medications used for controlling glaucoma do not cause undesirable side effects which adversely affect the individual's ability to perform assigned security duties, and provided the visual acuity and field of vision requirements stated previously are met.

(7) On-the-job evaluation must be used for individuals who exhibit a mild color vision defect.

(8) If uncorrected distance vision is not at least 20/40 in the better eye, the individual shall carry an extra pair of corrective lenses in the event that the primaries are damaged. Corrective eyeglasses must be of the safety glass type.

(9) The use of corrective eyeglasses or contact lenses may not interfere with an individual's ability to effectively perform assigned duties and responsibilities during normal or emergency conditions.

(c) Hearing.

(1) Individuals may not have hearing loss in the better ear greater than 30 decibels average at 500 Hz, 1,000 Hz, and 2,000 Hz with no level greater than 40 decibels at any one frequency.

(2) A hearing aid is acceptable provided suitable testing procedures demonstrate auditory acuity equivalent to the hearing requirement.

(3) The use of a hearing aid may not decrease the effective performance of the individual's assigned security duties during normal or emergency operations.

(d) Existing medical conditions.

(1) Individuals may not have an established medical history or medical diagnosis of existing medical conditions which could interfere with or prevent the individual from effectively performing assigned duties and responsibilities.

(2) If a medical condition exists, the individual shall provide medical evidence that the condition can be controlled with medical treatment in a manner which does not adversely affect the individual's fitness-for-duty, mental alertness, physical condition, or capability to otherwise effectively perform assigned duties and responsibilities.

(e) Addiction. Individuals may not have any established medical history or medical diagnosis of habitual alcoholism or drug addiction, or, where this type of condition has existed, the individual shall provide certified documentation of having completed a rehabilitation program which would give a reasonable degree of confidence that the individual would be capable of effectively performing assigned duties and responsibilities.

(f) Other physical requirements. An individual who has been incapacitated due to a serious illness, injury, disease, or operation, which could interfere with the effective performance of assigned duties and responsibilities shall, before resumption of assigned duties and responsibilities, provide medical evidence of recovery and ability to perform these duties and responsibilities.

3. Psychological qualifications.

(a) Armed and unarmed individuals shall demonstrate the ability to apply good judgment, mental alertness, the capability to implement instructions and assigned tasks, and possess the acuity of senses and ability of expression sufficient to permit accurate communication by written, spoken, audible, visible, or other signals required by assigned duties and responsibilities.

(b) A licensed psychologist, psychiatrist, or physician trained in part to identify emotional instability shall determine whether armed members of the security organization and alarm station operators in addition to meeting the requirement stated in paragraph (a) of this section, have no emotional instability that would interfere with the effective performance of assigned duties and responsibilities.

(c) A person professionally trained to identify emotional instability shall determine whether unarmed individuals in addition to meeting the requirement stated in paragraph (a) of this section, have no emotional instability that would interfere with the effective performance of assigned duties and responsibilities.

4. Medical examinations and physical fitness qualifications.

(a) Armed members of the security organization shall be subject to a medical examination by a licensed physician, to determine the individual's fitness to participate in physical fitness tests.

(1) The licensee shall obtain and retain a written certification from the licensed physician that no medical conditions were disclosed by the medical examination that would preclude the individual's ability to participate in the physical fitness tests or meet the physical fitness attributes or objectives associated with assigned duties.

(b) Before assignment, armed members of the security organization shall demonstrate physical fitness for assigned duties and responsibilities by performing a practical physical fitness test.

(1) The physical fitness test must consider physical conditions such as strenuous activity, physical exertion, levels of stress, and exposure to the elements as they pertain to each individual's assigned security duties for both normal and emergency operations and must simulate site specific conditions under which the individual will be required to perform assigned duties and responsibilities.

(2) The licensee shall describe the physical fitness test in the Commission-approved training and qualification plan.

(3) The physical fitness test must include physical attributes and performance objectives which demonstrate the strength, endurance, and agility, consistent with assigned duties in the Commission-approved security plans, licensee protective strategy, and implementing procedures during normal and emergency conditions.

(4) The physical fitness qualification of each armed member of the security organization must be documented by a qualified

training instructor and attested to by a security supervisor.

5. Physical requalification.

(a) At least annually, armed and unarmed individuals shall be required to demonstrate the capability to meet the physical requirements of this appendix and the licensee training and qualification plan.

(b) The physical requalification of each armed and unarmed individual must be documented by a qualified training instructor and attested to by a security supervisor.

C. Duty Training

1. Duty training and qualification requirements. All personnel who are assigned to perform any security-related duty or responsibility shall be trained and qualified to perform assigned duties and responsibilities to ensure that each individual possesses the minimum knowledge, skills, and abilities required to effectively carry out those assigned duties and responsibilities.

(a) The areas of knowledge, skills, and abilities that are required to perform assigned duties and responsibilities must be identified in the licensee's Commission-approved training and qualification plan.

(b) Each individual who is assigned duties and responsibilities identified in the Commission-approved security plans, licensee protective strategy, and implementing procedures shall, before assignment:

(1) Be trained to perform assigned duties and responsibilities in accordance with the requirements of this appendix and the Commission-approved training and qualification plan.

(2) Meet the minimum qualification requirements of this appendix and the Commission-approved training and qualification plan.

(3) Be trained and qualified in the use of all equipment or devices required to effectively perform all assigned duties and responsibilities.

2. On-the-job training.

(a) The licensee training and qualification program must include on-the-job training performance standards and criteria to ensure that each individual demonstrates the requisite knowledge, skills, and abilities needed to effectively carry-out assigned duties and responsibilities in accordance with the Commission-approved security plans, licensee protective strategy, and implementing procedures, before the individual is assigned the duty or responsibility.

(b) In addition to meeting the requirement stated in paragraph C.2.(a) of this appendix, before assignment, individuals (e.g., response team leaders, alarm station operators, armed responders, and armed security officers designated as a component of the protective strategy) assigned duties and responsibilities to implement the Safeguards Contingency Plan shall complete a minimum of 40 hours of on-the-job training to demonstrate their ability to effectively apply the knowledge, skills, and abilities required to effectively perform assigned *contingency* duties and responsibilities in accordance with the approved safeguards contingency plan, other security plans, licensee protective strategy, and implementing procedures. On-the-job training must be documented by a qualified training instructor and attested to by a security supervisor.

(c) On-the-job training for contingency activities and drills must include, but is not limited to, hands-on application of knowledge, skills, and abilities related to:

(1) Response team duties.

(2) Use of force.

(3) Tactical movement.

(4) Cover and concealment.

(5) Defensive positions.

(6) Fields-of-fire.

(7) Re-deployment.

(8) Communications (primary and alternate).

(9) Use of assigned equipment.

(10) Target sets.

(11) Table top drills.

(12) Command and control duties.

(13) Licensee Protective Strategy.

3. Performance Evaluation Program.

(a) Licensees shall develop, implement and maintain a Performance Evaluation Program that is documented in procedures which describes how the licensee will demonstrate and assess the effectiveness of their onsite physical protection program and protective strategy, including the capability of the armed response team to carry out their assigned duties and responsibilities during safeguards contingency events. The Performance Evaluation Program and procedures shall be referenced in the licensee's Training and Qualifications Plan.

(b) The Performance Evaluation Program shall include procedures for the conduct of tactical response drills and force-on-force exercises designed to demonstrate and assess the effectiveness of the licensee's physical protection program, protective strategy and contingency event response by all individuals with responsibilities for implementing the safeguards contingency plan.

(c) The licensee shall conduct tactical response drills and force-on-force exercises in accordance with Commission-approved security plans, licensee protective strategy, and implementing procedures.

(d) Tactical response drills and force-on-force exercises must be designed to challenge the site protective strategy against elements of the design basis threat and ensure each participant assigned security duties and responsibilities identified in the Commission-approved security plans, the licensee protective strategy, and implementing procedures demonstrate the requisite knowledge, skills, and abilities.

(e) Tactical response drills, force-on-force exercises, and associated contingency response training shall be conducted under conditions that simulate, as closely as practicable, the site-specific conditions under which each member will, or may be, required to perform assigned duties and responsibilities.

(f) The scope of tactical response drills conducted for training purposes shall be determined by the licensee and must address site-specific, individual or programmatic elements, and may be limited to specific portions of the site protective strategy.

(g) Each tactical response drill and force-on-force exercise shall include a documented post-exercise critique in which participants identify failures, deficiencies or other findings in performance, plans, equipment or strategies.

(h) Licensees shall document scenarios and participants for all tactical response drills and annual force-on-force exercises conducted.

(i) Findings, deficiencies and failures identified during tactical response drills and force-on-force exercises that adversely affect or decrease the effectiveness of the protective strategy and physical protection program shall be entered into the licensee's corrective action program to ensure that timely corrections are made to the appropriate program areas.

(j) Findings, deficiencies and failures associated with the onsite physical protection program and protective strategy shall be protected as necessary in accordance with the requirements of 10 CFR 73.21.

(k) For the purpose of tactical response drills and force-on-force exercises, licensees shall:

(1) Use no more than the total number of armed responders and armed security officers documented in the security plans.

(2) Minimize the number and effects of artificialities associated with tactical response drills and force-on-force exercises.

(3) Implement the use of systems or methodologies that simulate the realities of armed engagement through visual and audible means, and reflect the capabilities of armed personnel to neutralize a target through the use of firearms.

(4) Ensure that each scenario used provides a credible, realistic challenge to the protective strategy and the capabilities of the security response organization.

(l) The Performance Evaluation Program must be designed to ensure that:

(1) Each member of each shift who is assigned duties and responsibilities required to implement the safeguards contingency plan and licensee protective strategy participates in at least one (1) tactical response drill on a quarterly basis and one (1) force-on-force exercise on an annual basis. Force-on-force exercises conducted to satisfy the NRC triennial evaluation requirement can be used to satisfy the annual force-on-force requirement for the personnel that participate in the capacity of the security response organization.

(2) The mock adversary force replicates, as closely as possible, adversary characteristics and capabilities of the design basis threat described in 10 CFR 73.1(a)(1), and is capable of exploiting and challenging the licensees protective strategy, personnel, command and control, and implementing procedures.

(3) Protective strategies can be evaluated and challenged through the conduct of tactical response tabletop demonstrations.

(4) Drill and exercise controllers are trained and qualified to ensure that each controller has the requisite knowledge and experience to control and evaluate exercises.

(5) Tactical response drills and force-on-force exercises are conducted safely and in accordance with site safety plans.

(m) Scenarios.

(1) Licensees shall develop and document multiple scenarios for use in conducting quarterly tactical response drills and annual force-on-force exercises.

(2) Licensee scenarios must be designed to test and challenge any components or combination of components, of the onsite physical protection program and protective strategy.

(3) Each scenario must use a unique target set or target sets, and varying combinations of adversary equipment, strategies, and tactics, to ensure that the combination of all scenarios challenges every component of the onsite physical protection program and protective strategy to include, but not limited to, equipment, implementing procedures, and personnel.

D. Duty Qualification and Requalification

1. Qualification demonstration.

(a) Armed and unarmed individuals shall demonstrate the required knowledge, skills, and abilities to carry out assigned duties and responsibilities as stated in the Commission-approved security plans, licensee protective strategy, and implementing procedures.

(b) This demonstration must include written exams and hands-on performance demonstrations.

(1) Written Exams. The written exams must include those elements listed in the Commission-approved training and qualification plan and shall require a minimum score of 80 percent to demonstrate an acceptable understanding of assigned duties and responsibilities, to include the recognition of potential tampering involving both safety and security equipment and systems.

(2) Hands-on Performance Demonstrations. Armed and unarmed individuals shall demonstrate hands-on performance for assigned duties and responsibilities by performing a practical hands-on demonstration for required tasks. The hands-on demonstration

must ensure that theory and associated learning objectives for each required task are considered and each individual demonstrates the knowledge, skills, and abilities required to effectively perform the task.

(3) Annual Written Exam. Armed individuals shall be administered an annual written exam that demonstrates the required knowledge, skills, and abilities to carry out assigned duties and responsibilities as an armed member of the security organization. The annual written exam must include those elements listed in the Commission-approved training and qualification plan and shall require a minimum score of 80 percent to demonstrate an acceptable understanding of assigned duties and responsibilities.

(c) Upon request by an authorized representative of the Commission, any individual assigned to perform any security-related duty or responsibility shall demonstrate the required knowledge, skills, and abilities for each assigned duty and responsibility, as stated in the Commission-approved security plans, licensee protective strategy, or implementing procedures.

2. Requalification.

(a) Armed and unarmed individuals shall be requalified at least annually in accordance with the requirements of this appendix and the Commission-approved training and qualification plan.

(b) The results of requalification must be documented by a qualified training instructor and attested by a security supervisor.

E. Weapons Training

1. General firearms training.

(a) Armed members of the security organization shall be trained and qualified in accordance with the requirements of this appendix and the Commission-approved training and qualification plan.

(b) Firearms instructors.

(1) Each armed member of the security organization shall be trained and qualified by a certified firearms instructor for the use and maintenance of each assigned weapon to include but not limited to, marksmanship, assembly, disassembly, cleaning, storage, handling, clearing, loading, unloading, and reloading, for each assigned weapon.

(2) Firearms instructors shall be certified from a national or state recognized entity.

(3) Certification must specify the weapon or weapon type(s) for which the instructor is qualified to teach.

(4) Firearms instructors shall be recertified in accordance with the standards recognized by the certifying national or state entity, but in no case shall recertification exceed three (3) years.

(c) Annual firearms familiarization. The licensee shall conduct annual firearms familiarization training in accordance with the Commission-approved training and qualification plan.

(d) The Commission-approved training and qualification plan shall include, but is not limited to, the following areas:

(1) Mechanical assembly, disassembly, weapons capabilities and fundamentals of marksmanship.

(2) Weapons cleaning and storage.

(3) Combat firing, day and night.

(4) Safe weapons handling.

(5) Clearing, loading, unloading, and reloading.

(6) Firing under stress.

(7) Zeroing duty weapon(s) and weapons sighting adjustments.

(8) Target identification and engagement.

(9) Weapon malfunctions.

(10) Cover and concealment.

(11) Weapon familiarization.

(e) The licensee shall ensure that each armed member of the security organization is instructed on the use of deadly force as authorized by applicable state law.

(f) Armed members of the security organization shall participate in weapons range activities on a nominal four (4) month periodicity. Performance may be conducted up to five (5) weeks before, to five (5) weeks after, the scheduled date. The next scheduled date must be four (4) months from the originally scheduled date.

F. Weapons Qualification and Requalification Program

1. General weapons qualification requirements.

(a) Qualification firing must be accomplished in accordance with Commission requirements and the Commission-approved training and qualification plan for assigned weapons.

(b) The results of weapons qualification and requalification must be documented and retained as a record.

2. Tactical weapons qualification. The licensee Training and Qualification Plan must describe the firearms used, the firearms qualification program, and other tactical training required to implement the Commission-approved security plans, licensee protective strategy, and implementing procedures. Licensee developed tactical qualification and re-qualification courses must describe the performance criteria needed to include the site specific conditions (such as lighting, elevation, fields-of-fire) under which assigned personnel shall be required to carry-out their assigned duties.

3. Firearms qualification courses. The licensee shall conduct the following qualification courses for each weapon used.

(a) Annual daylight qualification course. Qualifying score must be an accumulated total of 70 percent with handgun and shotgun, and 80 percent with semiautomatic rifle and/or enhanced weapons, of the maximum obtainable target score.

(b) Annual night fire qualification course. Qualifying score must be an accumulated

total of 70 percent with handgun and shotgun, and 80 percent with semiautomatic rifle and/or enhanced weapons, of the maximum obtainable target score.

(c) Annual tactical qualification course. Qualifying score must be an accumulated total of 80 percent of the maximum obtainable score.

4. Courses of fire.

(a) Handgun. Armed members of the security organization, assigned duties and responsibilities involving the use of a revolver or semiautomatic pistol shall qualify in accordance with standards established by a law enforcement course, or an equivalent nationally recognized course.

(b) Semiautomatic rifle. Armed members of the security organization, assigned duties and responsibilities involving the use of a semiautomatic rifle shall qualify in accordance with the standards established by a law enforcement course, or an equivalent nationally recognized course.

(c) Shotgun. Armed members of the security organization, assigned duties and responsibilities involving the use of a shotgun shall qualify in accordance with standards established by a law enforcement course, or an equivalent nationally recognized course.

(d) Enhanced weapons. Armed members of the security organization, assigned duties and responsibilities involving the use of any weapon or weapons not described previously shall qualify in accordance with applicable standards established by a law enforcement course or an equivalent nationally recognized course for these weapons.

5. Firearms requalification.

(a) Armed members of the security organization shall be re-qualified for each assigned weapon at least annually in accordance with Commission requirements and the Commission-approved training and qualification plan, and the results documented and retained as a record.

(b) Firearms requalification must be conducted using the courses of fire outlined in paragraphs F.2, F.3, and F.4 of this section.

G. Weapons, Personal Equipment and Maintenance

1. Weapons. The licensee shall provide armed personnel with weapons that are capable of performing the function stated in the Commission-approved security plans, licensee protective strategy, and implementing procedures.

2. Personal equipment.

(a) The licensee shall ensure that each individual is equipped or has ready access to all personal equipment or devices required for the effective implementation of the Commission-approved security plans, licensee protective strategy, and implementing procedures.

(b) The licensee shall provide armed security personnel, required for the effective implementation of the Commission-approved Safeguards Contingency Plan and implementing procedures, at a minimum, but is not limited to, the following:

(1) Gas mask, full face.

(2) Body armor (bullet-resistant vest).

(3) Ammunition/equipment belt.

(4) Two-way portable radios, 2 channels minimum, 1 operating and 1 emergency.

(c) Based upon the licensee protective strategy and the specific duties and responsibilities assigned to each individual, the licensee should provide, as appropriate, but is not limited to, the following.

(1) Flashlights and batteries.

(2) Baton or other non-lethal weapons.

(3) Handcuffs.

(4) Binoculars.

(5) Night vision aids (e.g., goggles, weapons sights).

(6) Hand-fired illumination flares or equivalent.

(7) Duress alarms.

3. Maintenance.

(a) Firearms maintenance program. Each licensee shall implement a firearms maintenance and accountability program in accordance with the Commission regulations and the Commission-approved training and qualification plan. The program must include:

(1) Semiannual test firing for accuracy and functionality.

(2) Firearms maintenance procedures that include cleaning schedules and cleaning requirements.

(3) Program activity documentation.

(4) Control and accountability (weapons and ammunition).

(5) Firearm storage requirements.

(6) Armorer certification.

H. Records

1. The licensee shall retain all reports, records, or other documentation required by this appendix in accordance with the requirements of § 73.55(q).

2. The licensee shall retain each individual's initial qualification record for three (3) years after termination of the individual's employment and shall retain each re-qualification record for three (3) years after it is superseded.

3. The licensee shall document data and test results from each individual's suitability, physical, and psychological qualification and shall retain this documentation as a record for three (3) years from the date of obtaining and recording these results.

I. Reviews

The licensee shall review the Commission-approved training and qualification program in accordance with the requirements of § 73.55(m).

J. Definitions

Terms defined in parts 50, 70, and 73 of this chapter have the same meaning when used in this appendix.

[43 FR 37426, Aug. 23, 1978, as amended at 46 FR 2026, Jan. 8, 1981; 53 FR 405, Jan. 7, 1988; 53 FR 19261, May 27, 1988; 57 FR 33432, July 29, 1992; 57 FR 61787, Dec. 29, 1992; 59 FR 50689, Oct. 5, 1994; 74 FR 13987, Mar. 27, 2009; 77 FR 39910, July 6, 2012; 84 FR 63569, Nov. 18, 2019]

APPENDIX C TO PART 73—LICENSEE SAFEGUARDS CONTINGENCY PLANS

I. SAFEGUARDS CONTINGENCY PLAN

Licensees, applicants, and certificate holders, with the exception of those who are subject to the requirements of §73.55 shall comply with the requirements of this section.

INTRODUCTION

A licensee safeguards contingency plan is a documented plan to give guidance to licensee personnel in order to accomplish specific defined objectives in the event of threats, thefts, or radiological sabotage relating to special nuclear material or nuclear facilities licensed under the Atomic Energy Act of 1954, as amended. An acceptable safeguards contingency plan must contain:

(1) A predetermined set of decisions and actions to satisfy stated objectives;

(2) An identification of the data, criteria, procedures, and mechanisms necessary to efficiently implement the decisions; and

(3) A stipulation of the individual, group, or organizational entity responsible for each decision and action.

The goals of licensee safeguards contingency plans for responding to threats, thefts, and radiological sabotage are:

(1) To organize the response effort at the licensee level;

(2) To provide predetermined, structured responses by licensees to safeguards contingencies;

(3) To ensure the integration of the licensee response with the responses by other entities; and

(4) To achieve a measurable performance in response capability.

Licensee safeguards contingency planning should result in organizing the licensee's resources in such a way that the participants will be identified, their several responsibilities specified, and the responses coordinated. The responses should be timely.

It is important to note that a licensee's safeguards contingency plan is intended to be complementary to any emergency plans developed under appendix E to part 50 of this chapter, §52.17 or §52.79, or to §70.22(i) of this chapter.

CONTENTS OF THE PLAN

Each licensee safeguards contingency plan shall include five categories of information:

1. Background
2. Generic Planning Base
3. Licensee Planning Base
4. Responsibility Matrix
5. Procedures

Although the implementing procedures (the fifth category of Plan information) are the culmination of the planning process, and therefore are an integral and important part of the safeguards contingency plan, they entail operating details subject to frequent changes. They need not be submitted to the Commission for approval, but will be inspected by NRC staff on a periodic basis. The licensee is responsible for ensuring that the implementing procedures reflect the information in the Responsibility Matrix, appropriately summarized and suitably presented for effective use by the responding entities.

The following paragraphs describe the contents of the safeguards contingency plan.

1. *Background*. Under the following topics, this category of information shall identify and define the perceived dangers and incidents with which the plan will deal and the general way it will handle these:

a. Perceived Danger—A statement of the perceived danger to the security of special nuclear material, licensee personnel, and licensee property, including covert diversion of special nuclear material, radiological sabotage, and overt attacks. The statement of perceived danger should conform with that promulgated by the Nuclear Regulatory Commission. (The statement contained in 10 CFR 73.55(a) or subsequent Commission statements will suffice.)

b. Purpose of the Plan—A discussion of the general aims and operational concepts underlying implementation of the plan.

c. Scope of the Plan—A delineation of the types of incidents covered in the plan.

d. Definitions—A list of terms and their definitions used in describing operational and technical aspects of the plan.

2. *Generic Planning Base*. Under the following topics, this category of information shall define the criteria for initiation and termination of responses to safeguards contingencies together with the specific decisions, actions, and supporting information needed to bring about such responses:

a. Identification of those events that will be used for signaling the beginning or aggravation of a safeguards contingency according to how they are perceived initially by licensee's personnel. Such events may include alarms or other indications signaling penetration of a protected area, vital area, or material access area; material control or material accounting indications of material missing or unaccounted for; or threat indications—either verbal, such as telephoned

threats, or implied, such as escalating civil disturbances.

b. Definition of the specific objective to be accomplished relative to each identified event. The objective may be to obtain a level of awareness about the nature and severity of the safeguards contingency in order to prepare for further responses; to establish a level of response preparedness; or to successfully nullify or reduce any adverse safeguards consequences arising from the contingency.

3. *Licensee Planning Base*. This category of information shall include the factors affecting contingency planning that are specific for each facility or means of transportation. To the extent that the topics are treated in adequate detail in the licensee's approved physical security plan, they may be incorporated by cross reference to that plan. The following topics should be addressed:

a. Licensee's Organizational Structure for Contingency Responses—A delineation of the organization's chain of command and delegation of authority as these apply to safeguards contingencies.

b. Physical Layout—(i) Fixed Sites—A description of the physical structures and their location on the site, and a description of the site in relation to nearby town, roads, and other environmental features important to the effective coordination of response operations. Particular emphasis should be placed on main and alternate entry routes for law-enforcement assistance forces and the location of control points for marshalling and coordinating response activities.

(ii) Transportation—A description of the vehicles, shipping routes, preplanned alternate routes, and related features.

c. Safeguards Systems Hardware—A description of the physical security and accounting system hardware that influence how the licensee will respond to an event. Examples of systems to be discussed are communications, alarms, locks, seals, area access, armaments, and surveillance.

d. Law Enforcement Assistance—A listing of available local law enforcement agencies and a description of their response capabilities and their criteria for response; and a discussion of working agreements or arrangements for communicating with these agencies.

e. Policy Constraints and Assumptions—A discussion of State laws, local ordinances, and company policies and practices that govern licensee response to incidents. Examples that may be discussed include:

Use of deadly force;
Use of employee property;
Use of off-duty employees;
Site security jurisdictional boundaries.

f. Administrative and Logistical Considerations—Descriptions of licensee practices that may have an influence on the response to safeguards contingency events. The considerations shall include a description of the procedures that will be used for ensuring that all equipment needed to effect a successful response to a safeguards contingency will be easily accessible, in good working order, and in sufficient supply to provide redundancy in case of equipment failure.

4. *Responsibility Matrix*. This category of information consists of detailed identification of the organizational entities responsible for each decision and action associated with specific responses to safeguards contingencies. For each initiating event, a tabulation shall be made for each response entity depicting the assignment of responsibilities for all decisions and actions to be taken in response to the initiating event. (Not all entities will have assigned responsibilities for any given initiating event.) The tabulations in the Responsibility Matrix shall provide an overall picture of the response actions and their interrelationships. Safeguards responsibilities shall be assigned in a manner that precludes conflict in duties or responsibilities that would prevent the execution of the plan in any safeguards contingency.

5. *Procedures*. In order to aid execution of the detailed plan as developed in the Responsibility Matrix, this category of information shall detail the actions to be taken and decisions to be made by each member or unit of the organization as planned in the Responsibility Matrix.

AUDIT AND REVIEW

(1) For nuclear facilities subject to the requirements of §73.46, the licensee shall provide for a review of the safeguards contingency plan at intervals not to exceed 12 months. For nuclear power reactor licensees subject to the requirements of §73.55, the licensee shall provide for a review of the safeguards contingency plan either:

(i) At intervals not to exceed 12 months, or

(ii) As necessary, based on an assessment by the licensee against performance indicators, and as soon as reasonably practicable after a change occurs in personnel, procedures, equipment, or facilities that potentially could adversely affect security, but no longer than 12 months after the change. In any case, each element of the safeguards contingency plan must be reviewed at least every 24 months.

(2) A licensee subject to the requirements of either §73.46 or §73.55 shall ensure that the review of the safeguards contingency plan is by individuals independent of both security program management and personnel who have direct responsibility for implementation of the security program. The review must include an audit of safeguards contingency procedures and practices, and an audit of commitments established for response by local law enforcement authorities.

(3) The licensee shall document the results and the recommendations of the safeguards

contingency plan review, management findings on whether the safeguards contingency plan is currently effective, and any actions taken as a result of recommendations from prior reviews in a report to the licensee's plant manager and to corporate management at least one level higher than that having responsibility for the day-to-day plant operation. The report must be maintained in an auditable form, available for inspection for a period of 3 years.

II. Nuclear Power Plant Safeguards Contingency Plans

A. Introduction

The safeguards contingency plan is a documented plan that describes how licensee personnel implement their physical protection program to defend against threats to their facility, up to and including the design basis threat of radiological sabotage. The goals of licensee safeguards contingency plans are:

(1) To organize the response effort at the licensee level;

(2) To provide predetermined, structured response by licensees to safeguards contingencies;

(3) To ensure the integration of the licensee response by other entities; and

(4) To achieve a measurable performance in response capability.

Licensee safeguards contingency planning should result in organizing the licensee's resources in such a way that the participants will be identified, their responsibilities specified, and the responses coordinated. The responses should be timely, and include personnel who are trained and qualified to respond in accordance with a documented training and qualification program.

The evaluation, validation, and testing of this portion of the program shall be conducted in accordance with appendix B, section VI of this part, Nuclear Power Reactor Training and Qualification Plan for Personnel Performing Security Program Duties. The licensee's safeguards contingency plan is intended to maintain effectiveness during the implementation of emergency plans developed under appendix E to part 50 of this chapter.

B. Contents of the Plan

Each safeguards contingency plan shall include five (5) categories of information:

(1) Background.

(2) Generic planning base.

(3) Licensee planning base.

(4) Responsibility matrix.

(5) Implementing procedures.

Although the implementing procedures (the fifth category of plan information) are the culmination of the planning process, and are an integral and important part of the safeguards contingency plan, they entail operating details subject to frequent changes. They need not be submitted to the Commission for approval, but are subject to inspection by NRC staff on a periodic basis.

1. Background. This category of information shall identify the perceived dangers and incidents that the plan will address and a general description of how the response is organized.

a. Perceived Danger—Consistent with the design basis threat specified in §73.1(a)(1), licensees shall identify and describe the perceived dangers, threats, and incidents against which the safeguards contingency plan is designed to protect.

b. Purpose of the Plan—Licensees shall describe the general goals, objectives and operational concepts underlying the implementation of the approved safeguards contingency plan.

c. Scope of the Plan—A delineation of the types of incidents covered by the plan.

(i) How the onsite response effort is organized and coordinated to effectively respond to a safeguards contingency event.

(ii) How the onsite response for safeguards contingency events has been integrated in other site emergency response procedures.

d. Definitions—A list of terms and their definitions used in describing operational and technical aspects of the approved safeguards contingency plan.

2. Generic Planning Base. Licensees shall define the criteria for initiation and termination of responses to security events to include the specific decisions, actions, and supporting information needed to respond to each type of incident covered by the approved safeguards contingency plan. To achieve this result the generic planning base must:

a. Identify those events that will be used for signaling the beginning or aggravation of a safeguards contingency event according to how they are perceived initially by licensee's personnel. Licensees shall ensure detection of unauthorized activities and shall respond to all alarms or other indications signaling a security event, such as penetration of a protected area, vital area, or unauthorized barrier penetration (vehicle or personnel); tampering, bomb threats, or other threat warnings—either verbal, such as telephoned threats, or implied, such as escalating civil disturbances.

b. Define the specific objective to be accomplished relative to each identified safeguards contingency event. The objective may be to obtain a level of awareness about the nature and severity of the safeguards contingency to prepare for further responses; to establish a level of response preparedness; or to successfully nullify or reduce any adverse safeguards consequences arising from the contingency.

c. Identify the data, criteria, procedures, mechanisms and logistical support necessary to achieve the objectives identified.

3. Licensee Planning Base. This category of information shall include factors affecting safeguards contingency planning that are specific for each facility. To the extent that the topics are treated in adequate detail in the licensee's approved physical security plan, they may be incorporated by reference in the Safeguards Contingency Plan. The following topics must be addressed:

a. Organizational Structure. The safeguards contingency plan must describe the organization's chain of command and delegation of authority during safeguards contingency events, to include a general description of how command and control functions will be coordinated and maintained.

b. Physical Layout. The safeguards contingency plan must include a site map depicting the physical structures located on the site, including onsite independent spent fuel storage installations, and a description of the structures depicted on the map. Plans must also include a description and map of the site in relation to nearby towns, transportation routes (e.g., rail, water, and roads), pipelines, airports, hazardous material facilities, and pertinent environmental features that may have an effect upon coordination of response activities. Descriptions and maps must indicate main and alternate entry routes for law enforcement or other offsite response and support agencies and the location for marshaling and coordinating response activities.

c. Safeguards Systems. The safeguards contingency plan must include a description of the physical security systems that support and influence how the licensee will respond to an event in accordance with the design basis threat described in §73.1(a). The licensee's description shall begin with onsite physical protection measures implemented at the outermost facility perimeter, and must move inward through those measures implemented to protect target set equipment.

(i) Physical security systems and security systems hardware to be discussed include security systems and measures that provide defense-in-depth, such as physical barriers, alarm systems, locks, area access, armaments, surveillance, and communications systems.

(ii) The specific structure of the security response organization to include the total number of armed responders and armed security officers documented in the approved security plans as a component of the protective strategy and a general description of response capabilities shall also be included in the safeguards contingency plan.

(iii) Licensees shall ensure that individuals assigned duties and responsibilities to implement the safeguards contingency plan are trained and qualified in those duties according to the Commission approved security plans, and the performance evaluation program.

(iv) Armed responders shall be available to respond from designated areas inside the protected area at all times and may not be assigned any other duties or responsibilities that could interfere with assigned armed response team duties and responsibilities.

(v) Licensees shall develop, implement, and maintain a written protective strategy to be documented in procedures that describe in detail the physical protection measures, security systems and deployment of the armed response team relative to site specific conditions, to include but not be limited to, facility layout, and the location of target set equipment and elements. The protective strategy should support the general goals, operational concepts, and performance objectives identified in the licensee's safeguards contingency plan. The protective strategy shall:

(1) Be designed to meet the performance requirements and objectives of §73.55(a) through (k).

(2) Identify predetermined actions, areas of responsibility and timelines for the deployment of armed personnel.

(3) Contain measures that limit the exposure of security personnel to possible attack, including incorporation of bullet resisting protected positions.

(4) Contain a description of the physical security systems and measures that provide defense-in-depth such as physical barriers, alarm systems, locks, area access, armaments, surveillance, and communications systems.

(5) Describe the specific structure and responsibilities of the armed response organization to include:

The authorized minimum number of armed responders, available at all times inside the protected area.

The authorized minimum number of armed security officers, available onsite at all times.

The total number of armed responders and armed security officers documented in the approved security plans as a component of the protective strategy.

(6) Provide a command and control structure, to include response by off-site law enforcement agencies, which ensures that decisions and actions are coordinated and communicated in a timely manner to facilitate response.

d. Law Enforcement Assistance. Provide a listing of available law enforcement agencies and a general description of their response capabilities and their criteria for response and a discussion of working agreements or arrangements for communicating with these agencies.

e. Policy Constraints and Assumptions. The safeguards contingency plan shall contain a discussion of State laws, local ordinances, and company policies and practices that govern licensee response to incidents

and must include, but is not limited to, the following.

(i) Use of deadly force.

(ii) Recall of off-duty employees.

(iii) Site jurisdictional boundaries.

(iv) Use of enhanced weapons, if applicable.

f. Administrative and Logistical Considerations. Descriptions of licensee practices which influence how the security organization responds to a safeguards contingency event to include, but not limited to, a description of the procedures that will be used for ensuring that equipment needed to facilitate response will be readily accessible, in good working order, and in sufficient supply.

4. Responsibility Matrix. This category of information consists of the detailed identification of responsibilities and specific actions to be taken by licensee organizations and/or personnel in response to safeguards contingency events.

a. Licensees shall develop site procedures that consist of matrixes detailing the organization and/or personnel responsible for decisions and actions associated with specific responses to safeguards contingency events. The responsibility matrix and procedures shall be referenced in the licensee's safeguards contingency plan.

b. Responsibility matrix procedures shall be based on the events outlined in the licensee's Generic Planning Base and must include the following information:

(i) The definition of the specific objective to be accomplished relative to each identified safeguards contingency event. The objective may be to obtain a level of awareness about the nature and severity of the safeguards contingency to prepare for further responses, to establish a level of response preparedness, or to successfully nullify or reduce any adverse safeguards consequences arising from the contingency.

(ii) A tabulation for each identified initiating event and each response entity which depicts the assignment of responsibilities for decisions and actions to be taken in response to the initiating event.

(iii) An overall description of response actions and interrelationships specifically associated with each responsible entity must be included.

c. Responsibilities shall be assigned in a manner that precludes conflict of duties and responsibilities that would prevent the execution of the safeguards contingency plan and emergency response plans.

d. Licensees shall ensure that predetermined actions can be completed under the postulated conditions.

5. Implementing Procedures.

(i) Licensees shall establish and maintain written implementing procedures that provide specific guidance and operating details that identify the actions to be taken and decisions to be made by each member of the security organization who is assigned duties and responsibilities required for the effective implementation of the security plans and the site protective strategy.

(ii) Licensees shall ensure that implementing procedures accurately reflect the information contained in the Responsibility Matrix required by this appendix, the security plans, and other site plans.

(iii) Implementing procedures need not be submitted to the Commission for approval but are subject to inspection.

C. Records and Reviews

1. Licensees shall review the safeguards contingency plan in accordance with the requirements of §73.55(m).

2. The safeguards contingency plan audit must include a review of applicable elements of the Physical Security Plan, Training and Qualification Plan, implementing procedures and practices, the site protective strategy, and response agreements made by local, State, and Federal law enforcement authorities.

3. Licensees shall retain all reports, records, or other documentation required by this appendix in accordance with the requirements of §73.55(q).

(Sec. 161i, Pub. L. 83–703, 68 Stat. 948, secs. 201, 204(b)(1), Pub L. 93–438, 88 Stat. 1243, 1245 (42 U.S.C. 2201, 5841, 5844))

[43 FR 11965, Mar. 23, 1978; 43 FR 14007, Apr. 4, 1978, as amended at 57 FR 33432, July 29, 1992; 64 FR 14818, Mar. 29, 1999; 72 FR 49562, Aug. 28, 2007; 74 FR 13991, Mar. 27, 2009; 77 FR 39910, July 6, 2012]

Appendix D to Part 73—Physical Protection of Irradiated Reactor Fuel in Transit, Training Program Subject Schedule

Pursuant to the provision of §73.37 of 10 CFR part 73, each licensee who transports or delivers to a carrier for transport irradiated reactor fuel is required to assure that individuals used as shipment escorts have completed a training program. The subjects that are to be included in this training program are as follows:

Security Enroute

—Route planning and selection
—Vehicle operation
—Procedures at stops
—Detours and use of alternate routes

Communications

—Equipment operation
—Status reporting
—Contacts with law enforcement units
—Communications discipline
—Procedures for reporting incidents

Radiological Considerations

—Description of the radioactive cargo
—Function and characteristics of the shipping casks
—Radiation hazards
—Federal, State and local ordinances relative to the shipment of radioactive materials
—Responsible agencies

Response to Contingencies

—Accidents
—Severe weather conditions
—Vehicle breakdown
—Communications problems
—Radioactive ''spills''
—Use of special equipment (flares, emergency lighting, etc.)

Response to Threats

—Reporting
—Calling for assistance
—Use of immobilization features
—Hostage situations
—Avoiding suspicious situations

The licensee is also required to assure that armed individuals serving as shipment escorts, other than members of local law enforcement agencies, have completed a weapons training and qualifications program equivalent to that required of guards, as described in III and IV of appendix B of this part, to assure that each such individual is fully qualified to use weapons assigned him.

[44 FR 34468, June 15, 1979, as amended at 45 FR 34710, June 3, 1980]

APPENDIX E TO PART 73—LEVELS OF PHYSICAL PROTECTION TO BE APPLIED IN INTERNATIONAL TRANSPORT OF NUCLEAR MATERIAL[1]

(Verbatim from Annex I to the Convention on the Physical Protection of Nuclear Material)

(a) Levels of physical protection for nuclear material during storage incidental to international nuclear transport include:

(1) For Category III materials, storage within an area to which access is controlled;

(2) For Category II materials, storage within an area under constant surveillance by guards or electronic devices, surrounded by a physical barrier with a limited number of points of entry under appropriate control or any area with an equivalent level of physical protection;

(3) For Category I material, storage within a protected area as defined for Category II, to which, in addition, access is restricted to persons whose trustworthiness has been determined, and which is under surveillance by guards who are in close communication with appropriate response forces. Specific measures taken in this context should have as their objective the detection and prevention of any assault, unauthorized access, or unauthorized removal of material.

(b) Levels of physical protection for nuclear material during international transport include:

(1) For Category II and III materials, transportation shall take place under special precautions including prior arrangements among sender, receiver, and carrier, and prior agreement between natural or legal persons subject to the jurisdiction and regulation of exporting and importing States, specifying time, place and procedures for transferring transport responsibility;

(2) For Category I materials, transportation shall take place under special precautions identified for transportation of Category II and III materials, and in addition, under constant surveillance by escorts and under conditions which assure close communication with appropriate response forces;

(3) For natural uranium other than in the form of ore or ore residue, transportation protection for quantities exceeding 500 kilograms U shall include advance notification of shipment specifying mode of transport, expected time of arrival and [shall provide for] confirmation of receipt of shipment.

[52 FR 9654, Mar. 26, 1987]

APPENDIX F TO PART 73—COUNTRIES AND ORGANIZATIONS THAT ARE PARTIES TO THE CONVENTION ON THE PHYSICAL PROTECTION OF NUCLEAR MATERIAL[1]

COUNTRIES/ORGANIZATIONS

Afghanistan
Albania

[1] See appendix C to part 110 of this chapter from the physical description of the categories of nuclear material as set forth in Annex I to the Convention. For the purposes of this part, the following categories of nuclear material are synonymous:

Category I is a formula quantity of strategic special nuclear material;

Category II is special nuclear material of moderate strategic significance or irradiated fuel; and

Category III is special nuclear material of low strategic significance.

[1] An updated list of party countries and organizations will appear annually in the International Atomic Energy Agency's publication, Convention on the Physical Protection of Nuclear Material, at *https://www-legacy.iaea.org/Publications/Documents/Conventions/cppnm_status.pdf*. Appendix F will be amended as required to maintain its currency.

Algeria
Andorra
Antigua and Barbuda
Argentina
Armenia
Australia
Austria
Azerbaijan
Bahamas
Bahrain
Bangladesh
Belarus
Belgium
Bolivia
Bosnia and Herzegovina
Botswana
Brazil
Bulgaria
Burkina Faso
Cabo Verde
Cambodia
Cameroon
Canada
Central African Republic
Chile
China
Colombia
Comoros
Costa Rica
Côte d'Ivoire
Croatia
Cuba
Cyprus
Czech Republic
Democratic Rep. of the Congo
Denmark
Djibouti
Dominica
Dominican Republic
Ecuador
El Salvador
Equatorial Guinea
Estonia
Eswatini
Fiji
Finland
France
Gabon
Georgia
Germany
Ghana
Greece
Grenada
Guatemala
Guinea
Guinea-Bissau
Guyana
Haiti
Honduras
Hungary
Iceland
India
Indonesia
Iraq
Ireland
Israel
Italy
Jamaica
Japan
Jordan
Kazakhstan
Kenya
Korea, Republic of
Kuwait
Kyrgyzstan
Lao P.D.R.
Latvia
Lebanon
Lesotho
Libya
Liechtenstein
Lithuania
Luxembourg
Madagascar
Malawi
Mali
Malta
Marshall Islands
Mauritania
Mexico
Monaco
Mongolia
Montenegro
Morocco
Mozambique
Myanmar
Namibia
Nauru
Netherlands
New Zealand
Nicaragua
Niger
Nigeria
Niue
Norway
Oman
Pakistan
Palau
Panama
Paraguay
Peru
Philippines
Poland
Portugal
Qatar
Republic of Moldova
Romania
Russian Federation
Rwanda
Saint Kitts and Nevis
Saint Lucia
San Marino
Saudi Arabia
Senegal
Serbia
Seychelles
Singapore
Slovakia
Slovenia
South Africa
Spain
Sudan
Sweden
Switzerland

Tajikistan
Thailand
The frmr. Yug. Rep. of Macedonia
Togo
Tonga
Trinidad and Tobago
Tunisia
Turkey
Turkmenistan
Uganda
Ukraine
United Arab Emirates
United Kingdom
United Republic of Tanzania
United States of America
Uruguay
Uzbekistan
Viet Nam
Yemen
Zambia
EURATOM

[83 FR 58465, Nov. 20, 2018]

APPENDIX G TO PART 73—REPORTABLE SAFEGUARDS EVENTS

Pursuant to the provisions of 10 CFR 73.71 (b) and (c), licensees subject to the provisions of 10 CFR 73.20, 73.37, 73.50, 73.55, 73.60, and 73.67 shall report or record, as appropriate, the following safeguards events.

I. *Events to be reported within one hour of discovery, followed by a written report within 60 days.*

(a) Any event in which there is reason to believe that a person has commited or caused, or attempted to commit or cause, or has made a credible threat to commit or cause:

(1) A theft or unlawful diversion of special nuclear material; or

(2) Significant physical damage to a power reactor or any facility possessing SSNM or its equipment or carrier equipment transporting nuclear fuel or spent nuclear fuel, or to the nuclear fuel or spent nuclear fuel a facility or carrier possesses; or

(3) Interruption of normal operation of a licensed nuclear power reactor through the unauthorized use of or tampering with its machinery, components, or controls including the security system.

(b) An actual entry of an unauthorized person into a protected area, material access area, controlled access area, vital area, or transport.

(c) Any failure, degradation, or the discovered vulnerability in a safeguard system that could allow unauthorized or undetected access to a protected area, material access area, controlled access area, vital area, or transport for which compensatory measures have not been employed.

(d) The actual or attempted introduction of contraband into a protected area, material access area, vital area, or transport.

II. *Events to be recorded within 24 hours of discovery in the safeguards event log.*

(a) Any failure, degradation, or discovered vulnerability in a safeguards system that could have allowed unauthorized or undetected access to a protected area, material access area, controlled access area, vital area, or transport had compensatory measures not been established.

(b) Any other threatened, attempted, or committed act not previously defined in appendix G with the potential for reducing the effectiveness of the safeguards system below that committed to in a licensed physical security or contingency plan or the actual condition of such reduction in effectiveness.

[52 FR 21658, June 9, 1987, as amended at 60 FR 13618, Mar. 14, 1995; 68 FR 33617, June 5, 2003]

APPENDIX H TO PART 73—WEAPONS QUALIFICATION CRITERIA

The B–27 Target or a target of equivalent difficulty will be used for all weapon qualification testing.

TABLE H–1—MINIMUM DAY FIRING CRITERIA [1]

[see footnotes at end of Table H–1]

Weapon	Stage	String [2]	Distance	Number of rounds	Timing [3]	Position	Scoring
Hand-gun.	1	1 2 3	3 yards	6	9 seconds	Draw and fire 2 rounds (repeat 2 times) 3 seconds each string.	Minimum qualifying = 70%.
	2	1 2	7 yards	6	10 seconds	Draw and fire 2 rounds at center mass and 1 round at the head (repeat once) 5 seconds each string.	
	3	1 2 3	7 yards	6	12 seconds (4 seconds each string).	Using weaker hand only, from the low ready position, fire 2 rounds (repeat twice).	
	4	1	10 yards ...	2	4 seconds	Draw and fire 2 rounds, come to low ready position.	

TABLE H–1—MINIMUM DAY FIRING CRITERIA [1]—Continued

[see footnotes at end of Table H–1]

Weapon	Stage	String [2]	Distance	Number of rounds	Timing [3]	Position	Scoring
		2	10 yards ...	2	3 seconds	Fire 2 rounds from low ready position and reholster.	
		3	10 yards ...	4	12 seconds (revolver) 10 seconds (semiautomatic).	Draw and fire 2 rounds, reload, fire 2 rounds and reholster.	
		4	10 yards ...	2	4 seconds	Draw and fire 2 rounds, come to low ready position.	
		5	10 yards ...	2	3 seconds	Fire 2 rounds from low ready position and reholster.	
	5	1	15 yards ...	2	5 seconds	Standing, draw weapon, move to kneeling position, then fire 2 rounds and reholster.	
		2	15 yards ...	2	5 seconds	Standing, draw weapon, move to kneeling position, then fire 2 rounds and reholster.	
	5	3	15 yards ...	4	14 seconds (revolver) 12 seconds (semiautomatic).	Standing, draw weapon, fire 2 rounds, move to kneeling position and fire 2 rounds, reload and reholster.	Minimum qualifying = 70%.
		4	15 yards ...	2	5 seconds	Draw weapon and fire 2 rounds standing, come to low ready position and....	
		5	15 yards ...	2	3 seconds	Fire 2 rounds from low ready.	
	6	1	25 yards ...	2	5 seconds	Draw and fire 2 rounds, standing, left side of barricade.	
		2	25 yards ...	2	5 seconds	Draw and fire 2 rounds, right side of barricade (standing).	
		3	25 yards ...	4	15 seconds (revolver) 12 seconds (semi-automatic).	Draw weapon and move from standing to kneeling position, fire 2 rounds, left side of barricade, reload, and from the kneeling position, fire 2 rounds, right side of barricade.	
		4	25 yards ...	2	10 seconds	Draw weapon and move from standing to prone, fire 2 rounds.	
		5	25 yards ...	2	10 seconds	Draw weapon and move from standing to prone, fire 2 rounds.	
	7	1	50 yards ...	2	8 seconds	Draw weapon and fire 2 rounds from a standing barricade position (right or left side, shooter's option).	
		2	50 yards ...	2	10 seconds	Draw weapon and fire 2 rounds from a kneeling barricade position (right or left side, shooter's option).	
		3	50 yards ...	2	12 seconds	Draw weapon and fire 2 rounds from prone position.	
Shotgun	1	1	7 yards	2 Double 0 buckshot	4 seconds	At low ready position fire 2 rounds standing.	Minimum qualifying = 70%.
	2	1 2	15 yards ...	4 Double 0 buckshot	15 seconds	At low ready position fire 2 rounds standing, reload and fire 2 rounds.	
	3	1 2	25 yards ...	4 rifled slugs or 00 buckshot	20 seconds	On command, load 4 rounds and fire 2 rounds standing and 2 rounds kneeling.	
Rifle	1	1 2 3	15 yards ...	6	10 seconds (4 seconds for 1st string, 3 seconds for each of 2nd and 3rd string).	Standing in low ready position, move to standing point shoulder position (1 magazine loaded with 6 rounds, weapon in half-load configuration), fire 2 rounds per string.	Minimum qualifying = 70%.
	2	1 2 3	25 yards ...	6	11 seconds (5 seconds for 1st string, 3 seconds for each of 2nd and 3rd string).	Standing in low ready position, move to standing point shoulder position (1 magazine loaded with 6 rounds, weapon in half-load configuration), fire 2 rounds per string.	

TABLE H–1—MINIMUM DAY FIRING CRITERIA [1]—Continued

[see footnotes at end of Table H–1]

Weapon	Stage	String [2]	Distance	Number of rounds	Timing [3]	Position	Scoring
	3	1 2 3	25 yards ...	6	17 seconds (7 seconds for 1st string, 5 seconds for each of 2nd and 3rd string).	Standing in low ready position, move to kneeling point shoulder position (1 magazine loaded with 6 rounds, weapon in half-load configuration), fire 2 rounds per string.	
	4	1 2	50 yards ...	4	16 seconds (9 seconds for 1st string, 7 second for 2nd string).	Standing in low ready position, move to kneeling point shoulder position (1 magazine loaded with 4 rounds, weapon in half-load configuration), fire 2 rounds per string.	
	[4]5	1	50 yards ...	4	20 seconds	Standing in low ready position, move to prone (weapon in half-load configuration) with two magazines each loaded with 2 rounds, fire 2 rounds, reload with 2nd magazine and fire 2 rounds.	Minimum qualifying = 70%.
	[4]6	1	100 yards	4	25 seconds	Standing in low ready position, move to prone (weapon in half-load configuration) two magazines each loaded with 2 rounds, fire 2 rounds, reload with 2nd magazine and fire 2 rounds.	

Footnotes:
[1] This day firing qualifications course is to be used by all TRT members, armed response personnel, and guards.
[2] A string is one of the different phases within a single stage.
[3] Security personnel will be timed as shown.
[4] Stages 5 and 6 are to be used for .30 caliber or larger rifles.

TABLE H–2—MINIMUM NIGHT FIRING CRITERIA

Weapon	Stage	Distance	No. of rounds	Timing	Position	Scoring	Lighting
Handgun (Rev.).	1	7 yds	12	35 seconds	Standing-no artificial support.	Minimum qualifying = 70%.	For all courses 0.2 foot-candles at center mass of target area.
	2	15 yds	12	45 seconds.			
Handgun (Semi-).	1	7 yds	2 + clip	30 seconds	Standing-no artificial support.		
	2	15 yds	2 + clip	40 seconds.			
Shotgun	1	25 yds	2 rifled slugs ..	30 seconds (Load 2 slugs—chamber empty—Time starts—Commence firing).	Standing-strong shoulder.	Rifled slug hits = strike area on target (10, 9, 7).	
	1	15 yds	5 Double 0 buckshot.	10 seconds (Load 5rds Buckshot—chamber, empty—Time starts—Commence firing).	Standing-strong shoulder.	Double 0 Buckshot: Hits in black = 2 pts (5rds × 9 pellets/rd × 2 pts = 90) Minimum qualifying = 70%.	
Rifle	1	25 yds	1–5rd mag	45 sec	Standing-barricade.	Minimum qualifying = 70%.	
	2	25 yds	1–5rd mag	45 sec	Standing.		
	3	25 yds	1–5rd mag	45 sec	Kneeling.		
	4	25 yds	1–5rd mag	45 sec	Prone.		

Note. All firing is to be done only at night. Use of night simulation equipment during daylight is not allowable. Use of site specific devices (*i.e.*, laser, etc.) should be included in the licensee amended security plan for NRC approval.

[58 FR 45785, Aug. 31, 1993]

PART 74—MATERIAL CONTROL AND ACCOUNTING OF SPECIAL NUCLEAR MATERIAL

Subpart A—General Provisions

Sec.
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Subpart B—General Reporting and Recordkeeping Requirements

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74.33 Nuclear material control and accounting for uranium enrichment facilities authorized to produce special nuclear material of low strategic significance.

Subpart D—Special Nuclear Material of Moderate Strategic Significance

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74.82 Tests.
74.83 Violations.
74.84 Criminal penalties.

AUTHORITY: Atomic Energy Act of 1954, secs. 53, 57, 161, 182, 223, 234, 1701 (42 U.S.C. 2073, 2077, 2201, 2232, 2273, 2282, 2297f); Energy Reorganization Act of 1974, secs. 201, 202 (42 U.S.C. 5841, 5842); 44 U.S.C. 3504 note.

SOURCE: 50 FR 7579, Feb. 25, 1985, unless otherwise noted.

Subpart A—General Provisions

§74.1 Purpose.

(a) This part has been established to contain the requirements for the control and accounting of special nuclear material at fixed sites and for documenting the transfer of special nuclear material. General reporting requirements as well as specific requirements for certain licensees possessing special nuclear material of low strategic significance, special nuclear material of moderate strategic significance, and formula quantities of strategic special nuclear material are included. Requirements for the control and accounting of source material at enrichment facilities are also included.

(b) The general conditions and procedures for the submittal of a license application for the activities covered in this part are detailed in §70.22 of this chapter.

[50 FR 7579, Feb. 25, 1985, as amended at 56 FR 55998, Oct. 31, 1991; 67 FR 78144, Dec. 23, 2002]

§74.2 Scope.

(a) The general reporting and recordkeeping requirements of subpart B of this part apply to each person licensed under this chapter who possesses special nuclear material in a quantity of one gram or more of contained uranium-235, uranium-233, or plutonium; or who transfers or receives a quantity of special nuclear material of one gram or more of contained uranium-235, uranium-233, or plutonium. The general reporting and recordkeeping requirements of subpart B of this part do not apply to licensees whose MC&A reporting and recordkeeping requirements are covered by §§72.72, 72.76, and 72.78 of this chapter.

(b) In addition, specific control and accounting requirements are included in subparts C, D, and E for certain licensees who:

(1) Possess and use formula quantities of strategic special nuclear material;

(2) Possess and use special nuclear material of moderate strategic significance;

(3) Possess and use special nuclear material of low strategic significance; or

(4) Possess uranium source material and equipment capable of producing enriched uranium.

(c) As provided in part 76 of this chapter, the regulations of this part establish procedures and criteria for material control and accounting for the issuance of a certificate of compliance or the approval of a compliance plan.

[67 FR 78144, Dec. 23, 2002, as amended at 73 FR 32463, June 9, 2008]

§ 74.4 Definitions.

As used in this part:

Abrupt loss means a loss occurring in the time interval between consecutive sequential performances of a material control test which is designed to detect anomalies potentially indicative of a loss of strategic special nuclear material from a specific unit of SSNM (*i.e.*, a quantity characterized by a unique measurement) introduced into a process.

Accessible location means a process location at which SSNM could be acquired without leaving evidence of the acquisition, *i.e.*, without tools or other equipment to obviously violate the integrity of the containment.

Act means the Atomic Energy Act of 1954 (68 Stat. 919), including any amendments thereto.

Active inventory means the sum of additions to inventory, beginning inventory, ending inventory, and removals from inventory, after all common terms have been excluded. Common terms are any material values which appear in the active inventory calculation more than once and come from the same measurement.

Additions to material in process means: (1) Receipts that are opened, except for receipts opened only for sampling and subsequently maintained under tamper-safing; (2) opened sealed sources; and (3) material removed from process for nonconformance with chemical or physical specifications that is subsequently reprocessed, measured for contained SSNM, and reintroduced to process.

Alarm Threshold means a predetermined quantity of SSNM calculated from the specified probability of detection for a given loss and the standard deviation associated with a material control test. An alarm threshold serves to trigger a response action.

Batch means a portion of source material or special nuclear material handled as a unit for accounting purposes at a key measurement point and for which the composition and quantity are defined by a single set of measurements. The source material or special nuclear material may be in bulk form or contained in a number of separate items.

Beginning inventory (BI) means the book inventory quantity at the beginning of an inventory period, and is the reconciled physical inventory entered into the books as an adjusted inventory at the completion of the prior inventory period.

Bias means the deviation of the expected value of a random variable from the corresponding correct or assigned value.

Calibration means the process of determining the numerical relationship between the observed output of a measurement system and the value, based upon reference standards, of the characteristic being measured.

Category IA material means SSNM directly useable in the manufacture of a nuclear explosive device, except if:

(1) The dimensions are large enough (at least two meters in one dimension, greater than one meter in each of two dimensions, or greater than 25cm in each of three dimensions) to preclude hiding the item on an individual;

(2) The total weight of an encapsulated item of SSNM is such that it cannot be carried inconspicuously by one person (*i.e.*, at least 50 kilograms gross weight); or

(3) The quantity of SSNM (less than 0.05 formula kilograms) in each container requires protracted diversions to accumulate five formula kilograms.

Category IB material means all SSNM material other than Category IA.

Commission means the Nuclear Regulatory Commission or its duly authorized representatives.

Continuous process means a unit process in which feed material must be introduced in a systematic manner in order to maintain equilibrium conditions.

Controlled access area means any temporarily or permanently established area which is clearly demarcated, access to which is controlled, and which affords isolation of the material or persons within it.

DOE means the U.S. Department of Energy or its duly authorized representatives.

Effective kilograms of special nuclear material means:

(1) For plutonium and uranium-233 their weight in kilograms;

(2) For uranium with an enrichment in the isotope U^{235} of 0.01 (1 percent) and above, its element weight in kilograms multiplied by the square of its enrichment expressed as a decimal weight fraction; and

(3) For uranium with an enrichment in the isotope U^{235} below 0.01 (1 percent), its element weight in kilograms multiplied by 0.0001.

Element means uranium or plutonium.

Estimate means a specific numerical value arrived at by the application of an estimator.

Estimator means a function of a sample measurement used to estimate a population parameter.

Fissile isotope means: (1) Uranium U–233, or (2) uranium-235 by enrichment category, (3) plutonium-239, and (4) plutonium–241.

Formula kilogram means SSNM in any combination in a quantity of 1000 grams computed by the formula, grams = (grams contained U–235) + 2.5 (grams U–233 + grams plutonium).

Formula quantity means strategic special nuclear material in any combination in a quantity of 5,000 grams or more computed by the formula, grams = (grams contained U^{235}) + 2.5 (grams U^{233} + grams plutonium).

Government agency means any executive department, commission, independent establishment, corporation, wholly or partly owned by the United States of America, which is an instrumentality of the United States, or any board, bureau, division, service, office, officer, authority, administration, or other establishment in the executive branch of the Government.

High enriched uranium means uranium enriched to 20 percent or greater in the isotope uranium-235.

Inventory difference (ID) means the arithmetic difference obtained by subtracting the quantity of SNM tabulated from a physical inventory from the book inventory quantity. Book inventory quantity is equivalent to the beginning inventory (BI) plus additions to inventory (A) minus removals from inventory (R), while the physical inventory quantity is the ending inventory (EI) for the material balance period in question (as physically determined). Thus mathematically, ID = (BI + A − R) − EI or ID = BI + A − R − EI

Item means any discrete quantity or container of special nuclear material or source material, not undergoing processing, having an unique identity and also having an assigned element and isotope quantity.

License, except where otherwise specified, means a license issued pursuant to part 70 of this chapter.

Low enriched uranium means uranium enriched below 20 percent in the isotope uranium-235.

Material means special nuclear material.

Material access area means any location which contains special nuclear material, within a vault or a building, the roof, walls, and floor of which constitute a physical barrier.

Material balance means the determination of an inventory difference (ID).

MC&A alarm means a situation in which there is: (1) an out-of-location item or an item whose integrity has been violated, (2) an indication of a flow of SSNM where there should be none, or (3) a difference between a measured or observed amount or property of material and its corresponding predicted or property value that exceeds a threshold established to provide the detection capability required by §74.53.

Material control test means a comparison of a pre-established alarm threshold with the results of a process difference or process yield performed on a unit process.

Material in process means any special nuclear material possessed by the licensee except in unopened receipts, sealed sources, measured waste discards, and ultimate product maintained under tamper-safing.

Measurement includes sampling and means the determination of mass, volume, quantity, composition or other property of a material where such determinations are used for special nuclear material control and accounting purposes.

Measurement system means all of the apparatus, equipment, instruments and procedures used in performing a measurement.

Person means:

(1) Any individual, corporation, partnership, firm, association, trust, estate, public or private institution, group, Government agency other than the Commission or the Department of Energy, except that the Department of Energy shall be considered a person within the meaning of the regulations in this part to the extent that its facilities and activities are subject to the licensing and related regulatory authority of the Commission pursuant to section 202 of the Energy Reorganization Act of 1974 (88 Stat. 1244), any state or any political subdivision of or any political entity within a state, any foreign government or nation or political subdivision of any such government or nation, or other entity; and

(2) Any legal successor, representative, agent, or agency of the foregoing.

Physical inventory means determination on a measured basis of the quantity of special nuclear material on hand at a given time. The methods of physical inventory and associated measurements will vary depending on the material to be inventoried and the process involved.

Plant means a set of processes or operations (on the same site, but not necessarily all in the same building) coordinated into a single manufacturing, R&D, or testing effort. A scrap recovery operation, or an analytical laboratory, serving both onsite and offsite customers (or more than one onsite manufacturing effort) should be treated as a separate plant.

Power of detection means the probability that the critical value of a statistical test will be exceeded when there is an actual loss of a specific SSNM quantity.

Process difference (PD) means the determination of an ID on a unit process level with the additional qualification that difficult to measure components may be modeled.

Process yield means the quantity of SSNM actually removed from a unit process compared with the quantity predicted (based on a measured input) to be available for removal. Process yield differs from a process difference in that holdup and sidestreams are not measured or modeled.

Produce when used in relation to special nuclear material, means: (1) To manufacture, make, produce, or refine special nuclear material; (2) to separate special nuclear material from other substances in which such material may be contained; or (3) to make or to produce new special nuclear material.

Random error means the deviation of a random variable from its expected value.

Receipt means special nuclear material received by a licensee from an offsite source.

Reconciliation means the process of evaluating and comparing licensee reports required under this part to the projected material balances generated by the Nuclear Materials Management and Safeguards System. This process is considered complete when the licensee resolves any differences between the reported and projected balances, including those listed for foreign obligated materials.

Reference standard means a material, device, or instrument whose assigned value is known relative to national standards or nationally accepted measurement systems. This is also commonly referred to as a traceable standard.

Removals from inventory means measured quantities of special nuclear material contained in:

(1) Shipments;

(2) Waste materials transferred to an onsite holding account via a DOE/NRC Form 741 transaction;

(3) Measured discards transported offsite; and

(4) Effluents released to the environment.

Removals of material from process (or *removals from process*) means measured quantities of special nuclear material contained in:

(1) Effluents released to the environment;

(2) Previously unencapsulated materials that have been encapsulated as sealed sources;

(3) Waste materials that will not be subject to further onsite processing and which are under tamper-safing;

(4) Ultimate product placed under tamper-safing; and

(5) Any materials (not previously designated as removals from process) shipped offsite.

Research and development means: (1) Theoretical analysis, exploration, or experimentation; or (2) the extension of investigative findings and theories of a scientific or technical nature into practical application for experimental and demonstration purposes, including the experimental production and testing of models, devices, equipment, materials, and processes.

Scrap means the various forms of special nuclear material generated during chemical and mechanical processing, other than recycle material and normal process intermediates, which are unsuitable for continued processing, but all or part of which will be converted to useable material by appropriate recovery operations.

Sealed source means any special nuclear material that is physically encased in a capsule, rod, element, etc. that prevents the leakage or escape of the special nuclear material and that prevents removal of the special nuclear material without penetration of the casing.

Source material means source material as defined in section 11z. of the Act and in the regulations contained in part 40 of this chapter.

Special nuclear material means:

(1) Plutonium, uranium-233, uranium enriched in the isotope U^{233} or in the isotope U^{235}, and any other material which the Commission, pursuant to the provisions of section 51 of the Atomic Energy Act of 1954, as amended, determines to be special nuclear material, but does not include source material; or

(2) Any material artificially enriched by any of the foregoing, but does not include source material.

Special nuclear material of low strategic significance means:

(1) Less than an amount of special nuclear material of moderate strategic significance, but more than 15 grams of uranium-235 (contained in uranium enriched to 20 percent or more in the U^{235} isotope) or 15 grams of uranium-233 or 15 grams of plutonium or the combination of 15 grams when computed by the equation, grams = grams contained U^{235} + grams plutonium + grams U^{233}; or

(2) Less than 10,000 grams but more than 1,000 grams of uranium-235 (contained in uranium enriched to 10 percent or more, but less than 20 percent in the U^{235} isotope); or

(3) 10,000 grams or more of uranium-235 contained in uranium enriched above natural, but less than 10 percent in the U^{235} isotope.

Special nuclear material of moderate strategic significance means:

(1) Less than a formula quantity of strategic special nuclear material but more than 1,000 grams of uranium-235 (contained in uranium enriched to 20 percent or more in the U^{235} isotope) or more than 500 grams of uranium-233 or plutonium or in a combined quantity of more than 1,000 grams when computed by the equation, grams = (grams contained U^{235}) + 2 (grams U^{233} + grams plutonium); or

(2) 10,000 grams or more or uranium-235 (contained in uranium enriched to 10 percent or more but less than 20 percent in the U^{235} isotope).

Standard Error of the Inventory Difference (SEID) means the standard deviation of an inventory difference that takes into account all measurement error contributions to the components of the ID.

Standard Error of the Process Difference means the standard deviation of a process difference value that takes into account both measurement and nonmeasurement contributions to the components of PD.

Strategic special nuclear material means uranium-235 (contained in uranium enriched to 20 percent or more in the U^{235} isotope), uranium-233, or plutonium.

Tamper-safing means the use of devices on containers or vaults in a manner and at a time that ensures a clear indication of any violation of the integrity of previously made measurements of special nuclear material within the container or vault.

Traceability means the ability to relate individual measurement results to national standards or nationally accepted measurement systems through an unbroken chain of comparisons.

Ultimate product means any special nuclear material in the form of a product that would not be further processed at that licensed location.

Unit process means an identifiable segment or segments of processing activities for which the amounts of input and output SSNM are based on measurements.

Unopened receipts means receipts not opened by the licensee, including receipts of sealed sources, and receipts opened only for sampling and subsequently maintained under tamper-safing.

Vault means a windowless enclosure with walls, floor, roof and door(s) designed and constructed to delay penetration from forced entry.

[50 FR 7579, Feb. 25, 1985, as amended at 52 FR 10039, Mar. 30, 1987; 56 FR 55998, Oct. 31, 1991; 67 FR 78144, Dec. 23, 2002; 73 FR 32463, June 9, 2008; 80 FR 45844, Aug. 3, 2015]

§ 74.5 Interpretations.

Except as specifically authorized by the Commission in writing, no interpretations of the meaning of the regulations in this part by any officer or employee of the Commission other than a written interpretation by the General Counsel will be recognized as binding on the Commission.

§ 74.6 Communications.

Any communication or report concerning the regulations in this part and any application filed under these regulations may be submitted to the Commission as follows:

(a) By mail addressed to: ATTN: Document Control Desk, Director of Nuclear Material Safety and Safeguards, U.S. Nuclear Regulatory Commission, Washington, DC 20555–0001.

(b) By hand delivery to the NRC's offices at 11555 Rockville Pike, Rockville, Maryland.

(c) Where practicable, by electronic submission, for example, via Electronic Information Exchange, or CD-ROM. Electronic submissions must be made in a manner that enables the NRC to receive, read, authenticate, distribute, and archive the submission, and process and retrieve it a single page at a time. Detailed guidance on making electronic submissions can be obtained by visiting the NRC's Web site at *http://www.nrc.gov/site-help/e-submittals.html;* by e-mail to *MSHD.Resource@nrc.gov;* or by writing the Office of the Chief Information Officer, U.S. Nuclear Regulatory Commission, Washington, DC 20555–0001. The guidance discusses, among other topics, the formats the NRC can accept, the use of electronic signatures, and the treatment of nonpublic information.

[50 FR 7579, Feb. 25, 1985, as amended at 53 FR 4112, Feb. 12, 1988; 53 FR 43422, Oct. 27, 1988; 68 FR 58821, Oct. 10, 2003; 74 FR 62685, Dec. 1, 2009; 80 FR 74981, Dec. 1, 2015]

§ 74.7 Specific exemptions.

The Commission may, upon application of any interested person or upon its own initiative, grant such exemptions from the requirements of the regulations in this part as it determines are authorized by law and will not endanger life or property or the common defense and security, and are otherwise in the public interest.

§ 74.8 Information collection requirements: OMB approval.

(a) The Commission has submitted the information collection requirements contained in this part to the Office of Management and Budget (OMB) for approval as required by the Paperwork Reduction Act (44 U.S.C. 3501 *et seq.*). The NRC may not conduct or sponsor, and a person is not required to respond to, a collection of information if it does not display a currently valid OMB control number. OMB has approved the information collection requirements contained in this part under control number 3150–0123.

(b) The approved information collection requirements contained in this part appear in §§74.7, 74.11, 74.13, 74.15, 74.17, 74.19, 74.31, 74.33, 74.41, 74.43, 74.45, 74.51, 74.57, and 74.59.

(c) This part contains information collection requirements in addition to those approved under the control number specified in paragraph (a) of this section. These information collection requirements and the control numbers under which they are approved are as follows:

(1) In §74.15, DOE/NRC Form–741 is approved under Control No. 3150–0003.

(2) In §74.13, DOE/NRC Form–742 is approved under Control No. 3150–0004.

(3) In §74.13, DOE/NRC Form–742C is approved under Control No. 3150–0058.

(4) In §74.17, NRC Form 327 is approved under Control No. 3150–0139.

[50 FR 7579, Feb. 25, 1985, as amended at 52 FR 10040, Mar. 30, 1987; 52 FR 19305, May 22, 1987; 56 FR 55998, Oct. 31, 1991; 62 FR 52189, Oct. 6, 1997; 67 FR 78144, Dec. 23, 2002; 85 FR 65664, Oct. 16, 2020]

Subpart B—General Reporting and Recordkeeping Requirements

§74.11 Reports of loss or theft or attempted theft or unauthorized production of special nuclear material.

(a) Each licensee who possesses one gram or more of contained uranium-235, uranium-233, or plutonium shall notify the NRC Operations Center within 1 hour of discovery of any loss or theft or other unlawful diversion of special nuclear material which the licensee is licensed to possess, or any incident in which an attempt has been made to commit a theft or unlawful diversion of special nuclear material. The requirement to report within 1 hour of discovery does not pertain to measured quantities of special nuclear material disposed of as discards or inventory difference quantities. Each licensee who operates an uranium enrichment facility shall notify the NRC Operations Center within 1 hour of discovery of any unauthorized production of enriched uranium. For centrifuge enrichment facilities the requirement to report enrichment levels greater than that authorized by license within 1 hour does not apply to each cascade during its start-up process, not to exceed the first 24 hours.

(b) This notification must be made to the NRC Operations Center via the Emergency Notification System if the licensee is party to that system. If the Emergency Notification System is inoperative or unavailable, the licensee shall make the required notification via commercial telephonic service or other dedicated telephonic system or any other method that will ensure that a report is received by the NRC Operations Center within one hour. The exemption of §73.22(f)(3) applies to all telephonic reports required by this section.

(c) Reports required under §73.71 need not be duplicated under requirements of this section.

[52 FR 21659, June 9, 1987; 52 FR 23257, June 18, 1987, as amended at 56 FR 55998, Oct. 31, 1991, 81 FR 86910, Dec. 2, 2016]

§74.13 Material status reports.

(a) Each licensee, including nuclear reactor licensees as defined in §§50.21 and 50.22 of this chapter, possessing, or who had possessed in the previous reporting period, at any one time and location, special nuclear material in a quantity totaling one gram or more of contained uranium-235, uranium-233, or plutonium shall complete and submit, in computer-readable format Material Balance Reports concerning special nuclear material that the licensee has received, produced, possessed, transferred, consumed, disposed, or lost. This prescribed computer-readable report replaces the DOE/NRC form 742 which has been previously submitted in paper form. The Physical Inventory Listing Report must be submitted with each Material Balance Report. This prescribed computer-readable report replaces the DOE/NRC Form 742C which has been previously submitted in paper form. Reports must be submitted for each Reporting Identification Symbol (RIS) account including all holding accounts. Each licensee shall prepare and submit the reports described in this paragraph as specified in the instructions in NUREG/BR–0007 and NMMSS Report D–24 ''Personal Computer Data Input for NRC Licensees.''

Copies of these instructions may be obtained from the U.S. Nuclear Regulatory Commission, Division of Fuel Management, Washington, DC 20555–0001, or by e-mail to *RidsNmssFcss@nrc.gov*. Each licensee subject to the requirements of § 74.51 shall compile a report as of March 31 and September 30 of each year and file it within 30 days after the end of the period covered by the report. Licensees subject to the requirements of §§ 74.19(c), 74.31(c)(5), 74.33(c)(4), or 74.43(c)(6) shall submit a report within 60 calendar days of the beginning of the physical inventory. All other licensees shall submit a report no later than March 31 of each year. The Commission may permit a licensee to submit the reports at other times for good cause. Each licensee required to report material balance, and inventory information, as detailed in this part, shall resolve any discrepancies identified during the report review and reconciliation process within 30 calendar days of notification of a discrepancy identified by NRC.

(b) Any licensee who is required to submit routine Material Status Reports pursuant to § 75.35 of this chapter (pertaining to implementation of the US/IAEA Safeguards Agreement) shall prepare and submit these reports only as provided in that section (instead of as provided in paragraph (a) of this section).

[67 FR 78144, Dec. 23, 2002, as amended at 73 FR 32463, June 9, 2008; 79 FR 75741, Dec. 19, 2014; 84 FR 65646, Nov. 29, 2019]

§ 74.15 Nuclear material transaction reports.

(a) Each licensee who transfers or receives special nuclear material in a quantity of one gram or more of contained uranium-235, uranium-233, or plutonium shall complete in computer-readable format a Nuclear Material Transaction Report. In addition, each licensee who adjusts the inventory in any manner, other than for transfers and receipts, shall submit a Nuclear Material Transaction Report, in computer-readable format, to coincide with the submission of the Material Balance report. This shall be done as specified in the instructions in NUREG/BR–0006 and NMMSS Report D–24, ''Personal Computer Data Input for NRC Licensees.'' Copies of these instructions NUREG/BR–0006 and NMMSS Report D–24, ''Personal Computer Data Input for NRC Licensees'' may be obtained either by writing the U.S. Nuclear Regulatory Commission, Division of Fuel Management, Washington, DC 20555–0001, or by e-mail to *RidsNmssFcss@nrc.gov*. Each licensee who transfers the material shall submit a Nuclear Material Transaction Report in computer-readable format as specified in the instructions no later than the close of business the next working day. Each licensee who receives the material shall submit a Nuclear Material Transaction Report in computer-readable format in accordance with instructions within ten (10) days after the material is received. This prescribed computer-readable format replaces the DOE/NRC Form 741 which has been previously submitted in paper form.

(b) Each licensee who receives 1 gram or more of contained uranium-235, uranium-233, or plutonium from a foreign source shall:

(1) Complete in computer-readable format both the supplier's and receiver's portion of the Nuclear Material Transaction Report;

(2) Perform independent tests to assure the accurate identification and measurement of the material received, including its weight and enrichment; and

(3) Indicate the results of these tests on the receiver's portion of the form.

(c) Each licensee who ships special nuclear material in a quantity of one gram or more of contained uranium-235, uranium-233, or plutonium to foreign recipient shall complete in computer-readable format the supplier's portion of the Nuclear Material Transaction Report. The licensee shall complete the receiver's portion of the Nuclear Material Transaction Report only if a significant shipper-receiver difference as described in §§ 74.31, 74.43, or 74.59, as applicable, is identified.

(d) Any licensee who is required to submit inventory change reports pursuant to § 75.34 of this chapter (pertaining to implementation of the US/International Atomic Energy Agency (IAEA) Safeguards Agreement) shall

prepare and submit these reports only as provided in that section (instead of as provided in paragraphs (a) and (b) of this section).

[59 FR 35621, July 13, 1994, as amended at 68 FR 58821, Oct. 10, 2003; 73 FR 32464, June 9, 2008; 79 FR 75741, Dec. 19, 2014; 84 FR 65646, Nov. 29, 2019]

§ 74.17 Special nuclear material physical inventory summary report.

(a) Each licensee subject to the requirements of §§ 74.31 or 74.33 of this part shall submit a completed Special Nuclear Material Physical Inventory Summary Report on NRC Form 327 not later than 60 calendar days from the start of each physical inventory required by §§ 74.31(c)(5) or 74.33(c)(4). Using an appropriate method listed in § 74.6, the licensee shall report the inventory results by plant and total facility to the Director of the NRC's Office of Nuclear Material Safety and Safeguards.

(b) Each licensee subject to the requirements of § 74.41(a) of this part shall submit a completed Special Nuclear Material Physical Inventory Summary Report on NRC form 327 not later than 60 calendar days from the start of each physical inventory required by § 74.43(c)(7). Using an appropriate method listed in § 74.6, the licensee shall report the inventory results by plant and total facility to the Director of the NRC's Office of Nuclear Material Safety and Safeguards.

(c) Each licensee subject to the requirements of § 74.51 shall submit a completed Special Nuclear Material Physical Inventory Summary Report on NRC form 327 not later than 45 calendar days from the start of each physical inventory required by § 74.59(f). The licensee shall report the physical inventory results by plant and total facility to the Director, Office of Nuclear Material Safety and Safeguards, U.S. Nuclear Regulatory Commission, Washington, DC 20555–0001.

[67 FR 78145, Dec. 23, 2002, as amended at 68 FR 58821, Oct. 10, 2003]

§ 74.19 Recordkeeping

(a) Licensees subject to the recordkeeping requirements of §§ 74.31, 74.33, 74.43, or 74.59 of this part are exempt from the requirements of paragraphs (a)(1) through (4) of this section. Otherwise:

(1) Each licensee shall keep records showing the receipt, inventory (including location and unique identity), acquisition, transfer, and disposal of all special nuclear material in its possession regardless of its origin or method of acquisition.

(2) Each record relating to material control or material accounting that is required by the regulations in this chapter or by license condition must be maintained and retained for the period specified by the appropriate regulation or license condition. If a retention period is not otherwise specified by regulation or license condition, the licensee shall retain the record until the Commission terminates the license that authorizes the activity that is subject to the recordkeeping requirement.

(3) Each record of receipt, acquisition, or physical inventory of special nuclear material that must be maintained pursuant to paragraph (a)(1) of this section must be retained as long as the licensee retains possession of the material and for 3 years following transfer or disposal of the material.

(4) Each record of transfer of special nuclear material to other persons must be retained by the licensee who transferred the material until the Commission terminates the license authorizing the licensee's possession of the material.

(b) Each licensee that is authorized to possess special nuclear material in a quantity exceeding one effective kilogram at any one time shall establish, maintain, and follow written material control and accounting procedures that are sufficient to enable the licensee to account for the special nuclear material in its possession under license. The licensee shall retain these procedures until the Commission terminates the license that authorizes possession of the material and retain any superseded portion of the procedures for 3 years after the portion is superseded.

(c) Other than licensees subject to §§ 74.31, 74.33, 74.41, or 74.51, each licensee who is authorized to possess special nuclear material, at any one time and site location, in a quantity greater than 350 grams of contained

uranium-235, uranium-233, or plutonium, or any combination thereof, shall conduct a physical inventory of all special nuclear material in its possession under license at intervals not to exceed 12 months. The results of these physical inventories need not be reported to the Commission, but the licensee shall retain the records associated with each physical inventory until the Commission terminates the license that authorized the possession of special nuclear material.

(d) Records that must be maintained pursuant to this part may be the original or a reproduced copy or a microform if the reproduced copy or microform is duly authenticated by authorized personnel and the microform is capable of producing a clear and legible copy after storage for the period specified by Commission regulations. The record may also be stored in electronic media with the capability for producing legible, accurate, and complete records during the required retention period. Records such as letters, drawings, or specifications must include all pertinent information such as stamps, initials, and signatures. The licensee shall maintain adequate safeguards against tampering with and loss of records.

[67 FR 78145, Dec. 23, 2002]

Subpart C—Special Nuclear Material of Low Strategic Significance

§ 74.31 Nuclear material control and accounting for special nuclear material of low strategic significance.

(a) *General performance objectives.* Each licensee who is authorized to possess and use more than one effective kilogram of special nuclear material of low strategic significance, excluding sealed sources, at any site or contiguous sites subject to control by the licensee, other than a production or utilization facility licensed pursuant to part 50 or 70 of this chapter, or operations involved in waste disposal, shall implement and maintain a Commission approved material control and accounting system that will achieve the following objectives:

(1) Confirm the presence of special nuclear material;

(2) Resolve indications of missing material; and

(3) Aid in the investigation and recovery of missing material.

(b) *Implementation.* Each applicant for a license, and each licensee that, upon application for modification of its license, would become newly subject to the performance objectives of paragraph (a) of this section, shall submit a fundamental nuclear material control (FNMC) plan describing how the requirements of paragraph (c) of this section will be met. The FNMC plan shall be implemented when a license is issued or modified to authorize the activities being addressed in paragraph (a) of this section, or by the date specified in a license condition.

(c) *System capabilities.* To meet the general performance objectives of paragraph (a) of this section, the material control and accounting system must include the capabilities described in paragraph (c) (1) through (8) of this section. The licensee shall:

(1) Establish, document, and maintain a management structure which assures clear overall responsibility for material control and accounting functions, independence from production responsibilities, separation of key responsibilities, and adequate review and use of critical material control and accounting procedures;

(2) Establish and maintain a measurement system which assures that all quantities in the material accounting records are based on measured values;

(3) Follow a measurement control program which assures that measurement bias is estimated and significant biases are eliminated from inventory difference values of record;

(4) In each inventory period, control total material control and accounting measurement uncertainty so that twice its standard error is less than the greater of 9,000 grams of U–235 or 0.25 percent of the active inventory, and assure that any measurement performed under contract is controlled so that the licensee can satisfy this requirement;

(5) Unless otherwise required to satisfy part 75 of this chapter, perform a physical inventory at least every 12 months and, within 60 days after the

start of the inventory, reconcile and adjust the book inventory to the results of the physical inventory, and resolve, or report an inability to resolve, any inventory difference which is rejected by a statistical test which has a 90 percent power of detecting a discrepancy of a quantity of uranium-235 established by NRC on a site-specific basis;

(6) Maintain current knowledge of items when the sum of the time of existence of an item, the time to make a record of the item, and the time necessary to locate the item exceeds 14 days. Store and handle, or subsequently measure, items in a manner so that unauthorized removals of substantial quantities of material from items will be detected. Exempted are items individually containing less than 500 grams of U^{235} up to a total of 50 kilograms of U^{235}, solutions with a concentration of less than 5 grams of U^{235} per liter, and items of waste destined for burial or incineration;

(7) Resolve, on a shipment basis and when required to satisfy part 75 of this chapter, on a batch basis, shipper/receiver differences that exceed both twice the combined measurement standard error for that shipment and 500 grams of U^{235}; and

(8) Independently assess the effectiveness of the material control and accounting system at least every 24 months, and document management's action on prior assessment recommendations.

(d) *Recordkeeping*. (1) Each licensee shall establish records that will demonstrate that the requirements of paragraph (c) of this section have been met and maintain these records for at least 3 years, unless a longer retention time is required by part 75 of this chapter.

(2) Records which must be maintained pursuant to this part may be the original or a reproduced copy or a microform if such reproduced copy or microform is duly authenticated by authorized personnel and the microform is capable of producing a clear and legible copy after storage for the period specified by Commission regulations. The record may also be stored in electronic media with the capability for producing legible, accurate, and complete records during the required retention period. Records such as letters, drawings, specifications, must include all pertinent information such as stamps, initials, and signatures.

The licensee shall maintain adequate safeguards against tampering with and loss of records.

[50 FR 7579, Feb. 25, 1985, as amended at 53 FR 19262, May 27, 1988; 56 FR 55998, Oct. 31, 1991; 67 FR 78145, Dec. 23, 2002]

§ 74.33 Nuclear material control and accounting for uranium enrichment facilities authorized to produce special nuclear material of low strategic significance.

(a) *General performance objectives*. Each licensee who is authorized by this chapter to possess equipment capable of enriching uranium or operate an enrichment facility, and produce, possess, or use more than one effective kilogram of special nuclear material of low strategic significance at any site or contiguous sites, subject to control by the licensee, shall establish, implement, and maintain a NRC-approved material control and accounting system that will achieve the following objectives:

(1) Maintain accurate, current, and reliable information of and periodically confirm the quantities and locations of source material and special nuclear material in the licensee's possession;

(2) Protect against and detect production of uranium enriched to 10 percent or more in the isotope U^{235};

(3) Protect against and detect unauthorized production of uranium of low strategic significance;

(4) Resolve indications of missing uranium;

(5) Resolve indications of production of uranium enriched to 10 percent or more in the isotope U^{235} (for centrifuge enrichment facilities this requirement does not apply to each cascade during its start-up process, not to exceed the first 24 hours);

(6) Resolve indications of unauthorized production of uranium of low strategic significance;

(7) Provide information to aid in the investigation of missing uranium;

(8) Provide information to aid in the investigation of the production of uranium enriched to 10 percent or more in the isotope U^{235}; and

(9) Provide information to aid in the investigation of unauthorized production of uranium of low strategic significance.

(b) *Implementation dates.* Each applicant for a license who would, upon issuance of a license pursuant to any part of this chapter, be subject to the requirements of paragraph (a) of this section shall:

(1) Submit a fundamental nuclear material control plan describing how the performance objectives of § 74.33(a), the system features and capabilities of § 74.33(c), and the recordkeeping requirements of § 74.33(d) will be met; and

(2) Implement the NRC approved plan submitted pursuant to paragraph (b)(1) of this section prior to:

(i) The cumulative receipt of 5,000 grams of U^{235} contained in any combination of natural, depleted, or enriched uranium or

(ii) NRC's issuance of a license to test or operate the enrichment facility; whichever occurs first.

(c) *System features and capabilities.* To meet the general performance objectives of paragraph (a) of this section, the Material Control and Accounting (MC&A) system must include the features and capabilities described in paragraphs (c) (1) through (8) of this section. The licensee shall establish, document, and maintain:

(1) A management structure that ensures:

(i) Clear overall responsibility for MC&A functions;

(ii) Independence of MC&A management from production responsibilities;

(iii) Separation of key MC&A responsibilities from each other; and

(iv) Use of approved written MC&A procedures and periodic review of those procedures;

(2) A measurement program that ensures that all quantities of source material and special nuclear material in the accounting records are based on measured values;

(3) A measurement control program that ensures that:

(i) Measurement bias is estimated and minimized through the measurement control program, and any significant biases are eliminated from inventory difference values of record;

(ii) All MC&A measurement systems are controlled so that twice the standard error of the inventory difference, based on all measurement error contributions, is less than the greater of 5,000 grams of U^{235} or 0.25 percent of the U^{235} of the active inventory for each total plant material balance; and

(iii) Any measurements performed under contract are controlled so that the licensee can satisfy the requirements of paragraphs (c)(3) (i) and (ii) of this section;

(4) A physical inventory program that provides for:

(i) Performing, unless otherwise required to satisfy part 75 of this chapter, a dynamic (nonshutdown) physical inventory of in-process (e.g., in the enrichment equipment) uranium and U^{235} at least every 65 days, and performing a static physical inventory of all other uranium and total U^{235} contained in natural, depleted, and enriched uranium located outside of the enrichment processing equipment at least every 370 calendar days, with static physical inventories being conducted in conjunction with a dynamic physical inventory of in-process uranium and U^{235} so as to provide a total plant material balance at least every 370 calendar days; and

(ii) Reconciling and adjusting the book inventory to the results of the static physical inventory and resolving, or reporting an inability to resolve, any inventory difference that is rejected by a statistical test which has a 90 percent power of detecting a discrepancy of a quantity of U^{235}, established by NRC on a site-specific basis, within 60 days after the start of each static physical inventory;

(5) A detection program, independent of production, that provides high assurance of detecting:

(i) Production of uranium enriched to 10 percent or more in the U^{235} isotope, to the extent that SNM of moderate strategic significance could be produced within any 370 calendar day period;

(ii) Production of uranium enriched to 20 percent or more in the U^{235} isotope; and

(iii) Unauthorized production of uranium of low strategic significance;

(6) An item control program that ensures that:

(i) Current knowledge is maintained of items with respect to identity, uranium and U^{235} content, and stored location; and

(ii) Items are stored and handled, or subsequently measured, in a manner so that unauthorized removal of 500 grams or more of U^{235}, as individual items or as uranium contained in items, will be detected. Exempted from the requirements of paragraph (c)(6) (i) and (ii) of this section are licensed-identified items each containing less than 500 grams U^{235} up to a cumulative total of 50 kilograms of U^{235} and items that exist for less than 14 calendar days;

(7) A resolution program that ensures that any shipper-receiver differences are resolved that are statistically significant and exceed 500 grams U^{235} on:

(i) An individual batch basis; and

(ii) A total shipment basis for all source material and special nuclear material;

(8) An assessment program that:

(i) Independently assesses the effectiveness of the MC&A system at least every 24 months;

(ii) Documents the results of the above assessment;

(iii) Documents management's findings on whether the MC&A system is currently effective; and

(iv) Documents any actions taken on recommendations from prior assessments.

(d) *Recordkeeping*. (1) Each licensee shall establish records that will demonstrate that the performance objectives of paragraph (a) of this section and the system features and capabilities of paragraph (c) of this section have been met and maintain these records in an auditable form, available for inspection, for at least 3 years, unless a longer retention time is required by part 75 of this chapter.

(2) Records that must be maintained pursuant to this part may be the original or a reproduced copy or a microform if such reproduced copy or microform is duly authenticated by authorized personnel and the microform is capable of producing a clear and legible copy after storage for the period specified by Commission regulations. The record may also be stored in electronic media with the capability for producing, on demand, legible, accurate, and complete records during the required retention period. Records such as letters, drawings, and specifications must include all pertinent information such as stamps, initials, and signatures.

(3) The licensee shall maintain adequate safeguards against tampering with and loss of records.

[56 FR 55999, Oct. 31, 1991]

Subpart D—Special Nuclear Material of Moderate Strategic Significance

§ 74.41 Nuclear material control and accounting for special nuclear material of moderate strategic significance.

(a) *General performance objectives*. Each licensee who is authorized to possess special nuclear material (SNM) of moderate strategic significance or SNM in a quantity exceeding one effective kilogram of strategic special nuclear material in irradiated fuel reprocessing operations other than as sealed sources and to use this material at any site other than a nuclear reactor licensed pursuant to part 50 of this chapter; or as reactor irradiated fuels involved in research, development, and evaluation programs in facilities other than irradiated fuel reprocessing plants; or an operation involved with waste disposal, shall establish, implement, and maintain a Commission-approved material control and accounting (MC&A) system that will achieve the following performance objectives:

(1) Maintain accurate, current, and reliable information on, and confirm, the quantities and locations of SNM in the licensee's possession;

(2) Conduct investigations and resolve any anomalies indicating a possible loss of special nuclear material;

(3) Permit rapid determination of whether an actual loss of a significant quantity of SNM has occurred, with significant quantity being either:

(i) More than one formula kilogram of strategic SNM; or

(ii) 10,000 grams or more of uranium-235 contained in uranium enriched up to 20.00 percent.

(4) Generate information to aid in the investigation and recovery of missing SNM in the event of an actual loss.

(b) *Implementation schedule.* Each applicant for a license, and each licensee that, upon application for modification of its license, would become newly subject to the requirements of paragraph (a) of this section shall:

(1) Submit a fundamental nuclear material control (FNMC) plan describing how the performance objectives of § 74.41(a) will be achieved, and how the system capabilities required by § 74.41(c) will be met; and

(2) Implement the NRC-approved FNMC plan submitted pursuant to paragraph (b)(1) of this section upon the Commission's issuance or modification of a license or by the date specified in a license condition.

(c) *System capabilities.* To achieve the performance objectives specified in § 74.41(a), the MC&A system must include the capabilities described in §§ 74.43 and 74.45, and must incorporate checks and balances that are sufficient to detect falsification of data and reports that could conceal diversion of SNM by:

(1) A single individual, including an employee in any position; or

(2) Collusion between two individuals, one or both of whom have authorized access to SNM.

[67 FR 78146, Dec. 23, 2002]

§ 74.43 Internal controls, inventory, and records.

(a) *General.* Licensees subject to § 74.41 shall maintain the internal control, inventory, and recordkeeping capabilities required in paragraphs (b), (c), and (d) of this section.

(b) Internal controls.

(1) A management structure shall be established, documented, and maintained that assures:

(i) Clear overall responsibility for material control and accounting (MC&A) functions;

(ii) Independence from production and manufacturing responsibilities; and

(iii) Separation of key responsibilities.

(2) The overall planning, coordination, and administration of the MC&A functions for special nuclear material (SNM) shall be vested in a single individual at an organizational level sufficient to assure independence of action and objectiveness of decisions.

(3) The licensee shall provide for the adequate review, approval, and use of written MC&A procedures that are identified in the approved FNMC plan as being critical to the effectiveness of the described system.

(4) The licensee shall assure that personnel who work in key positions where mistakes could degrade the effectiveness of the MC&A system are trained to maintain a high level of safeguards awareness and are qualified to perform their duties and/or responsibilities.

(5) The licensee shall establish, document, and maintain an item control program that:

(i) Provides current knowledge of SNM items with respect to identity, element and isotope content, and stored location; and

(ii) Assures that SNM items are stored and handled, or subsequently measured, in a manner such that unauthorized removal of 200 grams or more of plutonium or uranium-233 or 300 grams or more of uranium-235, as one or more whole items and/or as SNM removed from containers, will be detected.

(6) Exempted from the requirements of paragraph (b)(5) of this section are items that exist for less than 14 calendar days and licensee-identified items each containing less than 200 grams of plutonium or uranium-233 or 300 grams or more of uranium-235 up to a cumulative total of one formula kilogram of strategic SNM or 17 kilograms of uranium-235 contained in uranium enriched to 10.00 percent or more but less than 20.00 percent in the uranium-235 isotope.

(7) Conduct and document shipper-receiver comparisons for all SNM receipts, both on an individual batch basis and a total shipment basis, and ensure that any shipper-receiver difference that is statistically significant and exceeds twice the estimated standard deviation of the difference estimator and 200 grams of plutonium or uranium-233 or 300 grams of uranium-235 is investigated and resolved; and

(8) Perform independent assessments of the total MC&A system, at intervals not to exceed 18 months, that assess

the performance of the system, review its effectiveness, and document management's action on prior assessment recommendations and identified deficiencies. These assessments must include a review and evaluation of any contractor who performs SNM accountability measurements for the licensee.

(c) *Inventory control and physical inventories*. The licensee shall:

(1) Provide unique identification for each item on inventory and maintain inventory records showing the identity, location, and quantity of SNM for these items;

(2) Document all transfers of SNM between designated internal control areas within the licensee's site;

(3) Maintain and follow procedures for tamper-safing of containers or vaults containing SNM, if tamper-safe seals are to be used for assuring the validity of prior measurements, which include control of access to, and distribution of, unused seals and to records showing the date and time of seal application;

(4) Maintain and follow procedures for confirming the validity of prior measurements associated with unencapsulated and unsealed items on ending inventory;

(5) Maintain and follow physical inventory procedures to assure that:

(i) The quantity of SNM associated with each item on ending inventory is a measured value;

(ii) Each item on ending inventory is listed and identified to assure that all items are listed and no item is listed more than once;

(iii) Cutoff procedures for transfers and processing are established so that all quantities are inventoried and none are inventoried more than once;

(iv) Cutoff procedures for records and reports are established so that only transfers for the inventory and material balance interval are included in the records for the material balance period in question;

(v) Upon completion of the physical inventory, all book and inventory records, for total plant and individual internal control areas, are reconciled with and adjusted to the results of the physical inventory; and

(vi) Measurements will be performed for element and isotope content on all quantities of SNM not previously measured.

(6) Conduct physical inventories according to written instructions for each physical inventory which:

(i) Assign inventory duties and responsibilities;

(ii) Specify the extent to which each internal control area and process is to be shut down, cleaned out, and/or remain static;

(iii) Identify the basis for accepting previously made measurements and their limits of error; and

(iv) Designate measurements to be made for physical inventory purposes and the procedures for making these measurements.

(7) Conduct physical inventories of all possessed SNM for each plant at intervals not to exceed 9 calendar months; and

(8) Within 60 calendar days after the start of each physical inventory required by paragraph (c)(7) of this section:

(i) Calculate, for the material balance period terminated by the physical inventory, the inventory difference (ID) and its associated standard error of inventory difference (SEID) for both element and isotope;

(ii) Reconcile and adjust the book record of quantity of element and isotope content, as appropriate, to the results of the physical inventory; and

(iii) Investigate and report to the Director, Office of Nuclear Material Safety and Safeguards, any occurrence of SEID exceeding 0.125 percent of active inventory, and any occurrence of ID exceeding both three times SEID and 200 grams of plutonium or uranium-233 or 300 grams of uranium-235 contained in high enriched uranium, or 9000 grams of uranium-235 contained in low enriched uranium. The report shall include a statement of the probable reasons for the excessive inventory difference and the corrective actions taken or planned.

(d) *Recordkeeping*. The licensee shall:

(1) Maintain records of the receipt, shipment, disposal, and current inventory associated with all possessed SNM;

(2) Maintain records of the quantities of SNM added to and removed from process;

(3) Maintain records of all shipper-receiver evaluations associated with SNM receipts;

(4) Retain each record pertaining to receipt and disposal of SNM until the Commission terminates the license; and

(5) Establish records that will demonstrate that the performance objectives of § 74.41(a)(1) through (4), the system capabilities of paragraphs (b) and (c) of this section and § 74.45(b) and (c) have been met, and maintain these records in an auditable form, available for inspection, for at least 3 years, unless a longer retention time is specified by § 74.19(b), part 75 of this chapter, or by a specific license condition.

[67 FR 78146, Dec. 23, 2002]

§ 74.45 Measurements and measurement control.

(a) *General*. Licensees subject to § 74.41 of this part shall establish and maintain the measurement and measurement control capabilities required by paragraphs (b) and (c) of this section.

(b) *Measurements*. The licensee shall:

(1) Establish, maintain, and use a program for the measurement of all SNM received, produced, transferred between internal control areas, on inventory, or shipped, discarded, or otherwise removed from inventory, except for:

(i) Sealed sources that have been determined by other means to contain less than 10 grams of uranium-235, uranium-233, or plutonium each;

(ii) Samples received, transferred between internal control areas, or on inventory that have been determined by other means to contain less than 10 grams of uranium-235, uranium-233, or plutonium each;

(iii) Receipt of sealed sources, of any quantity, previously manufactured and shipped by the licensee and which are returned to the licensee, provided the unique identity and encapsulation integrity have not been compromised, and the booked receipt quantity equals the previously shipped quantity for the involved sealed sources; and

(iv) Heterogeneous scrap that cannot be accurately measured in its as received form, provided this scrap is measured after dissolution within 18 months of receipt. The after dissolution measurement must include measurement of both the resulting solution and any undissolved residues, before any co-mingling with other scrap solutions or residues.

(2) Maintain and follow a program for the development and use of written procedures that includes documented review and approval of these procedures, and any revisions thereof, before use, for:

(i) Preparing or acquiring, maintaining, storing, and using reference standards;

(ii) Calibrating measurement systems, performing bulk mass and volume measurements, conducting nondestructive assay measurements, obtaining samples, and performing laboratory analyses for element concentration and isotope abundance; and

(iii) Recording, reviewing, and reporting measurements.

(c) *Measurement control*. To maintain measurement quality and to estimate measurement uncertainty values, the licensee shall:

(1) Assign responsibility for planning, developing, coordinating, and administering a measurement control program to an individual who has no direct responsibility for performing measurements or for SNM processing or handling, and who holds a position at an organizational level which permits independence of action and has adequate authority to obtain all the information required to monitor and evaluate measurement quality as required by this section.

(2) Ensure that any contractor who performs MC&A measurements services conforms with applicable requirements in paragraphs (c)(5), (6), (7), (10) and (11) of this section. Conformance must include reporting by the contractor of sufficient measurement control data to allow the licensee to calculate bias corrections and measurement limits of error.

(3) Ensure that potential sources of sampling error are identified and that samples are representative by performing process sampling tests using well characterized materials to establish or verify the applicability of utilized procedures for sampling SNM and

for maintaining sample integrity during transport and storage. These sampling tests or sample integrity tests, as appropriate, shall be conducted whenever:

(i) A new sampling procedure or technique is used, or new sampling equipment is installed;

(ii) A sampling procedure, technique, or sampling equipment is modified to the extent that a systematic sampling error could be introduced; and

(iii) Sample containers, sample transport methods, or sample storage conditions are changed or modified to the extent that a systematic sampling error could be introduced.

(4) Establish and maintain a measurement control program so that for each inventory period the SEID is less than 0.125 percent of the active inventory, and assure that any MC&A measurements performed under contract are controlled so that the licensee can satisfy this requirement.

(5) Generate current data on the performance of each measurement system used during each material balance period for the establishment of measured values and estimated measurement uncertainties, including estimates of bias, variance components for calibration, sampling, and repeat measurements. The program data must reflect the current process and measurement conditions existing at the time the control measurements are made.

(6) Use standards on an ongoing basis for the calibration and control of all measurement systems used for SNM accountability. Calibrations shall be repeated whenever any significant change occurs in a measurement system or when program data indicate a need for recalibration. Calibrations and control standard measurements shall be based on standards whose assigned values are traceable to certified reference standards or certified standard reference materials. Additionally, control standards shall be representative of the process material or items being measured by the measurement system in question.

(7) Conduct control measurements to provide current data for the determination of random error behavior. On a predetermined schedule, the program shall include, as appropriate:

(i) Replicate analyses of individual samples;

(ii) Analysis of replicate process samples;

(iii) Replicate volume measurements of bulk process batches;

(iv) Replicate weight measurements of process items and bulk batches, or alternatively, the use of data generated from the replicate weighings of control standard weights as derived from the control standard program; and

(v) Replicate NDA measurements of individual process containers (items), or alternatively, the use of data generated from the replicate measurements of NDA control standards as derived from the control standard program.

(8) Use all measurements and measurement controls generated during the current material balance period for the estimation of the SEID.

(9) Evaluate with appropriate statistical methods all measurement system data generated in paragraph (c)(5) of this section to determine significant contributors to the measurement uncertainties associated with inventory differences and shipper-receiver differences, so that if SEID exceeds the limits established in paragraph (c)(4) of this section, the cause of the excessive SEID can be identified for corrective action with respect to controlling the standard error within applicable limits.

(10) Establish and maintain a statistical control system, including control charts and formal statistical procedures, designed to monitor the quality of each measurement device or system. Control chart limits must be established to be equivalent to levels of significance of 0.05 and 0.001.

(11) Promptly investigate and take any appropriate corrective action whenever a control datum exceeds an 0.05 control limit, and whenever a control datum exceeds an 0.001 control limit, the measurement system that generated the datum shall immediately be placed out-of-service with respect to MC&A measurements until the deficiency has been corrected and the system brought into control within the 0.05 control limits.

[67 FR 78146, Dec. 23, 2002]

Subpart E—Formula Quantities of Strategic Special Nuclear Material

SOURCE: 52 FR 10040, Mar. 30, 1987, unless otherwise noted.

§ 74.51 Nuclear material control and accounting for strategic special nuclear material.

(a) *General performance objectives.* Each licensee who is authorized to possess five or more formula kilograms of strategic special nuclear material (SSNM) and to use such material at any site, other than a nuclear reactor licensed pursuant to part 50 of this chapter, an irradiated fuel reprocessing plant, an operation involved with waste disposal, or an independent spent fuel storage facility licensed pursuant to part 72 of this chapter shall establish, implement, and maintain a Commission-approved material control and accounting (MC&A) system that will achieve the following objectives:

(1) Prompt investigation of anomalies potentially indicative of SSNM losses;

(2) Timely detection of the possible abrupt loss of five or more formula kilograms of SSNM from an individual unit process;

(3) Rapid determination of whether an actual loss of five or more formula kilograms occurred;

(4) Ongoing confirmation of the presence of SSNM in assigned locations; and

(5) Timely generation of information to aid in the recovery of SSNM in the event of an actual loss.

(b) *System capabilities.* To achieve the general performance objectives specified in § 74.51(a), the MC&A system must provide the capabilities described in §§ 74.53, 74.55, 74.57 and 74.59 and must incorporate checks and balances that are sufficient to detect falsification of data and reports that could conceal diversion by:

(1) An individual, including an employee in any position; or

(2) Collusion between an individual with MC&A responsibilities and another individual who has responsibility or control within both the physical protection and the MC&A systems.

(c) *Implementation dates.* Each applicant for a license, and each licensee that, upon application for modification of a license, would become newly subject to paragraph (a) of this section, shall submit a fundamental nuclear material control (FNMC) plan describing how the MC&A system shall satisfy the requirement of paragraph (b) of this section. The FNMC plan shall be implemented when a license is issued or modified to authorize the activities being addressed in paragraph (a) of this section, or by the date specified in a license condition.

(d) *Inventories.* Notwithstanding § 74.59(f)(1), licensees shall perform at least three bimonthly physical inventories after implementation of the NRC approved FNMC Plan and shall continue to perform bimonthly inventories until performance acceptable to the NRC has been demonstrated and the Commission has issued formal approval to perform semiannual inventories. Licensees who have prior experience with process monitoring and/or can demonstrate acceptable performance against all Plan commitments may request authorization to perform semiannual inventories at an earlier date.

[52 FR 10040, Mar. 30, 1987, as amended at 63 FR 26963, May 15, 1998; 67 FR 78148, Dec. 23, 2002]

§ 74.53 Process monitoring.

(a) Licensees subject to § 74.51 shall monitor internal transfers, storage, and processing of SSNM. The process monitoring must achieve the detection capabilities described in paragraph (b) of this section for all SSNM except:

(1) SSNM that is subject to the item loss detection requirements of § 74.55;

(2) Scrap in the form of small pieces, cuttings, chips, solutions, or in other forms that result from a manufacturing process, held in containers of 30 gallons or larger, with an SSNM content of less than 0.25 grams per liter;

(3) SSNM with an estimated measurement standard deviation greater than five percent that is either input or output material associated with a unit that processes less than five formula kilograms over a consecutive three-month period; and

(4) SSNM involved in research and development operations that process less than five formula kilograms during any seven-consecutive-day period.

(b) *Unit process detection capability.* For each unit process, a licensee shall establish a production quality control program capable of monitoring the status of material in process. The program shall include:

(1) A statistical test that has at least a 95 percent power of detecting an abrupt loss of five formula kilograms within three working days of a loss of Category IA material from any accessible process location and within seven calendar days of a loss of Category IB material from any accessible process location;

(2) A quality control test whereby process differences greater than three times the estimated standard deviation of the process difference estimator and 25 grams of SSNM are investigated; and

(3) A trend analysis for monitoring and evaluating sequences of material control test results from each unit process to determine if they indicate a pattern of losses or gains that are of safeguards significance.

(c) For research and development operations exempt from the requirements of paragraph (b) of this section, the licensee shall:

(1) Perform material balance tests on a lot or a batch basis, as appropriate, or monthly, whichever is sooner, and investigate any difference greater than 200 grams of plutonium or U–233 or 300 grams of U–235 that exceeds three times the estimated standard error of the inventory difference estimator;

(2) Evaluate material balance results generated during an inventory period for indications of measurement biases or unidentified loss streams and investigate, determine the cause(s) of, and institute corrective action for cumulative inventory differences generated during an inventory period that exceed three formula kilograms of SSNM.

§ 74.55 Item monitoring.

(a) Licensees subject to § 74.51 shall provide the detection capability described in paragraph (b) of this section for laboratory samples containing less than 0.05 formula kilograms of SSNM and any uniquely identified items of SSNM that have been quantitatively measured, the validity of that measurement independently confirmed, and that additionally have been either:

(1) Tamper-safed or placed in a vault or controlled access area that provides protection at least equivalent to tamper-safing; or

(2) Sealed such that removal of SSNM would be readily and permanently apparent (e.g., encapsulated).

(b) The licensee shall verify on a statistical sampling basis, the presence and integrity of SSNM items. The statistical sampling plan must have at least 99 percent power of detecting item losses that total five formula kilograms or more, plant-wide, within:

(1) Thirty calendar days for Category IA items and 60 calendar days for Category IB items contained in a vault or in a permanently controlled access area isolated from the rest of the material access area (MAA);

(2) Three working days for Category IA items and seven calendar days for Category IB items located elsewhere in the MAA, except for reactor components measuring at least one meter in length and weighing in excess of 30 kilograms for which the time interval shall be 30 days;

(3) Sixty calendar days for items in a permanently controlled access area outside of an MAA; or

(4) Sixty calendar days for samples in a vault or permanently controlled access area and 30 calendar days for samples elsewhere in the MAA for samples each containing less than 0.05 formula kilograms of SSNM.

(c) Items containing scrap in the form of small pieces, cuttings, chips, solutions, or in other forms that result from a manufacturing process, held in containers of 30 gallon or larger, with an SSNM concentration of less than 0.25 grams per liter are exempt from the requirements of paragraph (b) of this section.

[52 FR 10040, Mar. 30, 1987, as amended at 80 FR 45844, Aug. 3, 2015]

§ 74.57 Alarm resolution.

(a) Licensees subject to § 74.51 shall provide the MC&A alarm resolution capabilities described in paragraphs (b) through (f) of this section.

(b) Licensees shall resolve the nature and cause of any MC&A alarm within approved time periods.

(c) Each licensee shall notify the NRC Operations Center by telephone of

any MC&A alarm that remains unresolved beyond the time period specified for its resolution in the licensee's fundamental nuclear material control plan. Notification must occur within 24 hours except when a holiday or weekend intervenes in which case the notification must occur on the next scheduled workday. The licensee may consider an alarm to be resolved if:

(1) Clerical or computational error is found that clearly was the cause for the alarm; or

(2) An assignable cause for the alarm is identified or it is substantiated that no material loss has occurred.

(d) If a material loss has occurred, the licensee shall determine the amount of SSNM lost and take corrective action to:

(1) Return out-of-place SSNM, if possible, to its appropriate place;

(2) Update and correct associated records; and

(3) Modify the MC&A system, if appropriate, to prevent similar future occurrences.

(e) The licensee shall provide an ability to rapidly assess the validity of alleged thefts.

(f) If an abrupt loss detection estimate exceeds five formula kilograms of SSNM:

(1) Material processing operations related to the alarm must be suspended until completion of planned alarm resolution activities, unless the suspension of operations will adversely affect the ability to resolve the alarm. Operation of continuous processes may continue for 24 hours from the time of the occurrence of the alarm during which time checks shall be made for mistakes in records or calculations that could have caused the alarm.

(2) Within 24 hours, the licensee shall notify the NRC Operations Center by telephone that an MC&A alarm resolution procedure has been initiated.

[52 FR 10040, Mar. 30, 1987, as amended at 54 FR 6877, Feb. 15, 1989; 55 FR 5979, Feb. 21, 1990; 60 FR 24553, May 9, 1995; 67 FR 78148, Dec. 23, 2002]

§ 74.59 Quality assurance and accounting requirements.

(a) Licensees subject to § 74.51 shall provide the quality assurance and accounting capabilities described in paragraphs (b) through (h) of this section.

(b) *Management structure.* The licensee shall:

(1) Establish and maintain a management structure that includes clear overall responsibility for planning, coordinating, and administering material control and accounting functions, independence of material control and accounting functions from production responsibilities, and separation of functions such that the activities of one individual or organizational unit serve as controls over and checks of the activities of others; and

(2) Provide for the adequate review, approval, and use of those material control and accounting procedures that are identified in the approved FNMC plan as being critical to the effectiveness of the described system.

(c) *Personnel qualification and training.* The licensee shall assure that personnel who work in key positions where mistakes could degrade the effectiveness of the material control and accounting system are trained to maintain a high level of safeguards awareness and are qualified to perform their duties and/or responsibilities.

(d) *Measurements.* The licensee shall establish and maintain a system of measurements sufficient to:

(1) Substantiate the plutonium element and uranium element and isotope content of all SSNM received, produced, transferred between areas of custodial responsibility, on inventory, or shipped, discarded, or otherwise removed from inventory;

(2) Enable the estimation of the standard deviation associated with each measured quantity; and

(3) Provide the data necessary for performance of the material control tests required by § 74.53(b).

(e) *Measurement control.* The licensee shall assure that the quality of SSNM measurement systems and material processing practices is continually controlled to a level of effectiveness sufficient to satisfy the capabilities required for detection, response, and accounting. To achieve this objective the licensee shall:

(1) Perform engineering analyses and evaluations of the design, installation, preoperational tests, calibration, and

operation of all measurement systems to be used for MC&A purposes;

(2) Perform process and engineering tests using well characterized materials to establish or to verify the applicability of existing procedures for mixing and sampling SSNM and maintaining sample integrity during transport and storage. Tests must be repeated at least every three years, at any time there is a process modification that alters the physical or chemical composition of the SSNM, or whenever there is a change in the sampling technique or equipment; and

(3) Generate current data on the performance of measurement processes, including, as appropriate, values for bias corrections, uncertainties on calibration factors, and random error standard deviations. The program must include:

(i) The onging use of standards for calibration and control of all applicable measurement systems. Calibrations must be repeated whenever any change in a measurement system occurs which has the potential to affect a measurement result or when program data, generated by tests performed at a predetermined frequency, indicate a need for recalibration. Calibrations and tests must be based on standards with traceability to national standards or nationally accepted measurement systems; and

(ii) A system of control measurements to provide current data for the estimation of the standard deviations that are significant contributors to the measurement uncertainties associated with shipper/receiver differences, inventory differences, and process differences.

(4) Utilize the data generated during the current material balance period for the estimation of the standard error of the inventory difference (SEID) and the standard error of the process differences. Calibration and measurement error data collected and used during immediately preceding material balance periods may be combined with current data provided that the measurement systems are in statistical control and the combined data are utilized in characterizing the unknowns.

(5) Evaluate all program data and information to assure that measurement performance is so controlled that the SEID estimator is less than 0.1 percent of active inventory.

(6) Apply bias corrections by an appropriate procedure whereby:

(i) Bias corrections are applied to individual items if for any measurement system the relative bias estimate exceeds twice the standard deviation of its estimator, the absolute bias estimate exceeds 50 grams of SSNM when applied across all affected items, and the absolute bias estimate on an individual item basis exceeds the rounding error of affected items; and

(ii) All biases (regardless of significance) that are not applied as corrections to individual items are applied as a correction to the inventory difference.

(7) Investigate and take corrective action, as appropriate, to identify and reduce associated measurement biases when, for like material types (*i.e.*, measured by the same measurement system), the net cumulative shipper/receiver differences accumulated over a six-month period exceed the larger of one formula kilogram or 0.1 percent of the total amount received.

(8) Establish and maintain a statistical control system designed to monitor the quality of each type of program measurement. Control limits must be established to be equivalent to levels of significance of 0.05 and 0.001. Control data exceeding the 0.05 limits must be investigated and corrective action taken in a timely manner. Whenever a single data point exceeds the 0.001 control limit, the measurement system in question must not be used for material control and accounting purposes until it has been brought into control at the 0.05 level.

(f) *Physical inventory*. The licensee shall:

(1) Except as required by part 75 of this Chapter, perform a physical inventory at least every six calendar months and within 45 days after the start of the ending inventory:

(i) Calculate the inventory difference (ID); estimate the standard error of the inventory difference (SEID); and investigate and report any SEID estimate of 0.1 percent or more of active inventory, and any ID that exceeds both three times SEID and 200 grams of plutonium

or uranium-233, or 300 grams of uranium-235 contained in high enriched uranium.

(ii) If required to perform an investigation pursuant to paragraph (f)(1)(i) of this section, evaluate the significance of the inventory difference relative to expected performance as determined from an analysis of an appropriate sequence of historical inventory differences;

(iii) Investigate and report, by an appropriate method listed in § 74.6, to the Director, Office of Nuclear Material Safety and Safeguards, any difference that exceeds three times the standard deviation determined from the sequential analysis;

(iv) Perform a reinventory if directed to do so by the Commission; and

(v) Reconcile and adjust the plant and subsidiary book records to the results of the physical inventory.

(2) Implement policies, practices, and procedures designed to ensure the quality of physical inventories. These must include:

(i) Development of procedures for tamper-safing of containers or vaults containing SSNM not in process that include adequate controls to assure the validity of assigned SSNM values;

(ii) Maintenance of records of the quantities of SSNM added to and removed from process;

(iii) Requirements for signed documentation of all SSNM transfers between areas with different custodial responsibility that reflect all quantities of SSNM transferred;

(iv) Means for control of and accounting for internal transfer documents;

(v) Cutoff procedures for transfers and processing so that all quantities of SSNM are inventoried and none are inventoried more than once;

(vi) Cutoff procedures for records and reports so that all transfers for the inventory and material balance interval and no others are included in the records;

(vii) Inventory procedures for sealed sources and containers or vaults containing SSNM that assure reliable identification and quantification of contained SSNM;

(viii) Inventory procedures for in-process SSNM that provide for measurement of quantities not previously measured for element and isotope, as appropriate, and remeasurement of material previously measured but whose validity has not been assured by tamper-safing or equivalent protection; and

(ix) Written instructions for conducting physical inventories that detail assignments, responsibilities, and preparation for and performance of an inventory.

(g) *Accounting.* The licensee shall establish auditable records sufficient to demonstrate that the requirements of §§ 74.53, 74.55, 74.57, and 74.59 have been met and retain those records for at least three years unless a longer retention period is required by part 75 of this Chapter.

(h) *Internal control.* The licensee shall:

(1) Establish procedures for shipping and receiving SSNM that provide for:

(i) Accurate identification and measurement of the quantities shipped and received;

(ii) Review and evaluation of shipper/receiver differences on an individual container or lot basis, as appropriate, on a shipment basis, and on a batch basis when required by part 75 of this Chapter;

(iii) Investigation and corrective action when shipper/receiver differences exceed twice the estimated standard deviation of the difference estimator and the larger of 0.5 percent of the amount of SSNM in the container, lot, or shipment, as appropriate, or 50 grams of SSNM; and

(iv) Documentation of shipper/receiver difference evaluations, investigations, and corrective actions.

(2) Establish a scrap control program that assures that:

(i) Internally generated scrap and scrap from other licensees or contractors is segregated until accountability is established; and

(ii) Any scrap measured with a standard deviation greater than five percent of the measured amount is recovered so that the results are segregated by inventory period and recovered within six months of the end of the inventory period in which the scrap was generated except where it can be demonstrated that the scrap measurement

uncertainty will not cause noncompliance with § 74.59(e)(5).

(3) Incorporate checks and balances in the MC&A system sufficient to control the rate of human errors in material control and accounting information.

(4) Perform independent assessments at least every 12 months that assess the performance of the MC&A system, review its effectiveness, and document management's action on prior assessment recommendations. Assessments must include an evaluation of the measurement control program of any outside contractor laboratory performing MC&A measurements for a licensee, unless the contractor is also subject to the requirements of § 74.59(e).

(5) Assign custodial responsibility in a manner that ensures that such responsibility can be effectively executed for all SSNM possessed under license.

[52 FR 10040, Mar. 30, 1987, as amended at 54 FR 6878, Feb. 15, 1989; 55 FR 5979, Feb. 21, 1990; 60 FR 24553, May 9, 1995; 67 FR 78148, Dec. 23, 2002; 68 FR 58822, Oct. 10, 2003]

Subpart F—Enforcement

§ 74.81 Inspections.

(a) Each licensee shall afford to the Commission at all reasonable times opportunity to inspect special nuclear material and the premises and facilities wherein special nuclear material is used, produced, or stored.

(b) Each licensee shall make available to the Commission for inspection, upon reasonable notice, records kept by the licensee pertaining to its receipt, possession, use, acquisition, import, export, or transfer of special nuclear material.

(c)(1) In the case of fuel cycle facilities where nuclear reactor fuel is fabricated or processed, each licensee shall upon request by the Director, Office of Nuclear Material Safety and Safeguards or the appropriate NRC Regional Administrator, provide rent-free office space for the exclusive use of Commission inspection personnel. Heat, air conditioning, light, electrical outlets, and janitorial services shall be furnished by each licensee. The office shall be convenient to and have full access to the facility, and shall provide the inspector both visual and acoustic privacy.

(2) For a site with a single fuel facility licensed pursuant to part 70 of this chapter, the space provided shall be adequate to accommodate a full-time inspector, a part-time secretary, and transient NRC personnel. It will be generally commensurate with other office facilities at the site. A space of 250 square feet either within the site's office complex or in an office trailer or other on-site space is suggested as a guide. For sites containing multiple fuel facilities, additional space may be requested to accommodate additional full-time inspector(s). The office space that is provided shall be subject to the approval of the Director, Office of Nuclear Material Safety and Safeguards or the appropriate NRC Regional Administrator. All furniture, supplies, and communication equipment will be furnished by the Commission.

(3) The licensee shall afford any NRC resident inspector assigned to their site, or other NRC inspectors identified by the Director of the Office of Nuclear Material Safety and Safeguards as likely to inspect the facility, immediate unfettered access, equivalent to access provided regular plant employees, following proper identification and compliance with applicable access control measures for security, radiological protection, and personal safety.

(d) At a facility using and possessing a formula quantity of strategic special nuclear material in unirradiated form, the licensee may not announce or otherwise communicate to its employees or site contractors the arrival or presence of an NRC safeguards inspector unless specifically requested to do so by the safeguards inspector.

[50 FR 7579, Feb. 25, 1985, as amended at 52 FR 31613, Aug. 21, 1987; 54 FR 6878, Feb. 15, 1989; 55 FR 5979, Feb. 21, 1990; 58 FR 29522, May 21, 1993]

§ 74.82 Tests.

Each licensee shall perform, or permit the Commission to perform, any tests that the Commission deems appropriate or necessary for the administration of the regulations in this part, including tests of:

(a) Special nuclear material;

(b) Facilities where special nuclear material is utilized, produced, or stored; and

(c) Other equipment and devices used in connection with the production, utilization, or storage of special nuclear material.

§ 74.83 Violations.

(a) The Commission may obtain an injunction or other court order to prevent a violation of the provisions of—

(1) The Atomic Energy Act of 1954, as amended;

(2) Title II of the Energy Reorganization Act of 1974, as amended; or

(3) A regulation or order issued pursuant to those Acts.

(b) The Commission may obtain a court order for the payment of a civil penalty imposed under section 234 of the Atomic Energy Act:

(1) For violations of—

(i) Sections 53, 57, 62, 63, 81, 82, 101, 103, 104, 107, or 109 of the Atomic Energy Act of 1954, as amended;

(ii) Section 206 of the Energy Reorganization Act;

(iii) Any rule, regulation, or order issued pursuant to the sections specified in paragraph (b)(1)(i) of this section;

(iv) Any term, condition, or limitation of any license issued under the sections specified in paragraph (b)(1)(i) of this section.

(2) For any violation for which a license may be revoked under section 186 of the Atomic Energy Act of 1954, as amended.

[57 FR 55079, Nov. 24, 1992]

§ 74.84 Criminal penalties.

(a) Section 223 of the Atomic Energy Act of 1954, as amended, provides for criminal sanctions for willful violation of, attempted violation of, or conspiracy to violate, any regulation issued under sections 161b, 161i, or 161o of the Act. For purposes of section 223, all the regulations in part 74 are issued under one or more of sections 161b, 161i, or 161o, except for the sections listed in paragraph (b) of this section.

(b) The regulations in part 74 that are not issued under sections 161b, 161i, or 161o for the purposes of section 223 are as follows: §§ 74.1, 74.2, 74.4, 74.5, 74.6, 74.7, 74.8, 74.83 and 74.84.

[57 FR 55079, Nov. 24, 1992]

PART 75—SAFEGUARDS ON NUCLEAR MATERIAL—IMPLEMENTATION OF SAFEGUARDS AGREEMENTS BETWEEN THE UNITED STATES AND THE INTERNATIONAL ATOMIC ENERGY AGENCY

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AUTHORITY: Atomic Energy Act of 1954, secs. 53, 63, 103, 104, 122, 161, 223, 234, 1701 (42 U.S.C. 2073, 2093, 2133, 2134, 2152, 2201, 2273, 2282, 2297f); Energy Reorganization Act of 1974, sec. 201 (42 U.S.C. 5841); Nuclear Waste Policy Act of 1982, secs. 135, 141 (42 U.S.C. 10155, 10161); 44 U.S.C. 3504 note.

Section 75.4 also issued under Nuclear Waste Policy Act secs. 135 (42 U.S.C. 10155, 10161).

SOURCE: 45 FR 50711, July 31, 1980, unless otherwise noted.

GENERAL PROVISIONS

§ 75.1 Purpose.

The purpose of this part is to implement the requirements established by the safeguards agreements between the United States (U.S.) and the International Atomic Energy Agency (IAEA). This part contains requirements to ensure that the U.S. meets its nuclear non-proliferation obligations under the safeguards agreements. These obligations include providing information to the IAEA on the physical location of applicant, licensee, or certificate holder activities; information on source and special nuclear materials; and access to the physical location of applicant, licensee, or certificate holder activities. These obligations are similar to the obligations accepted by other countries.

[83 FR 19609, May 4, 2018]

§ 75.2 Scope.

(a) The regulations in this part apply to all persons licensed by the Nuclear Regulatory Commission (NRC) or an Agreement State; who hold a certificate of compliance, construction permit or authorization issued by the NRC; who have filed an application with the NRC to construct a facility or to receive source or special nuclear material; or who possess source or special nuclear material subject to NRC regulation under 10 CFR Chapter I.

(b) The regulations in this part do not apply to facilities or locations determined by the U.S. Government to be associated with activities or information of direct national security significance.

[83 FR 19609, May 4, 2018]

§ 75.3 Exemptions.

The NRC may, upon application of any interested person or upon its own initiative, grant exemptions from the requirements of this part that it determines are authorized by law and consistent with the safeguards agreements, are not inimical to the common defense and security, and are otherwise in the public interest.

[83 FR 19609, May 4 2018]

§ 75.4 Definitions.

As used in this part:

Unless otherwise defined in this section, the terms defined in §§ 40.4, 50.2, and 70.4 of this chapter have the same meaning when used in this part.

Additional Protocol means the Protocol Additional to the Agreement Between the United States of America and the International Atomic Energy Agency for the Application of Safeguards in the United States of America, concluded between the United States and the IAEA in Vienna, Austria, on June 12, 1998, that follows the provisions of INFCIRC/540.

Agreement State as designated in part 150 of this chapter means any State with which the Commission has entered into an effective agreement under subsection 274b. of the Act.

Batch means a portion of nuclear material handled as a unit for accounting purposes at a key measurement point and for which the composition and quantity are defined by a single set of specifications or measurements. The nuclear material may be in bulk form or contained in a number of separate items.

Complementary access means access provided to IAEA inspectors in accordance with the provisions of the Additional Protocol.

Containment (with respect to IAEA safeguards) means containers, devices, or structures that are used to prevent

undetected access to or movement of nuclear material.

Effective kilogram means a unit used in safeguarding nuclear material. The quantity is:

(1) For special nuclear material: The amount specified in § 70.4 of this chapter.

(2) For source material: The amount specified in § 40.4 of this chapter.

Eligible Facilities List means the list of facilities that are eligible for IAEA safeguards inspections under the US/IAEA Safeguards Agreement, which the Secretary of State or his designee last submitted for Congressional review and which was not disapproved. A copy of this list is available for inspection at the NRC Web site, *http://www.nrc.gov*, and/or at the NRC Public Document Room. In accordance with the provisions of the Safeguards Agreement, facilities of direct national security significance are excluded from the Eligible Facilities List.

Environmental sampling (with respect to IAEA Safeguards) means the collection of environmental samples (e.g., air, water, vegetation, soil, or smears from surfaces) at a location specified by the IAEA for the purpose of assisting the IAEA to draw a conclusion about the absence of undeclared nuclear material or nuclear activities.

Facility means:

(1) A production facility or utilization facility as defined in § 50.2 of this chapter;

(2) A plant that converts nuclear material from one chemical form to another (e.g., Uranium hexafluoride plant);

(3) A fuel fabrication plant;

(4) An enrichment plant or isotope separation plant for the separation of isotopes of uranium or to increase the abundance of ^{235}U.

(5) An installation designed to store nuclear material, such as an independent spent fuel storage installation (ISFSI) or a monitored retrievable storage installation (MRS) as defined in § 72.3 of this chapter; or

(6) Any plant or location where the possession of more than 1 effective kilogram of nuclear material is licensed pursuant to Parts 40, 50, 60, 61, 63, 70, 72, 76, or 150 of this chapter or an Agreement State license.

Facility attachment means a document negotiated between the U.S. and the IAEA that establishes safeguards commitments for a particular facility.

IAEA means the International Atomic Energy Agency or its duly authorized representatives.

IAEA material balance area means an area established for IAEA accounting purposes, such that:

(1) The quantity of nuclear material in each transfer into or out of each material balance area can be determined; and

(2) The physical inventory of nuclear material in each material balance area can be determined when necessary in accordance with specified procedures.

Initial protocol means the protocol to the *Agreement Between the United States of America and the International Atomic Energy Agency for the Application of Safeguards in the United States of America* that was concluded with the IAEA and provides the IAEA the right to select a facility for material accounting reporting only without the right to conduct inspections.

Inventory change means an increase or decrease in the quantity of nuclear material in an IAEA material balance area.

Key measurement point means a physical location where nuclear material appears in such a form that it may be measured to determine material flow or inventory. Key measurement points include, but are not limited to, inputs and outputs (including measured discards) and storages in IAEA material balance areas.

Location means any geographical point or area subject to IAEA safeguards under the Additional Protocol because it was identified either by the U.S. in its declarations, or by the IAEA resulting from a question.

Managed access means procedures to protect sensitive or classified information or, to meet safety or physical protection requirements, while allowing the IAEA to accomplish the purpose of a complementary access request.

Nuclear fuel cycle-related manufacturing and construction means those activities related to the manufacture or construction of any of the following: Components for separating the isotopes of uranium or enriching uranium in the

isotope 235, zirconium tubes, heavy water or deuterium, nuclear-grade graphite, irradiated fuel casks and canisters, reactor control rods, criticality safe tanks and vessels, irradiated fuel element chopping machines, and hot cells.

Nuclear fuel cycle-related research and development means those activities specifically related to any process or system development aspect of any of the following: Conversion of nuclear material; enrichment of nuclear material; nuclear fuel fabrication; reactors; critical facilities; reprocessing of nuclear fuel; and processing of intermediate or high-level waste containing plutonium, high-enriched uranium, or uranium-233.

Nuclear material means any source material or any special nuclear material.

Nuclear material outside facilities means nuclear material in the U.S. Caribbean Territories that is not in a facility, and is customarily used in amounts of one effective kilogram or less.

Person means:

(1) Any individual, corporation, partnership, firm, association, trust, estate, public or private institution, group, government agency other than the Commission or the U.S. Department of Energy (except that the Department shall be considered a person within the meaning of the regulations in this part to the extent that its facilities and activities are subject to the licensing and related regulatory authority of the Commission pursuant to law) any State or any political subdivision of, or any political entity within a State, any foreign government or nation or any political subdivision of any such government or nation, or other entity; and

(2) Any legal successor, representative, agent, or agency of the foregoing.

Physical location means a specific geographical point or area, where either nuclear material subject to Safeguards Agreements resides or an activity subject to the Safeguards Agreements occurs.

Safeguards Agreements means the Agreement between the United States of America and the IAEA for the Application of Safeguards in the United States (INFCIRC/288) and all protocols and subsidiary arrangements thereto, and the Agreement between the United States and the International Atomic Energy Agency for the Application of Safeguards in Connection with the Treaty for the Prohibition of Nuclear Weapons in Latin America (INFCIRC/366) and all protocols and subsidiary arrangements thereto.

Small Quantities Protocol means the Small Quantities Protocol to the Agreement between the United States of America and the International Atomic Energy Agency for the Application of Safeguards in Connection with the Treaty for the Prohibition of Nuclear Weapons in Latin America (INFCIRC/366).

Subsidiary Arrangement means a document, negotiated between the U.S. and the IAEA, that formally defines the technical and administrative procedures to implement the measures contained in the Safeguards Agreement.

Surveillance (with respect to IAEA Safeguards) means instrumental or human observation aimed at detecting the movement of nuclear material.

Transitional Facility Attachment means that portion of the ''Transitional Subsidiary Arrangements to the Protocol to the Safeguards Agreement'' that pertains to a particular facility that has been identified under the Initial Protocol.

U.S. Caribbean Territories means those territories for which, de jure or de facto, the U.S. is internationally responsible and which lie within the limits of the geographical zone established in Article 4 of the Treaty for the Prohibition of Nuclear Weapons in Latin America and the Caribbean (Tlatelolco Treaty), which includes: Puerto Rico, the U.S. Virgin Islands, Navassa Island, Serranilla Bank, Baja Nuevo (Petrel Island), and the Guantanamo Bay Naval Base.

U.S.–IAEA Caribbean Territories Safeguards Agreement means the Agreement between the United States of America and the IAEA for the Application of Safeguards in Connection with the Treaty for the Prohibition of Nuclear Weapons in Latin America (INFCIRC/366), and all protocols and subsidiary arrangements thereto.

U.S.–IAEA Safeguards Agreement means the Agreement between the

United States of America and the International Atomic Energy Agency for the Application of Safeguards in the United States (INFCIRC/288), and all protocols and subsidiary arrangements thereto.

[45 FR 50711, July 13, 1980, as amended at 46 FR 58283, Dec. 1, 1981; 53 FR 31683, Aug. 19, 1988; 57 FR 18393, Apr. 30, 1992; 57 FR 33432, July 29, 1992; 63 FR 26963, May 15, 1998; 66 FR 55816, Nov. 2, 2001; 73 FR 78608, Dec. 23, 2008; 83 FR 19609, May 4, 2018]

§ 75.5 Interpretations.

Except as authorized specifically by the Commission in writing, no interpretation of the meaning of the regulations in this part by any officer or employee of the Commission other than a written interpretation by the General Counsel will be recognized to be binding upon the Commission.

§ 75.6 Reporting requirements for facilities, locations, and nuclear material outside facilities.

(a) Except where otherwise specified, all communications concerning the regulations in this Part shall be addressed to the U.S. Nuclear Regulatory Commission, ATTN: Document Control Desk, Washington, DC 20555–0001. Written communications may be delivered in person to the Nuclear Regulatory Commission at One White Flint North, 11555 Rockville Pike, Rockville, MD 20852–2738 between 7:30 a.m. and 4:15 p.m. eastern time. If a submittal deadline falls on a Saturday, Sunday, or a Federal holiday, the next Federal working day becomes the official due date.

(b) Each applicant, licensee, certificate holder, or possessor of nuclear material outside facilities, who has been given notice by the NRC in writing that it is required to report under Safeguards Agreements for its facility, nuclear material outside facilities, or location, shall make its initial and subsequent reports, including attachments, in an appropriate format defined in the instructions. The DOE/NRC forms and their instructions may be accessed at *https://www.nrc.gov/reading-rm/doc-collections/forms*. The AP–A and associated forms may be accessed at *www.AP.gov*.

(c) Facilities—Specific information regarding facilities is to be reported as follows:

Item	Section	Manner of delivery
Initial Inventory Report	75.32	As specified by printed instructions for preparation of DOE/NRC Form–742C.
Inventory Change Reports	75.34	As specified by printed instructions for preparation of DOE/NRC Form–741 and Form–740M.
Material Status Reports	75.35	As specified by printed instructions for preparation of DOE/NRC Form–742, Form–742C, and Form–740M.
Special Reports	75.36	To the NRC Headquarters Operations Center by telephone at the numbers specified in appendix A to part 73 of this chapter.
Advance Notification of Import and Exports or of Domestic Transfers.	75.43	In writing to the NRC, as specified in 75.6(a), 75.44, and 75.45.
Facility information	75.10(d)	As specified by printed instructions for IAEA Design Information Questionnaire forms.
Site information	75.10(e)	As specified by printed instructions for preparation of DOC/NRC Form AP–A and associated forms.

(d) Locations—Specific information regarding locations is to be reported as follows:

Item	Section	Manner of delivery
Fuel cycle-related research and development information	75.11(b)(1)	As specified by printed instructions for preparation of DOC/NRC Form AP–1 and associated forms.
Fuel cycle-related manufacturing and construction information.	75.11(b)(2)	As specified by printed instructions for preparation of DOC/NRC Form AP–1 and associated forms.
Mines and concentration plant information	75.11(b)(3)	As specified by printed instructions for preparation of DOC/NRC Form AP–1 and associated forms.
Impure source material possession information	75.11(b)(4)	As specified by printed instructions for preparation of DOC/NRC Form AP–1 and associated forms.

Item	Section	Manner of delivery
Imports and exports of source material for non-nuclear end uses.	75.11(b)(5)	As specified by printed instructions for preparation of DOC/NRC Form AP–1 and associated forms.
IAEA safeguards-exempted and terminated nuclear material information.	75.11(b)(6)	As specified by printed instructions for preparation of DOC/NRC Form AP–1 and associated forms.
Imports and exports of non-nuclear material and equipment	75.11(b)(7)	As specified by printed instructions for preparation of DOC/NRC Form AP–1 and associated forms.

(e) Nuclear material outside facilities—Specific information regarding nuclear material outside facilities in the U.S. Caribbean Territories is to be reported as follows:

Item	Section	Manner of delivery
Initial Inventory Report	75.32	As specified by printed instructions for preparation of DOE/NRC Form–742C and DOE/NRC Form 740M.
Inventory Change Reports	75.34	As specified by printed instructions for preparation of DOE/NRC Form–741 and DOE/NRC Form–740M.
Material Status Reports	75.35	As specified by printed instructions for preparation of DOE/NRC Form–742, DOE/NRC Form–742C, and DOE/NRC Form–740M.
Special Reports	75.36	To the NRC Headquarters Operations Center (commercial telephone number 301–816–5100).
Advance Notification of Import and Exports or of Domestic Transfers.	75.43	In writing to the NRC, as specified in 75.6(a), 75.43, 75.44, and 75.45.
Nuclear Material Outside Facilities Information	75.12	As specified by printed instructions for preparation of DOE/NRC Form 740M.

[73 FR 78609, Dec. 23, 2008, as amended at 80 FR 45844, Aug. 3, 2015; 83 FR 19610, May 4, 2018, 85 FR 65664, Oct. 16, 2020]

§ 75.7 Notification of IAEA safeguards.

(a) The NRC, by written notice, will inform the applicant, licensee, or certificate holder of those facilities subject to the application of IAEA safeguards under the U.S.–IAEA Safeguards Agreement.

(b) The licensee must inform the NRC in accordance with § 75.6(c):

(1) Before the licensee begins an activity that may be subject to the U.S–IAEA Safeguards Agreement; or

(2) Within 30 days of beginning an activity subject to the Additional Protocol.

(c) The notice provided under paragraph (a) of this section is effective until the NRC informs the licensee or certificate holder, in writing, that its facility is no longer so designated. Whenever a previously designated facility is no longer subject to the application of IAEA safeguards under the U.S.–IAEA Safeguards Agreement, the NRC will give the licensee or certificate holder prompt notice to that effect.

[83 FR 19610, May 4, 2018]

§ 75.8 IAEA inspections.

(a) As provided in the U.S.–IAEA Safeguards Agreement and Additional Protocol, inspections may be ad hoc, routine, special, or a complementary access (or a combination of the foregoing). As provided in the Small Quantities Protocol of the U.S.–IAEA Caribbean Territories Safeguards Agreement, inspections may be ad hoc or special. The objectives of the IAEA inspectors in the performance of inspections are as follows:

(1) Ad hoc inspections to verify information contained in the licensee's, applicant's, certificate holder's, or possessor's of nuclear material outside facilities facility information or initial inventory report, or to identify and verify changes in the situation that have occurred after the inventory date under § 75.32(a) or (b) at any physical location where the initial inventory report or any inspections carried out indicate that nuclear material subject to safeguards pursuant to the Safeguards Agreements may be present;

(2) Ad hoc inspections to identify and, if possible, verify the quantity and composition of the nuclear material referred to in notifications specified

under § 75.43(b) (pertaining to exports) or § 75.43(c) (pertaining to imports) at any place where nuclear material may be located;

(3) Routine inspections are conducted as specified by the facility attachments referred to in § 75.15 to verify nuclear material and as-built facility design at the strategic points and the records maintained under this part;

(4) Special inspections may be conducted at any of the physical locations specified above and any additional places where the NRC (in coordination with other Federal agencies), in response to an IAEA request, finds access to be necessary;

(5) Complementary access may be conducted at a location, using measures permitted under the Additional Protocol and as specified by managed access procedures, for the IAEA inspectors to verify the completeness and accuracy of the information provided on DOC/NRC Form AP–1 or AP–A and associated forms; and

(6) Complementary access must be provided at any additional locations where the Commission (in coordination with other Federal agencies), in response to an IAEA request, finds access to be necessary.

(b) The NRC will notify the applicant, licensee, certificate holder, or possessor of nuclear material outside facilities of each such inspection or complementary access in writing as soon as possible after receiving the IAEA's notice from the U.S. Department of State. The applicant, licensee, certificate holder, or possessor of nuclear material outside facilities should consult with the NRC immediately if the inspection or complementary access would unduly interfere with its activities or if its key personnel cannot be available.

(c) Each applicant, licensee, certificate holder, or possessor of nuclear material outside facilities subject to the provisions of this part shall recognize as a duly authorized representative of the IAEA any person bearing IAEA credentials for whom the NRC has provided written or electronic authorization that the IAEA representative is permitted to conduct inspection activities on specified dates. If the IAEA representative's credentials have not been confirmed by the NRC, the applicant, licensee, certificate holder, or possessor of nuclear material outside facilities shall not admit the person until the NRC has confirmed the person's credentials. The applicant, licensee, certificate holder, or possessor of nuclear material outside facilities shall notify the NRC promptly, by telephone, whenever an IAEA representative arrives at a facility, nuclear material outside facilities, or location without advance notification. The applicant, licensee, certificate holder, or possessor of nuclear material outside facilities shall also contact the NRC, by telephone, within 1 hour with respect to the credentials of any person who claims to be an IAEA representative and shall accept written or electronic confirmation of the credentials from the NRC. Confirmation may be requested through the NRC Operations Center (commercial telephone number 301–816–5100).

(d) Each applicant, licensee, certificate holder, or possessor of nuclear material outside facilities subject to the provisions of this part shall allow the IAEA opportunity to conduct an NRC-approved inspection or complementary access of the facility, nuclear material outside facilities, or location to verify the information submitted under §§ 75.10 through 75.12 and 75.31 through 75.43. The NRC will assign an employee to accompany IAEA representative(s) at all times during the inspection or complementary access. The applicant, licensee, certificate holder, or possessor of nuclear material outside facilities may accompany IAEA representatives who inspect or access the facility, nuclear material outside facilities, or location. The IAEA representatives should not be delayed or otherwise impeded in the exercise of their duties.

(e) Each applicant, licensee, or certificate holder shall permit the IAEA, in conducting an ad hoc, routine, or special inspection at a facility, to:

(1) Examine records kept under § 75.21;

(2) Observe that the measurements of nuclear material at key measurement points for material balance accounting are representative;

(3) Verify the function and calibration of instruments and other measurement control equipment;

(4) Observe that samples at key measurement points for material balance accounting are taken in accordance with procedures that produce representative samples, observe the treatment and analysis of the samples, and obtain duplicates of these samples;

(5) Arrange to use the IAEA's own equipment for independent measurement and surveillance; and

(6) Perform other measures requested by the IAEA and approved by the NRC.

(f) Each applicant, licensee, or certificate holder shall, at the request of an IAEA inspector during an ad hoc, routine, or special inspection at a facility:

(1) Ship material accountancy samples taken for the IAEA's use, in accordance with applicable packaging and export licensing regulations, by the method of carriage and to the address specified by the inspector; and

(2) Take other actions contemplated by the Safeguards Agreement, and included in the safeguards approach approved by the United States and the IAEA, including but not limited to the following examples:

(i) Enabling the IAEA to arrange to install its equipment for measurement and surveillance;

(ii) Enabling the IAEA to apply its seals and other identifying and tamper-indicating devices to containers;

(iii) Making additional measurements and taking additional samples for the IAEA's use;

(iv) Analyzing the IAEA's standard analytical samples;

(v) Using appropriate standards in calibrating instruments and other equipment; and

(vi) Carrying out other calibrations.

(g) Each applicant, licensee, or certificate holder shall permit the IAEA, in conducting complementary access at a location, under the provisions of the Additional Protocol and subsidiary arrangements, to:

(1) Perform visual observations and record observations as photographs;

(2) Conduct environmental sampling, when authorized by the U.S. Government;

(3) Use radiation detection and measurement devices;

(4) Apply seals and other identifying and tamper-indicating devices;

(5) Perform nondestructive measurements and sampling;

(6) Examine records relevant to quantities, origin, and disposition of materials to confirm the accuracy of the information provided under § 75.11;

(7) Examine safeguards-relevant production and shipping records; and

(8) Other objective measures that have been demonstrated to be technically feasible and the use of which has been agreed upon by the IAEA Board of Governors and following consultations between the IAEA and U.S. Government.

(h) Each possessor of nuclear material outside facilities shall permit the IAEA, in conducting an ad hoc or special inspection for nuclear material outside facilities, to:

(1) Observe that the measurements of nuclear material at key measurement points for material balance accounting are representative;

(2) Verify the function and calibration of instruments and other measurement control equipment;

(3) Observe that samples at key measurement points for material balance accounting are taken in accordance with procedures that produce representative samples, observe the treatment and analysis of the samples, and obtain duplicates of these samples;

(4) Arrange to use the IAEA's own equipment for independent measurement and surveillance; and

(5) Perform other measures requested by the IAEA and approved by the NRC.

(i) Each possessor of nuclear material outside facilities shall, at the request of an IAEA inspector during an ad hoc or special inspection for nuclear material outside facilities:

(1) Ship material accountancy samples taken for the IAEA's use, in accordance with applicable packaging and export licensing regulations, by the method of carriage and to the address specified by the inspector; and

(2) Take other actions contemplated by the U.S.–IAEA Caribbean Territories Safeguards Agreement and included in the safeguards approach approved by the United States and the

IAEA, including but not limited to the following examples:

(i) Enabling the IAEA to arrange to install its equipment for measurement and surveillance;

(ii) Enabling the IAEA to apply its seals and other identifying and tamper-indicating devices to containers;

(iii) Making additional measurements and taking additional samples for the IAEA's use;

(iv) Analyzing the IAEA's standard analytical samples;

(v) Using appropriate standards in calibrating instruments and other equipment; and

(vi) Carrying out other calibrations.

(j) Nothing in this section requires or authorizes an applicant, licensee, certificate holder, or possessor of nuclear material outside facilities to carry out any operation that would otherwise constitute a violation of the terms of any applicable license, regulation, or order of the NRC.

[73 FR 78609, Dec. 23, 2008, as amended at 83 FR 19610, May 4, 2018]

§ 75.9 Information collection requirements: OMB approval.

(a) The Nuclear Regulatory Commission, or another U.S. Government agency, has submitted the information collection requirements contained in this Part to the Office of Management and Budget (OMB) for approval as required by the Paperwork Reduction Act (44 U.S.C. 3501 *et seq.*). The NRC may not conduct or sponsor, and a person is not required to respond to, a collection of information unless it displays a currently valid OMB control number. OMB has approved the information collection requirements contained in this Part under control number 3150–0055.

(b) The approved information collection requirements contained in this Part appear in §§ 75.3, 75.6, 75.7a, 75.10, 75.11, 75.12, 75.21, 75.22, 75.23, 75.24, 75.31, 75.32, 75.33, 75.34, 75.35, 75.36, 75.43, 75.44, and 75.45.

(c) This part contains information collection requirements in addition to those approved under the control number specified in paragraph (a) of this section. These information collection requirements and the control numbers under which they are approved are as follows:

(1) In § 75.10, Design Information Questionnaire forms are approved under control number 3150–0056.

(2) In §§ 75.31, 75.32, 75.33, and 75.35, DOE/NRC Form 742 is approved under control number 3150–0004.

(3) In §§ 75.33 and 75.34, DOE/NRC Form 741 is approved under control number 3150–0003.

(4) In §§ 75.34 and 75.35, DOE/NRC Form 740M is approved under OMB control number 3150–0057.

(5) In § 75.35, DOE/NRC Form 742C is approved under control number 3150–0058.

(6) In §§ 75.10 and 75.11, DOC/NRC Forms AP–1, AP–A, and associated forms are approved under control number 0694–0135.

[49 FR 19628, May 9, 1984, as amended at 62 FR 52189, Oct. 6, 1997; 67 FR 67101, Nov. 4, 2002; 73 FR 78610, Dec. 23, 2008; 83 FR 19611, May 4, 2018; 85 FR 65664, Oct. 16, 2020]

Information for Facilities, Locations, and Nuclear Material Outside Facilities

§ 75.10 Facilities.

(a) Each applicant, licensee, or certificate holder subject to the provisions of this Part shall submit facility information, in response to written notification from the NRC, with respect to any facility that the NRC indicates has been identified under the U.S.-IAEA Safeguards Agreement, the Initial Protocol to the Agreement, or meets the Additional Protocol reporting criteria, and in which the applicant, licensee, or certificate holder carries out licensed activities. (The NRC request must state whether the facility has been identified under Article 39(b) of the principal text of the U.S.-IAEA Safeguards Agreement or Article 2(a) of the Initial protocol.) The applicant, licensee, or certificate holder shall submit the requested information to the NRC within the period specified in the NRC's request.

(b) Facility information includes:

(1) The identification of the facility, stating its general character, purpose, nominal capacity (thermal power level, in the case of power reactors), and geographic physical location, and the

name and address to be used for routine purposes;

(2) A description of the general arrangement of the facility with reference, to the extent feasible, to the form, physical location and flow of nuclear material, and to the general layout of important items of equipment which use, produce, or process nuclear material;

(3) A description of features of the facility relating to material accounting, containment, and surveillance;

(4) A description of the existing and proposed procedures at the facility for nuclear material accounting and control, with special reference to material balance areas established by the licensee, measurement of flow, and procedures for physical inventory taking (As part of this description, the applicant, licensee, or certificate holder may identify a process step involving information that it deems to be commercially sensitive and for which it proposes that a special material balance area be established so as to restrict IAEA access to this information); and

(5) A map of the site and information on the size of the buildings and on the general nature of the activities conducted in each building.

(c) Each licensee or certificate holder shall thereafter submit to the NRC information with respect to any modification at the facility affecting the information referred to in paragraph (a) of this section. The following information must be submitted:

(1) Regarding a modification of a type described in the license or certificate conditions: At least 180 days before the modification is scheduled to be started, except that in an emergency or other unforeseen situation a shorter period may be approved by the NRC.

(2) Regarding any other modification relevant to the application of the provisions of the U.S.-IAEA Safeguards Agreement: At the time the first inventory change report is submitted after the modification is completed.

(d) The information specified in paragraphs (b) and (c) of this section, except for the information specified in paragraph (b)(5) of this section, must be prepared on IAEA Design Information Questionnaire forms or other forms supplied by the NRC. The information must be sufficiently detailed to enable knowledgeable determinations to be made in the development of Facility Attachments or amendments thereto, including:

(1) Identification of the features of facilities and nuclear material relevant to the application of safeguards to nuclear material in sufficient detail to facilitate verification;

(2) Determination of IAEA material balance areas to be used for IAEA accounting purposes and selection of those strategic points which are key measurement points and which will be used to determine flow and inventory of nuclear material;

(3) Establishment of the nominal timing and procedures for taking of physical inventories of nuclear material for IAEA accounting purposes;

(4) Establishment of the records and reports requirements and records evaluation procedures;

(5) Establishment of requirements and procedures for verification of the quantity and physical location of nuclear material;

(6) Selection of appropriate combinations of containment and surveillance methods and techniques at the strategic points at which they are to be applied; and

(7) Information on organizational responsibility for material accounting and control.

(e) Information specified in paragraph (b)(5) of this section must be submitted as specified by instructions for DOC/NRC Form AP–A and associated forms and shall contain a site map drawn to scale as an attachment.

(f) The applicant's, licensee's, or certificate holder's security rules for physical protection that will impact the IAEA inspectors at the facility must be included in the facility information only when and to the extent specifically requested by the NRC.

(g) Health and safety rules that are to be observed by the IAEA inspectors at the facility must be included in the facility information.

(h) Information must be provided on the need to manage IAEA access to the facility to protect health and safety or to protect classified, proprietary, or other sensitive information, and on

other protective measures that should be implemented should an IAEA access be requested.

[73 FR 78611, Dec. 23, 2008, as amended at 83 FR 19611, May 4, 2018; 85 FR 65664, Oct. 16, 2020]

§ 75.11 Locations.

(a) As required by the Additional Protocol, each applicant, licensee, or certificate holder shall submit location information to the NRC as specified in the instructions for DOC/NRC Form AP–1 and associated forms.

(b) Location information includes:

(1) Nuclear fuel cycle-related research and development information including a general description of the activity and information specifying the physical location of the activity.

(2) Nuclear fuel cycle-related manufacturing or construction information including a description of the scale of operations for the activity.

(3) Uranium and thorium mine and concentration plant information including information on the physical location, operational status, and the estimated annual production capacity and current annual production of the activity.

(4) Impure source material possession information including the quantities, the chemical composition, and the use or intended use of the material (e.g., nuclear or non-nuclear use).

(5) Imports and exports of source material for non-nuclear end uses including the physical location, quantities, chemical compositions, and use of the imported or exported material.

(6) IAEA-exempted and -terminated nuclear material information including information regarding the quantities, uses, and physical location of the nuclear material.

(7) Imports and exports of non-nuclear material and equipment including the physical location, quantity and description of the materials and equipment.

(c) Information specified in paragraphs (b)(1) through (b)(7) of this section must be supplied as specified in the instructions for DOC/NRC Form AP–1 and associated forms. The Information provided on DOC/NRC Form AP–1 and associated forms must be submitted annually. If the information has not changed, a ''No change'' report must be provided. NRC should also be notified when the activity is no longer performed. The annual report must be submitted by January 31 of each succeeding year after the initial report. The initial report must be submitted no later than 30 calendar days following the date of publication of this rule.

(d) Information must be provided on the need to manage IAEA access to the location to protect health and safety or to protect classified, proprietary, or other sensitive information, and on other protective measures that should be implemented should an IAEA access be requested.

[73 FR 78611, Dec. 23, 2008, as amended at 83 FR 19611, May 4, 2018]

§ 75.12 Nuclear material outside facilities.

A possessor of nuclear material outside facilities shall provide to the NRC the possessor's name and mailing address, physical location of the nuclear material, use of nuclear material, and nuclear material accounting and control procedures, including organizational responsibilities for accountancy and control. This information must be provided annually with the material status report in accordance with §§ 75.6(e) and 75.35(c).

[83 FR 19611, May 4, 2018]

§ 75.13 Communication of information to the International Atomic Energy Agency (IAEA).

(a) Except as otherwise provided in this section, the NRC will furnish to the IAEA all information submitted under §§ 75.10, 75.11, 75.12, and 75.31 through 75.43.

(b)(1) An applicant, licensee, certificate holder, or possessor of nuclear material outside facilities may request that information of particular sensitivity, that it customarily holds in confidence, not be transmitted physically to the IAEA. An applicant, licensee, certificate holder, or possessor of nuclear material outside facilities who makes this request shall, at the time the information is submitted, identify the pertinent document or part thereof and make a full statement of the reasons supporting the request.

(2) In considering such a request, it is the policy of the NRC to achieve an effective balance between legitimate concerns of licensees, applicants, certificate holders, or possessors of nuclear material outside facilities, including protection of the competitive position of the owner of the information, and the undertaking of the United States to cooperate with the IAEA to facilitate the implementation of the safeguards provided for in the Safeguards Agreements. The NRC will take into account the obligation of the IAEA to take every precaution to protect commercial and industrial secrets and other confidential information coming to its knowledge in the implementation of the safeguards agreements.

(3) A request made under § 2.390 of this chapter will not be treated as a request under this section unless the application makes specific reference to this section, nor shall a determination to withhold information from public disclosure necessarily require a determination that such information not be transmitted physically to the IAEA.

(4) If a request is granted, the NRC will determine a physical location where the information will remain readily available for examination by the IAEA and will so inform the applicant, licensee, certificate holder, or possessor of nuclear material outside facilities.

(c) A request made under § 2.390(b) of this chapter will not be treated as a request under this section unless the application makes specific reference to this section, nor shall a determination to withhold information from public disclosure necessarily require a determination that this information not be transmitted physically to the IAEA.

(d) Where consistent with the Safeguards Agreements, the NRC may at its own initiative, or at the request of a licensee, determine that any information submitted under §§ 75.10, 75.11, and 75.12 shall not be physically transmitted to, or made available for examination by, the IAEA.

[83 FR 19611, May 4, 2018]

MATERIAL ACCOUNTING AND CONTROL

§ 75.15 Facility attachments.

(a) The Facility Attachment or Transitional Facility Attachment will document the determinations referred to in § 75.10 and will contain other appropriate provisions.

(b) The NRC will issue license or certificate amendments, as necessary, to implement the U.S.-IAEA Safeguards Agreement and the Facility Attachment (as amended from time to time). The license or certificate amendments through reference to the Facility Attachment or Transitional Facility Attachment, or otherwise, will specify:

(1) IAEA material balance areas;

(2) Types of modifications for which information is required, under § 75.10, to be submitted in advance;

(3) Procedures, as referred to in § 75.21;

(4) The extent to which isotopic composition must be included in batch data (under § 75.22) and advance notification (§ 75.45);

(5) Items to be reported in the concise notes accompanying inventory change reports, as referred to in § 75.34;

(6) Loss limits and changes in containment, as referred to in § 75.36 (pertaining to special reports);

(7) Actions required to be taken under § 75.8(f) at the request of an IAEA inspector;

(8) Procedures to be used for documentation of requests under § 75.46 (pertaining to expenses); and

(9) Other appropriate matters.

(c) The NRC will also issue license or certificate amendments, as necessary, for implementing the Initial Protocol to the U.S.-IAEA Safeguards Agreement and the Transitional Facility Attachment (as amended from time to time).

(d) License or certificate amendments will be made under the NRC's rules of practice (part 2 of this chapter). Specifically, if the licensee or certificate holder does not agree to an amendment, an order modifying the license would be issued under § 2.204 of this chapter.

(e) Subject to constraints imposed by the U.S.-IAEA Safeguards Agreement,

the NRC will afford the applicant, licensee, or certificate holder a reasonable opportunity to participate in the development of the Facility Attachment or Transitional Facility Attachment applicable to the facility, and any amendments thereto, and to review and comment upon any instrument before it has been agreed to by the United States. The NRC will provide to the applicant, licensee, or certificate holder a copy of any such instrument that has been completed under the U.S.-IAEA Safeguards Agreement.

(f) Locations reporting under the Additional Protocol, unless located in a facility selected under Article 39(b) of the main text of the U.S.-IAEA Safeguards Agreement, do not have Facility Attachments or Transitional Facility Attachments.

[73 FR 78612, Dec. 23, 2008, as amended at 83 FR 19612, May 4, 2018]

§ 75.21 General requirements.

(a) Each licensee or certificate holder who has been given notice by the NRC in writing that its facility has been identified under the U.S.–IAEA Safeguards Agreement shall establish, maintain, and follow written material accounting and control procedures.

(b) Each possessor of nuclear material outside facilities in the U.S. Caribbean Territories shall establish, maintain, and follow written material accounting and control procedures.

(c) The material accounting and control procedures required by paragraph (a) of this section shall include, as appropriate:

(1) A measurement system for the determination of the quantities of nuclear material received, produced, shipped, lost or otherwise removed from inventory, and the quantities on inventory;

(2) The evaluation of precision and accuracy of measurements and the estimation of measurement uncertainty;

(3) Procedures for identifying, reviewing and evaluating differences in shipper/receiver measurements;

(4) Procedures, including frequency, for taking a physical inventory;

(5) Procedures for the evaluation of accumulations of unmeasured inventory and unmeasured losses; and

(6) A system of accounting and operating records.

(d)(1) The procedures must, unless otherwise specified in license or certificate conditions, conform to the facility information submitted by the licensee under § 75.10.

(2) Until facility information has been submitted by the applicant, licensee, or certificate holder, the procedures must be sufficient to document changes in the quantity of nuclear material in or at its facility. Observance of the procedures described in §§ 40.61 or 74.15 of this chapter (or the corresponding provisions of the regulations of an Agreement State) by any applicant, licensee, or certificate holder subject thereto constitutes compliance with this paragraph.

(e) The requirements of this section are in addition to any other requirements of this chapter, relating to material accounting and control, that may apply to the licensee.

[45 FR 50711, July 31, 1980, as amended at 53 FR 19263, May 27, 1988; 67 FR 78149, Dec. 23, 2002; 73 FR 78613, Dec. 23, 2008; 83 FR 19612, May 4, 2018]

§ 75.22 Accounting records.

(a) The accounting records required by § 75.21 shall include, for each IAEA material balance area:

(1) All inventory changes, so as to permit a determination of the book inventory at any time;

(2) All measurement results that are used for determination of nuclear material quantities; and

(3) All adjustments and corrections that have been made with respect to inventory changes, book inventories and physical inventories.

(b) The records shall show, for each batch of nuclear material: material identification, batch data and source data. The *batch data* means a separate listing of the total weight of each element of nuclear material (including, as specified in the license conditions, isotopic composition for special nuclear material) with plutonium and enriched uranium measured in grams and natural or depleted uranium and thorium measured in kilograms. The *source data* are the data, recorded during measurement or calibration or used to derive empirical relationships, which identify

nuclear material and provide batch data.

(c) For each inventory change, the records shall show the date of the inventory change and, when appropriate, (1) the originating IAEA material balance area or the shipper, and (2) the receiving IAEA material balance area or the recipient.

§ 75.23 Operating records.

The operating records required by § 75.21 shall include, as appropriate, for each IAEA material balance area:

(a) Those operating data which are used to establish changes in the quantities and composition of nuclear material;

(b) The data obtained from the calibration of tanks and instruments and from sampling and analyses, the procedures employed to control the quality of measurements, and the derived estimates of random and systematic error;

(c) A description of the sequence of the actions taken in preparing for, and in taking, a physical inventory, to ensure that it is correct and complete; and

(d) A description of the actions taken to ascertain the magnitude and cause of any accidental or unmeasured loss that might occur.

§ 75.24 Retention of records.

(a) The applicant, licensee, certificate holder, or possessor of nuclear material outside facilities shall retain as a record any request made pursuant to §§ 75.13(b)(1), 75.13(b)(4), and 75.21 and documents related to that request, which are either prepared or received by that entity, until the NRC terminates the license or certificate, or until the entity no longer possesses nuclear material, whichever occurs later. When records required by these sections are superseded, these records must be retained for 3 years after each change is made.

(b) The applicant, licensee, certificate holder, or possessor of nuclear material outside facilities shall retain the records referred to in §§ 75.22 and 75.23 for at least 5 years.

[83 FR 19612, May 4, 2018]

IAEA Nuclear Material Exemptions and Terminations

SOURCE: 83 FR 19612, May 4, 2018, unless otherwise noted.

§ 75.26 Exemption from IAEA safeguards.

(a) The U.S. Government may request from the IAEA an exemption from IAEA safeguards with respect to nuclear material of the following types:

(1) Source and special nuclear material in gram quantities or less as a sensing component in instruments;

(2) Nuclear material used in nonnuclear activities; and

(3) Plutonium with an isotopic concentration of plutonium-238 exceeding 80 percent.

(b) Nuclear material exempted under paragraph (a) of this section must not exceed the quantity limits specified in the Safeguards Agreements.

(c) The NRC shall provide a prompt notification of an exemption issued by the IAEA to the applicable licensee, certificate holder, or nuclear material outside facilities.

§ 75.27 Requirements for facilities, locations, and nuclear material outside facilities after issuance of IAEA exemptions.

(a) *Licensees of facilities.* After the NRC has notified a licensee of a facility under § 75.26(c) that the IAEA has approved the exemption requested under § 75.26(a) of this part, the licensee:

(1) Shall submit reports to the NRC pursuant to §§ 75.6(c) and 75.31(a); and

(2) Shall not export any nuclear material identified under § 75.26 until the NRC notifies the licensee that IAEA safeguards under the U.S.–IAEA Safeguards Agreement have been re-applied.

(b) *Licensees of locations.* A licensee of a location shall provide annual updates pursuant to § 75.11(c) following notification from the NRC that the IAEA has approved the exemption requested under § 75.26.

(c) *Possessors of nuclear material outside facilities.* After the NRC has notified a possessor of nuclear material outside facilities under § 75.6(c) that the IAEA has approved the exemption

requested under § 75.26(a), a possessor of nuclear material outside facilities:

(1) Shall submit reports to the NRC pursuant to §§ 75.6(e) and 75.31(b); and

(2) Shall not export out of the U.S. Caribbean Territories any nuclear material identified under § 75.26 until the NRC notifies the possessor that IAEA safeguards under the U.S.–IAEA Caribbean Territories Safeguards Agreement have been re-applied.

(d) *Prohibition against commingling of nuclear material in storage.* Licensees of facilities, licensees of locations, and possessors of nuclear material outside facilities shall not store nuclear material exempted under § 75.26 together with nuclear material subject to Safeguards Agreements.

(e) Nuclear material exempted from IAEA safeguards under § 75.26 is not subject to inspections by the IAEA.

§ 75.28 Termination from IAEA safeguards.

(a) Upon request of the U.S. Government, the IAEA may terminate IAEA safeguards on nuclear material that has been consumed, or has been diluted in such a way that it is no longer usable for any nuclear activity relevant from the point of view of safeguards, or has become practicably irrecoverable.

(b) The NRC will notify the affected licensees, certificate holders, and nuclear material outside facilities of the IAEA's termination of IAEA safeguards.

§ 75.29 Requirements for facilities, locations, and nuclear material outside facilities after termination from IAEA safeguards.

(a) *Licensees of facilities.* A licensee of a facility shall submit an Inventory Change Report pursuant to §§ 75.6(c) and 75.31(a) following notification from the NRC that IAEA safeguards have been terminated as described in § 75.28.

(b) *Licensees of locations.* A licensee of a location shall provide annual updates pursuant to § 75.11(c) following notification from the NRC that IAEA safeguards have been terminated as described in § 75.28.

(c) *Possessors of nuclear material outside facilities.* A possessor of nuclear material outside facilities shall submit an Inventory Change Report pursuant to §§ 75.6(e) and 75.31(b) following notification from the NRC that IAEA safeguards have been terminated as described in § 75.28.

(d) Nuclear material that has had IAEA safeguards terminated as described in § 75.28 is not subject to inspections by the IAEA.

REPORTS

§ 75.31 General requirements.

(a) Each licensee or certificate holder who has been given notice by the NRC under § 75.7 that its facility has been identified under the U.S.–IAEA Safeguards Agreement shall make, in an appropriate computer-readable format, an initial inventory report, and thereafter shall make accounting reports, with respect to the facility and, in addition, licensees or certificate holders who have been given notice, under § 75.7 that their facilities are subject to the application of IAEA safeguards, shall make the special reports described in § 75.36. These reports must be based on the records kept under § 75.21. At the request of the NRC, the licensee or certificate holder shall amplify or clarify any report with respect to any matter relevant to implementation of the U.S.–IAEA Safeguards Agreement. Any amplification or clarification must be in writing and must be submitted, to the address specified in the request, within 20 days of the date of the request or other time as may be specified by the NRC.

(b) Each possessor of nuclear material outside facilities (possessor) subject to the U.S.–IAEA Caribbean Territories Safeguards Agreement shall make, in an appropriate computer-readable format, an initial inventory report in accordance with § 75.32 of this report. Thereafter, that possessor shall make accounting reports as described in §§ 75.33 through 75.35 and special reports as described in § 75.36. These reports must be based on the records kept under § 75.21(b). At the request of the NRC, the possessor shall amplify or clarify any report with respect to any matter relevant to implementation of the U.S.–IAEA Caribbean Territories

Safeguards Agreement. Any amplification or clarification must be in writing and must be submitted, to the address specified in the request, within 20 days of the date of the request or other time as may be specified by the NRC.

[83 FR 19613, May 4, 2018]

§ 75.32 Initial inventory report.

(a) *Licensees of facilities*. The initial inventory report must show the quantities of nuclear material at a facility. The quantities reported in the initial inventory report must be accurate as of the last day of the calendar month in which the NRC gives notice to the licensee or certificate holder that an initial inventory report is required (the ''inventory date'' on DOE/NRC Form 742C).

(b) *Possessors of nuclear material outside facilities*. The initial inventory report must show the quantities of nuclear material outside facilities. The quantities reported in the initial inventory report must be accurate as of the last day of the calendar month in which the possessor of nuclear material outside facilities becomes subject to the requirements of this part (the ''inventory date'' on DOE/NRC Form 742C).

(c) *Initial inventory report*. The information in the initial inventory report may be based upon the accounting records. The initial inventory report must be submitted to the NRC on DOE/NRC Form 742C in accordance with the instructions in NUREG/BR–0007 and NMMSS Report D–24 ''Personal Computer Data Input for NRC Licensees.'' Copies of the instructions for completing DOE/NRC Form 742C and DOE/NRC Form 740M may be obtained from the following websites: *http://www.nrc.gov/reading-rm/doc-collections/nuregs/brochures* and *https://nnsa.energy.gov/aboutus/ourprograms/nuclearsecurity/nmmsshome/nmmssinfo/nmmssreports*.

(d) *Report forms*. DOE/NRC Form 742C must be accompanied by DOE/NRC Form 740M if any batch of source material reported in DOE/NRC Form 742C is equal to or less than 0.4 kg.

(e) *Report submission*. The initial inventory report must be submitted to the NRC no later than 20 days after the inventory date.

[83 FR 19613, May 4, 2018]

§ 75.33 Accounting reports.

(a)(1) The accounting reports for each IAEA material balance area must consist of:

(i) Inventory Change Reports (Nuclear Material Transaction Report); and

(ii) Material status reports showing the material balance based on a physical inventory of nuclear material actually present.

(2) These prescribed computer-readable forms replace the following forms which have been submitted in paper form:

(i) The DOE/NRC Form 741; and

(ii) The DOE/NRC Form 742.

(b) The reports shall be based on data available as of the date of reporting and may be corrected at a later date, as required.

[45 FR 50711, July 31, 1980, as amended at 49 FR 19629, May 9, 1984; 59 FR 35622, July 13, 1994; 73 FR 78613, Dec. 23, 2008; 83 FR 19613, May 4, 2018]

§ 75.34 Inventory change reports.

(a) Each licensee of a facility, certificate holder, or possessor of nuclear material outside facilities who transfers nuclear material subject to IAEA safeguards shall submit an Inventory Change Report (Nuclear Material Transaction Report) to the NRC no later than the close of business the next working day after each transfer, in accordance with the instructions in NUREG/BR–0006 and NMMSS Report D–24 ''Personal Computer Data Input for NRC Licensees.'' Each licensee of a facility, certificate holder, or possessor of nuclear material outside facilities who receives nuclear material subject to IAEA safeguards shall submit an Inventory Change Report to the NRC. Inventory Change Reports for receipts must be submitted within 10 days after the material is received, in accordance with the instructions in NUREG/BR–0006 and NMMSS Report D–24 ''Personal Computer Data Input for NRC Licensees.'' Copies of the instructions for completing DOE/NRC Form 741 and DOE/NRC Form 740M may be obtained

from the following websites: *http://www.nrc.gov/reading-rm/doc-collections/nuregs/brochures* and *https://nnsa.energy.gov/aboutus/ourprograms/nuclearsecurity/nmmsshome/nmmssinfo/nmmssreports*.

(b) An Inventory Change Report (Nuclear Material Transaction Report) must specify identification and batch data for each batch of nuclear material, the date of the inventory change, and, as appropriate:

(1) The originating IAEA material balance area or the shipper; and

(2) The receiving IAEA material balance area or the recipient.

(3) Each person who receives any nuclear material from a foreign source shall complete both the supplier's and receiver's portion of DOE/NRC Form 741.

(4) Each person in the U.S. Caribbean Territories who receives nuclear material from the U.S. outside the U.S. Caribbean Territories shall complete both the supplier's and receiver's portion of DOE/NRC Form 741.

(c) An Inventory Change Report must be accompanied by DOE/NRC Form 740M whenever it is necessary to:

(1) Explain the inventory changes set forth in the operating records required by § 75.23; or

(2) Describe, to the extent specified in the license conditions, the anticipated operational program for the facility, including, but not limited to, the schedule for taking physical inventory.

(d) Copies of the instructions for completing DOE/NRC Form 741 and DOE/NRC Form 740M may be obtained from the following websites: *http://www.nrc.gov/reading-rm/doc-collections/nuregs/brochures* and *https://nnsa.energy.gov/aboutus/ourprograms/nuclearsecurity/nmmsshome/nmmssinfo/nmmssreports*.

[83 FR 19613, May 4, 2018]

§ 75.35 Material status reports.

(a) Each licensee of a facility, certificate holder, or possessor of nuclear material outside facilities with nuclear materials subject to IAEA safeguards shall submit a material status report for each physical inventory taken in accordance with the material accounting and control procedures required by § 75.21. The material status report must include a DOE/NRC Form 742 and a DOE/NRC Form 742C, which lists all batches separately and specifies material identification and batch data for each batch. The reports described in this section must be prepared and submitted in accordance with instructions in NUREG/BR–0006, NUREG/BR–0007, and NMMSS Report D–24.

(b) Unless otherwise specified in the license conditions, material status reports shall be submitted to the NRC as soon as possible, but in any event no later than 30 days after the start of the physical inventory.

(c) Possessors of nuclear material outside facilities must submit a material status report to the NRC every 12 calendar months, for a reporting period that commences on May 1st and concludes on April 30th of the next calendar year. The annual inventory report must be dated April 30th.

(d) A material status report must be accompanied by DOE/NRC Form 740M whenever it is necessary to:

(1) Describe the anticipated operational program;

(2) Provide additional explanation and clarification at the country, facility material balance area, report, or entry level;

(3) Provide additional explanation not accommodated in any of the data elements of DOE/NRC Form 742 or DOE/NRC Form 742C; or

(4) Report actual inventory values equal to or less than 0.4 kg of source material.

(e) Copies of the instructions for completing DOE/NRC Form 742, DOE/NRC Form 742C, and DOE/NRC Form 740M may be obtained from the following websites: *http://www.nrc.gov/reading-rm/doc-collections/nuregs/brochures* and *https://nnsa.energy.gov/aboutus/ourprograms/nuclearsecurity/nmmsshome/nmmssinfo/nmmssreports*.

[83 FR 19614, May 4, 2018]

§ 75.36 Special reports.

(a) This section applies to licensees, certificate holders, and possessors of nuclear material outside facilities who:

(1) Have been given notice under § 75.7(a) that their facilities are subject to the application of IAEA safeguards, or

(2) Are subject to the U.S.–IAEA Caribbean Territories Safeguards Agreement.

(b) Each entity subject to this section shall immediately make a special report to the NRC, by telephone, if:

(1) There is a loss of nuclear material:

(i) In excess of specified limits, as stated in license conditions, for those entities described in paragraph (a)(1) of this section, or

(ii) In any amount, for those entities described in paragraph (a)(2) of this section,

(2) There are unexpected changes in containment to the extent that unauthorized removal of nuclear material has become possible, or

(3) Reporting is required under a license condition.

[83 FR 19614, May 4, 2018]

ADVANCED NOTIFICATION AND EXPENSES

§ 75.43 Circumstances requiring advance notification.

(a) Each person subject to the Safeguards Agreements shall give advance written notification to the NRC regarding the international and domestic transfers specified in this section.

(b) *Exports.* Notification shall be given of any proposed shipment of nuclear material for peaceful purposes under an export license issued pursuant to part 110 of this chapter, in an amount exceeding one effective kilogram, directly or indirectly to any non-nuclear-weapon state (as referred to in Article III(2) of the Treaty on the Non-Proliferation of Nuclear Weapons, 21 U.S.T. 483). If the licensee anticipates that it will make two or more shipments for peaceful purposes, within any period of 90 days, directly or indirectly to destinations in the same non-nuclear-weapon state, notification shall be given of each shipment if the aggregate quantity of nuclear material to be transferred exceeds one effective kilogram.[2]

(c) *Imports.* (1) Notification shall be given (to the fullest extent possible on the basis of available information) with respect to nuclear material which immediately prior to export is subject to safeguards, under an agreement with the IAEA, in the country from which the material, directly or indirectly, is being exported. Such notification is only required, however, if the quantities of nuclear material are as specified in paragraph (c)(2) of this section.

(2) Notification shall be given with respect to any proposed import of nuclear material described in paragraph (c)(1) of this section in an amount exceeding one effective kilogram. If the licensee anticipates that it will receive two or more shipments of such nuclear material, within any 90-day period from points of origin in the same country, notification shall be given with respect to each shipment if the aggregate quantity of such nuclear material to be received exceeds one effective kilogram.

(d) *Domestic transfers.* Notification must be given regarding any shipments of nuclear material (other than small quantities in the form of samples containing less than 0.01 effective kilogram per sample) to a non-eligible destination. As used in this paragraph, a *non-eligible destination* means any destination in the United States other than a facility on the Eligible Facilities List.

[45 FR 50711, July 31, 1980, as amended at 73 FR 78613, Dec. 23, 2008; 83 FR 19614, May 4, 2018]

§ 75.44 Timing of advance notification.

(a) Except as provided in paragraph (b) of this section, notification to the Commission, when required by § 75.43, must be given:

(1) In the case of exports and domestic transfers, at least 20 days in advance of the preparation of the nuclear material for shipment from the facility.

(2) In the case of imports, at least 12 days in advance of the unpacking of nuclear material at the facility.

(b) For a particular receipt or shipment of nuclear material, the Commission will approve a shorter notice period than that specified by paragraph (a) of this section, for good cause, if it

[2] All foreign countries, with the exception of the People's Republic of China, France, the Soviet Union, and the United Kingdom, are non-nuclear-weapon states. Treaty on the Non-Proliferation of Nuclear Weapons, Article IX(3).

determines that observing the specified notification period would result in delay in shipment or unpackaging.

(c) The licensee shall inform the Commission, by phone, as soon as possible, with respect to any delay in the receipt (or unpackaging) or the shipment (or preparation for shipment) of nuclear material for which advance notification is required. New dates should be provided, if known.

[45 FR 50711, July 31, 1980, as amended at 73 FR 78614, Dec. 23, 2008]

§ 75.45 Content of advance notification.

(a) The notifications required by § 75.43 must include the element weight of nuclear material being received or shipped, the chemical composition and physical form, the isotopic composition (to the extent specified by license conditions), the estimated date and place at the reporting facility where the nuclear material is to be unpackaged or prepared for shipment (and where the quantity and composition can be verified), the applicable IAEA material balance area at the reporting facility, the approximate number of items to be received or shipped, and the probable dates of receipt or shipment. The notification must indicate that the information is being supplied under § 75.43.

(b) The notifications required with respect to export and import shipments shall also include

(1) If available, a general description of containers (including, in the case of exports, features that would permit sealing);

(2) Destination of export as authorized under an export license issued pursuant to part 110 of this chapter, or origin of import (by country and, if known, place);

(3) Means of transport; and

(4) Expected date and place of arrival in the destination country (for exports) or in the United States (for imports).

[45 FR 50711, July 31, 1980, as amended at 73 FR 78614, Dec. 23, 2008]

§ 75.46 Expenses.

(a) Under the Safeguards Agreements, the IAEA undertakes to reimburse any person subject to this part for extraordinary expenses incurred as a result of its specific request provided that the IAEA has agreed in advance to do so. The Safeguards Agreements also provide that the IAEA will reimburse that person for the cost of making additional measurements or taking samples at the specific request of an IAEA inspector.

(b) The NRC will inform persons subject to this part, by license condition or by other means (e.g., written communication), of those items of extraordinary expense that the IAEA has agreed in advance to reimburse.

(c) The NRC will inform persons subject to this part, by license condition or by other means (e.g., written communication), of the procedures to be used to document:

(1) An IAEA inspector's request for making additional measurements or taking additional samples; and

(2) An IAEA request for a particular action by the licensee that will give rise to reimbursable extraordinary expense.

(d) The NRC will take appropriate action to assist persons subject to this part regarding the reimbursement of any expense that, under the Safeguards Agreements, is to be borne by the IAEA.

[45 FR 50711, July 31, 1980, as amended at 73 FR 78614, Dec. 23, 2008; 83 FR 19614, May 4, 2018]

ENFORCEMENT

§ 75.51 Violations.

(a) The Commission may obtain an injunction or other court order to prevent a violation of the provisions of—

(1) The Atomic Energy Act of 1954, as amended;

(2) Title II of the Energy Reorganization Act of 1974, as amended; or

(3) A regulation or order issued pursuant to those Acts.

(b) The Commission may obtain a court order for the payment of a civil penalty imposed under section 234 of the Atomic Energy Act:

(1) For violations of—

(i) Sections 53, 57, 62, 63, 81, 82, 101, 103, 104, 107, or 109 of the Atomic Energy Act of 1954, as amended;

(ii) Section 206 of the Energy Reorganization Act;

(iii) Any rule, regulation, or order issued pursuant to the sections specified in paragraph (b)(l)(i) of this section;

(iv) Any term, condition, or limitation of any license issued under the sections specified in paragraph (b)(1)(i) of this section.

(2) For any violation for which a license may be revoked under section 186 of the Atomic Energy Act of 1954, as amended.

(c) The Commission may issue orders to secure compliance with the provisions of this part or to prohibit any violation of such provisions as may be proper to protect the common defense and security. Enforcement actions, including proceedings instituted with respect to Agreement State licensees, will be conducted in accordance with the procedures set forth in part 2, subpart B of this chapter. Only NRC licensees, however, are subject to license modification, suspension, or revocation as a result of enforcement action.

[57 FR 55079, Nov. 24, 1992]

§ 75.53 Criminal penalties.

(a) Section 223 of the Atomic Energy Act of 1954, as amended, provides for criminal sanctions for willful violation of, or conspiracy to violate, any regulation issued under sections 161b., 161i., or 161o. of the Act. For purposes of criminal sanctions under section 223, all the regulations in Part 75 are issued under one or more of sections 161b., 161i., or 161o., except as provided in paragraphs (b) and (c) of this section.

(b) The regulations in Part 75 that are not issued under sections 161b, 161i, or 161o for the purposes of section 223 are as follows: §§75.1, 75.2, 75.3, 75.4, 75.5, 75.7, 75.9, 75.12, 75.13, 75.15, 75.26, 75.27, 75.28, 75.29, 75.46, 75.51, and 75.53.

(c) Any provision in Part 75 that implements the ''Protocol Additional to the Agreement between the United States of America and the International Atomic Energy Agency for the Application of Safeguards in the United States of America,'' known as the ''Additional Protocol,'' signed by the United States on June 12, 1998, is not issued under sections 161b., 161i., or 161o, for the purposes of criminal sanctions under section 223.

[73 FR 78614, Dec. 23, 2008, as amended at 83 FR 19614, May 4, 2018]

PART 76—CERTIFICATION OF GASEOUS DIFFUSION PLANTS

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AUTHORITY: Atomic Energy Act of 1954, secs. 122, 161, 193(f), 223, 234, 1701 (42 U.S.C. 2152, 2201, 2243(f), 2273, 2282, 2297f); Energy Reorganization Act of 1974, secs. 201, 206, 211 (42 U.S.C. 5841, 5846, 5851); 44 U.S.C. 3504 note.

Section 76.22 is also issued under Atomic Energy Act sec. 193(f) (42 U.S.C. 2243(f)).

Section 76.35(j) also issued under Atomic Energy Act sec. 122 (42 U.S.C. 2152).

SOURCE: 59 FR 48960, Sept. 23, 1994, unless otherwise noted.

Subpart A—General Provisions

§ 76.1 Purpose.

(a) This part establishes requirements that will govern the operation of those portions of the Portsmouth and Paducah Gaseous Diffusion Plants located in Piketon, Ohio, and Paducah, Kentucky, respectively, that are leased by the United States Enrichment Corporation. These requirements are promulgated to protect the public health and safety from radiological hazards and provide for the common defense and security. This part also establishes the certification process that will be used to ensure compliance with the established requirements.

(b) The regulations contained in this part are issued pursuant to the Atomic Energy Act of 1954, as amended (68 Stat. 919); Title II of the Energy Reorganization Act of 1974, as amended (88 Stat. 1242); and Titles IX and XI of the Energy Policy Act of 1992 (106 Stat. 2923, 2951).

§ 76.2 Scope.

The regulations in this part apply only to those portions of the Portsmouth and Paducah Gaseous Diffusion Plants leased by the Corporation, per the Lease Agreement between the Department of Energy and the United States Enrichment Corporation. This part also gives notice to all persons who knowingly provide to the Corporation or any contractor, or subcontractor any components, equipment, materials, or other goods or services that relate to the activities subject to this part that they may be individually subject to NRC enforcement action for violation of § 76.10.

§ 76.4 Definitions.

As used in this part:

Act means the Atomic Energy Act of 1954 (68 Stat 919), and includes any amendments to the Act.

Administrative controls means the provisions relating to organization and management, procedures, recordkeeping, review and audit, and reporting necessary to ensure operation of the plant in a safe manner.

Agreement State means any State with which the Commission has entered into an effective agreement under subsection 274b. of the Act.

Non-Agreement State means any other State.

Alert means events may occur, are in progress, or have occurred that could lead to a release of radioactive material[s] but that the release is not expected to require a response by an offsite response organization to protect persons offsite.

Atomic energy means all forms of energy released in the course of nuclear fission or nuclear transformation.

Certificate of compliance or certificate means a certificate of compliance issued pursuant to this part.

Classified matter means documents or material revealing classified information.

Commission means the Nuclear Regulatory Commission or its duly authorized representatives.

Common defense and security means the common defense and security of the United States.

Compliance plan means a plan for achieving compliance approved pursuant to this part.

Corporation means the United States Enrichment Corporation (USEC), or its successor, a Corporation that is authorized by statute to lease the gaseous diffusion enrichment plants in Paducah, Kentucky, and Piketon, Ohio, from the department of Energy, or any person authorized to operate one or both of the gaseous diffusion plants, or other facilities, pursuant to a plan for the privatization of USEC that is approved by the President.

Department and Department of Energy (DOE) means the Department of Energy established by the Department of Energy Organization Act (Pub. L. 95–91, 91 Stat. 565, 42 U.S.C. 7101 *et seq.*), to the extent that the Department, or its duly authorized representatives, exercises functions formerly vested in the U.S. Atomic Energy Commission, its Chairman, members, officers and components and transferred to the U.S. Energy Research and Development Administration and to the Administrator thereof pursuant to Sections 104(b), (c), and (d) of the Energy Reorganization Act of 1974, as amended, (Pub. L. 93–438, 88 Stat. 1233 at 1237, 42 U.S.C. 5814) and retransferred to the Secretary of Energy pursuant to Section 301(a) of the Department of Energy Organization Act (Pub. L. 95–91, 91 Stat. 565 at 577–578, 42 U.S.C. 7151).

Depleted uranium means the byproduct residues from the uranium enrichment process in which the concentration of the isotope U_{235} is less than that occurring in natural uranium.

Director means the Director, or his or her designee, of the Office of Nuclear Material Safety and Safeguards, U.S. Nuclear Regulatory Commission.

Effective dose equivalent means the sum of the products of the dose equivalent to the body organ or tissue and the weighting factors applicable to each of the body organs or tissues that are irradiated, as defined in 10 CFR Part 20 (§§ 20.1001 through 20.2402).

Effective kilograms of special nuclear material means:

(1) For uranium with an enrichment in the isotope U–235 of 0.01 (1 percent) and above, its element weight in kilograms multiplied by the square of its enrichment expressed as a decimal weight fraction; and

(2) For uranium with an enrichment in the isotope U–235 below 0.01 (1 percent), its element weight in kilograms multiplied by 0.0001.

Formula quantity means strategic special nuclear material in any combination in a quantity of 5000 grams or more computed by the formula, grams = (grams contained U–235) + 2.5(grams U–233 + grams plutonium).

Lease Agreement means the agreement entered into as of July 1, 1993, and any subsequent revisions between the United States Department of Energy and the United States Enrichment Corporation.

Limiting conditions for operation means the lowest functional capability or performance levels of structures, systems, components, and their support systems required for normal safe operation of the plant.

Limiting control settings means settings for automatic alarm or protective devices related to those variables having significant safety functions.

National Security Information means information that has been determined pursuant to Executive Order 12356 or any predecessor order to require protection against unauthorized disclosure and that is so designated.

Person means:

(1) Any individual, corporation, partnership, firm, association, trust, estate, public or private institution, group, Government Agency other than the Commission or the Department, except that the Department shall be considered a person within the meaning of the regulations in this part to the extent that its facilities and activities are subject to the licensing and related regulatory authority of the Commission pursuant to Section 202 of the Energy Reorganization Act of 1974, as amended, (88 Stat. 1244); any State or

any political subdivision of or any political entity within a State, any foreign government or nation or any political subdivision of any such government or nation, or other entity; and

(2) Any legal successor, representative, agent, or agency of the foregoing.

Process means a series of actions that achieves an end or result.

Produce, when used in relation to special nuclear material, means:

(1) To manufacture, make, produce, or refine special nuclear material;

(2) To separate special nuclear material from other substances in which such material may be contained; or

(3) To make or to produce new special nuclear material.

Radioactive material means source material, special nuclear material, or byproduct material, possessed, used, transferred, or disposed of under part 76.

Restricted Data means all data concerning design, manufacture or utilization of atomic weapons, the production of special nuclear material, or the use of special nuclear material in the production of energy, but does not include data declassified or removed from the Restricted Data category pursuant to Section 142 of the Act.

Safety limits means those bounds within which the process variables must be maintained for adequate control of the operation and that must not be exceeded in order to protect the integrity of the physical system that is designed to guard against the uncontrolled release of radioactivity.

Sealed source means any radioactive material that is encased in a capsule designed to prevent leakage or escape of the radioactive material.

Security facility approval means that a determination has been made by the NRC that a facility is eligible to use, process, store, reproduce, transmit, or handle classified matter.

Site area emergency means events may occur, are in progress, or have occurred that could lead to a significant release of radioactive material and that could require a response by offsite response organizations to protect persons offsite.

Source material means source material as defined in Section 11z. of the Act and in the regulations contained in part 40 of this chapter.

Special nuclear material means:

(1) Plutonium, uranium 233, uranium enriched in the isotope 233 or in the isotope 235, and any other material which the Commission, pursuant to the provisions of Section 51 of the Act, determines to be special nuclear material, but does not include source material; or

(2) Any material artificially enriched in any of the foregoing, but does not include source material.

Special nuclear material of low strategic significance means:

(1) Less than an amount of special nuclear material of moderate strategic significance, as defined in this section, but more than 15 grams of uranium-235 (contained in uranium enriched to 20 percent or more in the U–235 isotope), or 15 grams of uranium-233, or 15 grams of plutonium, or the combination of 15 grams when computed by the equation, grams = (grams contained U–235) + (grams plutonium) + (grams U–233); or

(2) Less than 10,000 grams but more than 1000 grams of uranium-235 (contained in uranium enriched to 10 percent or more but less than 20 percent in the U–235 isotope), or

(3) 10,000 grams or more of uranium-235 (contained in uranium enriched above natural but less than 10 percent in the U–235 isotope).

Special nuclear material of moderate strategic significance means:

(1) Less than a formula quantity of strategic special nuclear material but more than 1000 grams of uranium-235 (contained in uranium enriched to 20 percent or more in the U–235 isotope), or more than 500 grams of uranium-233 or plutonium, or in a combined quantity of more than 1000 grams when computed by the equation, grams = (grams contained U–235) + 2 (grams U–233 + grams plutonium); or

(2) 10,000 grams or more of uranium-235 (contained in uranium enriched to 10 percent or more but less than 20 percent in the U–235 isotope).

Special nuclear material scrap means the various forms of special nuclear material generated during chemical and mechanical processing, other than recycle material and normal process intermediates, which are unsuitable for

use in their present form, but all or part of which will be used after further processing.

Strategic special nuclear material means uranium-235 (contained in uranium enriched to 20 percent or more in the U–235 isotope), uranium-233, or plutonium.

Surveillance requirements means requirements relating to test, calibration, or inspection to ensure that the necessary quality of systems and components is maintained, that plant operation will be within the safety limits, and that the limiting conditions of operation will be met.

Unclassified Controlled Nuclear Information is information whose unauthorized dissemination is prohibited under Section 148 of the Atomic Energy Act.

United States, when used in a geographical sense, includes Puerto Rico and all territories and possessions of the United States.

Unreviewed safety question means a change which involves any of the following:

(1) The probability of occurrence or the consequences of an accident or malfunction of equipment important to safety previously evaluated in the safety analysis report may be increased;

(2) A possibility for an accident or malfunction of a different type than any evaluated previously in the safety analysis report may be created; or

(3) The margin of safety as defined in the basis for any technical safety requirement is reduced.

[59 FR 48960, Sept. 23, 1994, as amended at 62 FR 6669, Feb. 12, 1997]

§ 76.5 Communications.

Except where otherwise specified, all communications and reports concerning the regulations in this part and applications filed under them should be sent as follows:

(a) By mail addressed to: ATTN: Document Control Desk, Director, Office of Nuclear Security and Incident Response, U.S Nuclear Regulatory Commission, Washington, DC 20555–0001;

(b) By hand delivery to the NRC's offices at 11555 Rockville Pike, Rockville, Maryland; or

(c) Where practicable, by electronic submission, for example, Electronic Information Exchange, or CD-ROM. Electronic submissions must be made in a manner that enables the NRC to receive, read, authenticate, distribute, and archive the submission, and process and retrieve it a single page at a time. Detailed guidance on making electronic submissions can be obtained by visiting the NRC's Web site at *http://www.nrc.gov/site-help/e-submittals.html;* by e-mail to *MSHD.Resource@nrc.gov;* or by writing the Office of the Chief Information Officer, U.S. Nuclear Regulatory Commission, Washington, DC 20555–0001. The guidance discusses, among other topics, the formats the NRC can accept, the use of electronic signatures, and the treatment of nonpublic information.

(d) Classified communications shall be transmitted in accordance with § 95.39 of this chapter to the NRC Headquarters' classified mailing address listed in appendix A to part 73 of this chapter or delivered by hand in accordance with § 95.39 of this chapter to the NRC Headquarters' street address listed in appendix A to part 73 of this chapter.

[68 FR 58822, Oct. 10, 2003, as amended at 74 FR 62685, Dec. 1, 2009; 80 FR 74981 Dec. 1, 2015; 83 FR 58723, Nov. 21, 2018]

§ 76.6 Interpretations.

Except as specifically authorized by the Commission in writing, no interpretation of the meaning of the regulations in this part by any officer or employee of the Commission other than a written interpretation by the General Counsel will be recognized to be binding upon the Commission.

§ 76.7 Employee protection.

(a) Discrimination by the Corporation, a contractor, or a subcontractor of the Corporation against an employee for engaging in certain protected activities is prohibited. Discrimination includes discharge and other actions that relate to compensation, terms, conditions, or privileges of employment. The protected activities are established in Section 211 of the Energy Reorganization Act of 1974, as amended, and in general are related to the administration or enforcement of a requirement imposed under the Atomic Energy Act or the Energy Reorganization Act.

(1) The protected activities include but are not limited to:

(i) Providing the Commission or his or her employer information about alleged violations of either of the above statutes or possible violations of requirements imposed under either of the above statutes;

(ii) Refusing to engage in any practice made unlawful under either of the above statutes or under these requirements if the employee has identified the alleged illegality to the employer;

(iii) Requesting the Commission to institute action against his or her employer for the administration or enforcement of these requirements;

(iv) Testifying in any Commission proceeding, or before Congress, or at any Federal or State proceeding regarding any provision (or proposed provision) of either of the above statutes; and

(v) Assisting or participating in, or attempting to assist or participate in, the protected activities.

(2) These activities are protected even if no formal proceeding is actually initiated as a result of the employee assistance or participation.

(3) This section has no application to any employee alleging discrimination prohibited by this section who, acting without direction from his or her employer (or the employer's agent), deliberately causes a violation of any requirement of the Energy Reorganization Act of 1974, as amended, or the Atomic Energy Act of 1954, as amended.

(b) Any employee who believes that he or she has been discharged or otherwise discriminated against by any person for engaging in protected activities specified in paragraph (a)(1) of this section may seek a remedy for the discharge or discrimination through an administrative proceeding in the Department of Labor. The administrative proceeding must be initiated within 180 days after an alleged violation occurs by filing a complaint alleging the violation with the Department of Labor, Employment Standards Administration, Wage and Hour Division. The Department of Labor may order reinstatement, back pay, and compensatory damages.

(c) A violation of paragraphs (a), (e), or (f) of this section by the Corporation, or a contractor or subcontractor of the Corporation may be grounds for:

(1) Denial, revocation, or suspension of the certificate.

(2) Imposition of a civil penalty on the Corporation or a contractor or subcontractor of the Corporation.

(3) Other enforcement action.

(d) Actions taken by an employer or others which adversely affect an employee may be predicated upon nondiscrimination grounds. The prohibition applies when the adverse action occurs because the employee has engaged in protected activities. An employee's engagement in protected activities does not automatically render him or her immune from discharge or discipline for legitimate reasons or from adverse action dictated by nonprohibited considerations.

(e)(1) The Corporation shall prominently post the revision of NRC Form 3, ''Notice to Employees,'' referenced in 10 CFR 19.11(c). This form must be posted at locations sufficient to permit employees protected by this section to observe a copy on the way to or from their place of work. Premises must be posted during the term of the certificate and for 30 days following certificate termination.

(2) The Corporation shall notify its contractors of the prohibition against discrimination for engaging in protected activities.

(3) Copies of NRC Form 3 may be obtained by writing to the NRC Region III Office listed in appendix D to part 20 of this chapter, via email to *Forms.Resource@nrc.gov*, or by visiting the NRC's online library at *http://www.nrc.gov/reading-rm/doc-collections/forms/*.

(f) No agreement affecting the compensation, terms, conditions, or privileges of employment, including an agreement to settle a complaint filed by an employee with the Department of Labor pursuant to Section 211 of the Energy Reorganization Act of 1974, as amended, may contain any provision which would prohibit, restrict, or otherwise discourage an employee from participating in protected activity as

defined in paragraph (a)(1) of this section including, but not limited to, providing information to the NRC or to his or her employer on potential violations or other matters within NRC's regulatory responsibilities.

[59 FR 48960, Sept. 23, 1994, as amended at 60 FR 24553, May 9, 1995; 63 FR 15744, Apr. 1, 1998; 64 FR 44649, Aug. 17, 1999; 68 FR 58822, Oct. 10, 2003; 72 FR 63975, Nov. 14, 2007; 73 FR 30460, May 28, 2008; 79 FR 66606, Nov. 10, 2014]

§ 76.8 Information collection requirements: OMB approval not required.

The information collection requirements contained in this part of limited applicability apply to a wholly-owned instrumentality of the United States and affect fewer than ten respondents. Therefore, Office of Management and Budget clearance is not required pursuant to the Paperwork Reduction Act (44 U.S.C. 3501 *et seq.*).

[62 FR 52190, Oct. 6, 1997]

§ 76.9 Completeness and accuracy of information.

(a) Information provided to the Commission or information required by statute or by the Commission's rules, regulations, standards, orders, or other conditions to be maintained by the Corporation must be complete and accurate in all material respects.

(b) The Corporation shall notify the Commission of information identified as having for the regulated activity a significant implication for public health and safety or common defense and security. The Corporation violates this paragraph only if the Corporation fails to notify the Commission of information that the Corporation has identified as having a significant implication for public health and safety or common defense and security. Notification must be provided to the Administrator of NRC's Region III Office within 2 working days of identifying the information. This requirement is not applicable to information which is already required to be provided to the Commission by other reporting or updating requirements.

[59 FR 48960, Sept. 23, 1994, as amended at 64 FR 44649, Aug. 17, 1999]

§ 76.10 Deliberate misconduct.

(a) The Corporation or any employee of the Corporation and any contractor (including a supplier or consultant), subcontractor, or any employee of a contractor or subcontractor, who knowingly provides to the Corporation, or any contractor or subcontractor, components, equipment, materials, or other goods or services, that relate to the Corporation's activities subject to this part; may not:

(1) Engage in deliberate misconduct that causes or, but for detection, would have caused, the Corporation to be in violation of any rule, regulation, or order, or any term, condition, or limitation of a certificate or approval issued by the Commission; or

(2) Deliberately submit to the NRC, the Corporation, or its contractor or subcontractor, information that the person submitting the information knows to be incomplete or inaccurate in some respect material to the NRC.

(b) A person who violates paragraph (a)(1) or (a)(2) of this section may be subject to enforcement action in accordance with the procedures in 10 CFR part 2, subpart B.

(c) For purposes of paragraph (a)(1) of this section, deliberate misconduct by a person means an intentional act or omission that the person knows:

(1) Would cause the Corporation to be in violation of any rule, regulation, or order, or any term, condition, or limitation of a certificate or approved compliance plan issued by the Director; or

(2) Constitutes a violation of a requirement, procedure, instruction, contract, purchase order or policy of the Corporation, contractor, or subcontractor.

[59 FR 48960, Sept. 23, 1994, as amended at 62 FR 6669, Feb. 12, 1997]

§ 76.21 Certificate required.

(a) The Corporation or its contractors may not operate the gaseous diffusion plants at Piketon, Ohio, and Paducah, Kentucky, unless an appropriate certificate of compliance, and/or an approved compliance plan is in effect under this part. Unless authorized by the NRC under other provisions of this

chapter, a person other than the Corporation or its contractors may not acquire, deliver, receive, possess, use, or transfer radioactive material at the gaseous diffusion plants at Piketon, Ohio, and Paducah, Kentucky.

(b) For the purposes of §§ 30.41, 40.51, and 70.42 of this chapter, the Corporation shall be authorized to receive, and licensees shall be authorized to transfer to the Corporation, byproduct material, source material, or special nuclear material to the extent permitted under the certificate of compliance issued, and/or the compliance plan approved, pursuant to this part.

[59 FR 48960, Sept. 23, 1994, as amended at 62 FR 6669, Feb. 12, 1997; 64 FR 44649, Aug. 17, 1999]

§ 76.22 Ineligibility of certain applicants.

A certificate of compliance may not be issued to the Corporation if the Commission determines that:

(a) The Corporation is owned, controlled, or dominated by an alien, a foreign corporation, or a foreign government; or

(b) The issuance of such a certificate of compliance would be inimical to—

(1) The common defense and security of the United States; or

(2) The maintenance of a reliable and economical domestic source of enrichment services.

[62 FR 6670, Feb. 12, 1997]

§ 76.23 Specific exemptions.

The Commission may, upon its own initiative or upon application of the Corporation, grant such exemptions from the requirements of the certification regulations as it determines are authorized by law and will not endanger life, or property, or the common defense and security, and are otherwise in the public interest.

Subpart B—Application

§ 76.31 Periodic application requirement.

The Corporation shall periodically apply to the Commission for a certificate of compliance, in accordance with § 76.36, on or before April 15 of the year specified in an existing certificate of compliance as determined by the Commission, but not less frequently than every 5 years.

[62 FR 6670, Feb. 12, 1997]

§ 76.33 Application procedures.

(a) *Filing requirements.* (1) An application for a certificate of compliance must be tendered by filing the application with the Director of the NRC's Office of Nuclear Material Safety and Safeguards, with copies sent to the NRC Region III Office and appropriate resident inspector, in accordance with § 76.5. If the application is to be submitted electronically, see Guidance for Electronic Submissions to the Commission at *http://www.nrc.gov/site-help/e-submittals.html*.

(2) The application must include the full name, address, age (if an individual), and citizenship of the applicant. If the applicant is a corporation or other entity, the application must indicate the State where it was incorporated or organized; the location of the principal office; and the names, addresses, and citizenship of its principal officers. The applicant shall include any known information concerning the control or ownership, if any, exercised over the applicant by any alien, foreign corporation, or foreign government.

(b) *Oath or affirmation.* An application for a certificate of compliance must be executed in a signed original by a duly authorized officer of the Corporation under oath or affirmation.

(c) *Pre-filing consultation.* The Corporation may confer with the Commission's staff before filing an application.

(d) *Additional information.* At any time during the review of an application, the Corporation may be required to supply additional information to the Commission's staff to enable the Commission or the Director, as appropriate, to determine whether the certificate should be issued or denied, or to determine whether a compliance plan should be approved.

(e) *Withholdable information.* If an application contains Restricted Data, National Security Information, Safeguards Information, Unclassified Controlled Nuclear Information, proprietary data, or other withholdable information, the applicant shall ensure that

the withholdable information is separate from the information to be made publicly available.

[64 FR 44649, Aug. 17, 1999, as amended at 68 FR 58822, Oct. 10, 2003; 74 FR 62685, Dec. 1, 2009]

§ 76.35 Contents of application.

The application for a certificate of compliance must include the information identified in this section.

(a) A safety analysis report which must include the following information:

(1) The activities and locations involving special nuclear material and the general plan for carrying out these activities;

(2) The name, amount, and specifications (including the chemical and physical form and, where applicable, isotopic content) of the special nuclear material, source and byproduct material the Corporation proposes to use, possess or produce, including any material held up in equipment from previous operations;

(3) The qualifications requirements, including training and experience, of the Corporation's management organization and key individuals responsible for safety in accordance with the regulations in this chapter;

(4) An assessment of accidents based on the requirements of § 76.85;

(5) A training program that meets the requirements of § 76.95;

(6) A description of equipment and facilities which will be used by the Corporation to protect health and minimize danger to life or property (such as handling devices, working areas, shields, measuring and monitoring instruments, devices for the treatment and disposal of radioactive effluent and wastes, storage facilities, provisions for protection against natural phenomena, fire protection systems, criticality accident alarm systems, etc.);

(7) A description of the management controls and oversight program to ensure that activities directly relevant to nuclear safety and safeguards and security are conducted in an appropriately controlled manner that ensures protection of employee and public health and safety and protection of the national security interests; and

(8) A description of the plant site, and a description of the principal structures, systems, and components of the plant.

(b) A plan prepared and approved by DOE for achieving compliance with respect to any areas of noncompliance with the NRC's regulations that are identified by the Corporation as of the date of the application that includes:

(1) A description of the areas of noncompliance;

(2) A plan of actions and schedules for achieving compliance; and

(3) A justification for continued operation with adequate safety and safeguards.

(c) Any relevant information concerning deviations from the published Environmental Impact Statement, Environmental Assessments, or environmental permits under which the plants currently operate from which the Commission can prepare an environmental assessment related to the compliance plan.

(d) A quality assurance program that meets the requirements of § 76.93.

(e) Technical safety requirements in accordance with § 76.87. A summary statement of the bases or reasons for the requirements, other than those covering administrative controls, must also be included in the application, but will not be considered part of the technical safety requirements.

(f) An emergency plan that meets the requirements of § 76.91.

(g) A compliance status report that includes the status of various State, local and Federal permits, licenses, approvals, and other entitlements, as described in § 51.45(d) of this chapter. The report must include environmental and effluent monitoring data.

(h) A fundamental nuclear material control plan which describes the measures used to control and account for special nuclear material that the Corporation uses, possesses, or has access to. The plan must describe, as appropriate:

(1) How formula quantities of strategic special nuclear material will be controlled and accounted for in accordance with the relevant requirements of subpart E;

(2) How special nuclear material of moderate strategic significance will be

controlled and accounted for in accordance with the relevant requirements of subpart E; and

(3) How special nuclear material of low strategic significance will be controlled and accounted for in accordance with the relevant requirements of subpart E.

(i) A transportation protection plan which describes the measures used to protect shipments of special nuclear material of low strategic significance in accordance with the relevant requirements of subpart E when in transit offsite.

(j) A physical protection plan which describes the measures used to protect special nuclear material that the Corporation uses, possesses, or has access to at fixed sites. The plan must describe, as appropriate:

(1) How formula quantities of special nuclear material will be protected against both theft and radiological sabotage in accordance with the relevant requirements of subpart E;

(2) How special nuclear material of moderate strategic significance will be protected in accordance with the relevant requirements of subpart E;

(3) How special nuclear material of low strategic significance will be protected in accordance with the relevant requirements of subpart E; and

(4) The measures used to protect special nuclear material while in transit between protected areas, all of which are located on a single fixed site under the control of the applicant. The level of protection afforded the material while in transit may not be less than that afforded the same material while it was within the protected area from which transit began.

(k) A plan describing the facility's proposed security procedures and controls as set forth in § 95.15(b) of this chapter for protection of classified matter.

(l)(1) In response to a written request by the Commission, each applicant for a certificate and each recipient of a certificate shall submit facility information, as described in § 75.10 of this chapter, on IAEA Design Information Questionnaire forms and site information on DOC/NRC Form AP–A and associated forms;

(2) As required by the Additional Protocol, shall submit location information described in § 75.11 of this chapter on DOC/NRC Form AP–1 and associated forms; and

(3) Shall permit verification thereof by the International Atomic Energy Agency (IAEA); and shall take other action as may be necessary to implement the US/IAEA Safeguards Agreement, as described in Part 75 of this chapter.

(m) A description of the program, as appropriate, for processing, management, and disposal of mixed and radioactive wastes and depleted uranium generated by operations. This description must be limited to processing, management, and disposal activities conducted during operation of the facilities while under lease to the Corporation. The application must also include a description of the waste streams generated by enrichment operations, annual volumes of depleted uranium and waste expected, identification of radioisotopes contained in the waste, physical and chemical forms of the depleted uranium and waste, plans for managing the depleted uranium and waste, and plans for ultimate disposition of the waste and depleted uranium before turnover of the facilities to the Department of Energy under the terms of the lease agreement between the United States Enrichment Corporation and the Department.

(n) A description of the funding program to be established to ensure that funds will be set aside and available for those aspects of the ultimate disposal of waste and depleted uranium, decontamination and decommissioning, relating to the gaseous diffusion plants leased to the Corporation by the Department of Energy, which are the financial responsibility of the Corporation. The Corporation shall establish financial surety arrangements to ensure that sufficient funds will be available for the ultimate disposal of waste and depleted uranium, and decontamination and decommissioning activities which are the financial responsibility of the Corporation. The funding mechanism, such as prepayment, surety, insurance, or external sinking fund, must ensure availability of funds for any activities which are required to

be completed both before or after the return of the gaseous diffusion facilities to the department of Energy in accordance with the lease between the Department and the Corporation. The funding program must contain a basis for cost estimates used to establish funding levels and must contain means of adjusting cost estimates and associated funding levels over the duration of the lease. The funding program need not address funding for those aspects of decontamination and decommissioning of the gaseous diffusion plants assigned to the Department of Energy under the Atomic Energy Act of 1954, as amended. The Corporation should address the adequacy of the financing mechanism selected in its periodic application for certification.

[59 FR 48960, Sept. 23, 1994, as amended at 62 FR 6670, Feb. 12, 1997; 64 FR 44649, Aug. 17, 1999; 73 FR 78614, Dec. 23, 2008; 85 FR 65664, Oct. 16, 2020]

§ 76.36 Renewals.

(a) The Corporation shall file periodic applications for renewal, as required by § 76.31.

(b) Information contained in previous applications, statements, or reports filed with the Commission may be referenced as part of the application, provided that the reference is clear and specific.

(c) An application for renewal is subject to the requirements in § 76.33 and must contain the following information:

(1) The information specified in § 76.35; or,

(2) A statement by the Corporation that the NRC may rely upon the information provided in the previous application(s) upon which the existing certificate is based, except for:

(i) Any proposed changes in the existing certificate of compliance conditions or technical safety requirements;

(ii) Any proposed changes to the documents submitted with the previous application in accordance with § 76.35;

(iii) Any changes which the Corporation has made without prior NRC approval pursuant to § 76.68; and,

(iv) Any changes to certificate conditions or technical safety requirements for which the Corporation has sought and received Commission approval pursuant to § 76.45.

(d) The changes which are submitted as part of an application for renewal in accordance with paragraph (c)(2) of this section, must be in the form of specific changes to the documentation specified in § 76.35. The changes must be marked and dated for easy identification.

[59 FR 48960, Sept. 23, 1994, as amended at 62 FR 6670, Feb. 12, 1997; 64 FR 44649, Aug. 17, 1999]

§ 76.37 Federal Register notice.

The Director may, at his or her discretion, publish in the FEDERAL REGISTER:

(a) A notice of the filing of an application specifying that copies of the application, except for Restricted Data, Unclassified Controlled Nuclear Information, Classified National Security Information, Safeguards Information, Proprietary Data, or other withholdable information will be made available for the public inspection at the NRC Web site, *http://www.nrc.gov;*

(b) A notice of opportunity for written public comment on the application for renewal; and

(c) The date of any scheduled public meeting regarding the application for renewal.

[64 FR 44649, Aug. 17, 1999, as amended at 64 FR 48955, Sept. 9, 1999]

§ 76.39 Public meeting.

(a) A public meeting will be held on an application for renewal if the Director, in his or her discretion, determines that a meeting is in the public interest with respect to a decision on the application for renewal.

(b) Conduct of public meeting.

(1) The Director shall conduct any public meeting held on the application for renewal.

(2) Public meetings will take place near the locale of the subject plant, unless otherwise specified by the Director.

(3) A public meeting will be open to all interested members of the public and be conducted as deemed appropriate by the Director.

(4) Members of the public will be given an opportunity during a public meeting to make their views regarding

the application for renewal known to the Director.

(5) A transcript will be kept of each public meeting.

(6) No Restricted Data, Classified National Security Information, Unclassified Controlled Nuclear Information, Safeguards Information, Proprietary Data, or other withholdable information may be introduced at the meeting.

[59 FR 48960, Sept. 23, 1994, as amended at 64 FR 44649, Aug. 17, 1999]

§ 76.41 Record underlying decisions.

(a) Any decision of the Commission or its designee under this part in any proceeding regarding an application for a certificate must be based on information in the record and facts officially noticed in the proceeding.

(b) All public comments and correspondence in any proceeding regarding an application for a certificate must be made a part of the public docket of the proceeding, except as provided under 10 CFR 2.390.

[59 FR 48960, Sept. 23, 1994, as amended at 69 FR 2281, Jan. 14, 2004]

§ 76.43 Date for decision.

The Director will render a decision on an application within 6 months of the receipt of the application unless the Director alters the date for decisions and publishes notice of the new date in the FEDERAL REGISTER.

[62 FR 6670, Feb. 12, 1997]

§ 76.45 Application for amendment of certificate.

(a) *Contents of an amendment application.* In addition to the application for certification submitted under § 76.31, the Corporation may at any time apply for an amendment of the certificate to cover proposed new or modified activities. The amendment application should contain sufficient information for the NRC to make findings of compliance or acceptability for the proposed activities in the same manner as was required for the original certificate.

(b) *Oath or affirmation.* An application for an amendment of the certificate of compliance must be executed in a signed original by the Corporation under oath or affirmation.

(c) *Amendment application determinations.* If the NRC staff approves an application for a certificate amendment, it will be effective on a date specified by the NRC staff. If an application for a certificate amendment is not approved by the NRC staff, the Corporation will be informed in writing. The NRC staff may, at its discretion, publish notice of its determination on an amendment application in the FEDERAL REGISTER.

(d) *Request for review of staff's determination on an amendment application.* The Corporation, or any person whose interest may be affected, may file a petition requesting the Director's review of an NRC staff determination on an amendment application. A petition requesting the Director's review may not exceed 30 pages and must be filed within 30 days after the date of the NRC staff's determination. Any person described in this paragraph may file a written response to a petition requesting the Director's review. This response may not exceed 30 pages and must be filed within 15 days after the filing date of the petition requesting the Director's review. The Director may adopt, modify, or set aside the findings, conclusions, conditions, or terms in the NRC staff's amendment determination by providing a written basis for the action. If the Director does not issue a decision or take other appropriate action within 60 days after receiving the petition for review, the NRC staff's determination on the amendment application remains in effect.

(e) *Request for review of a Director's decision.* The Corporation, or any person whose interest may be affected and who filed a petition for review or filed a response to a petition for review under § 76.45(d), may file a petition requesting the Commission's review of a Director's decision on an amendment application.

(1) A petition requesting the Commission's review may not exceed 30 pages and must be filed within 30 days after the date of the Director's decision. A petition requesting the Commission's review may be either:

(i) Delivered to the Rulemakings and Adjudications Staff of the Office of the Secretary at One White Flint North,

11555 Rockville Pike, Rockville, MD 20852; or

(ii) Sent by mail or telegram to the Secretary, U.S. Nuclear Regulatory Commission, Washington, DC 20555–0001, Attention: Rulemakings and Adjudications Staff.

(2) Any person described in paragraph (e) of this section may file a written response to a petition requesting the Commission's review. This response may not exceed 30 pages and must be filed within 15 days after the filing date of the petition requesting the Commission's review.

(3) The Commission may adopt, by order, further procedures that, in its judgment, would serve the purpose of review of the Director's decision. The Commission may adopt, modify, or set aside the findings, conclusions, conditions, or terms in the Director's amendment review decision and will state the basis of its action in writing. If the Commission does not issue a decision or take other appropriate action within 90 days after receiving the petition for review, the Director's decision, under § 76.45(d), on the amendment application remains in effect.

[64 FR 44649, Aug. 17, 1999]

Subpart C—Certification

§ 76.51 Conditions of certification.

The Corporation shall comply with the certificate of compliance, any approved compliance plan, and the requirements set forth and referenced in this part, except as may be modified by the certificate or approved compliance plan.

§ 76.53 Consultation with Environmental Protection Agency.

In reviewing an application for a certificate, including the provisions of any compliance plan, the Director shall consult with the Environmental Protection Agency and solicit the Environmental Protection Agency's written comments on the application.

§ 76.55 Timely renewal.

In any case in which the Corporation has timely filed a sufficient application for a certificate of compliance, the existing certificate of compliance or approved compliance plan does not expire until the application for a certificate of compliance has been finally determined by the NRC. For purposes of this rule, a sufficient application is one that addresses all elements of § 76.36.

[62 FR 6670, Feb. 12, 1997]

§ 76.60 Regulatory requirements which apply.

The Nuclear Regulatory Commission will use the following requirements for certification of the Corporation for operation of the gaseous diffusion plants:

(a) The Corporation shall provide for adequate protection of the public health and safety and common defense and security.

(b) The Corporation shall comply with the provisions of this part.

(c) The Corporation shall comply with the applicable provisions of 10 CFR part 19, ''Notices, Instructions and Reports to Workers: Inspection and Investigations,'' with the following modifications:

(1) [Reserved]

(2) The Corporation shall post NRC Form 3 during the term of the certificate and for 30 days following certificate termination.

(d) The Corporation shall comply with the applicable provisions of 10 CFR part 20, ''Standards for Protection Against Radiation,'' with the following modifications:

(1) [Reserved]

(2) The Corporation shall comply with the requirements in this part or as specified in an approved plan for achieving compliance.

(e) The Corporation shall comply with the applicable provisions of 10 CFR part 21, ''Reporting of Defects and Noncompliance,'' with the following modifications:

(1) The Corporation shall comply with the requirements in §§ 21.6 and 21.21.

(2) Under § 21.31, procurement documents issued by the Corporation must specify that the provisions of 10 CFR Part 21 apply.

(f) The Corporation shall comply with the applicable provisions of 10 CFR Part 26, ''Fitness-for-Duty Programs.'' The requirements of this section apply only if the Corporation elects to engage in activities involving

formula quantities of strategic special nuclear material. When applicable, the requirements apply only to the Corporation and personnel carrying out the activities specified in § 26.4(d)(1) through (5), of this chapter.

(g) The Corporation shall comply with the applicable provisions of 10 CFR part 71, ''Packaging and Transportation of Radioactive Material.''

(h) The Corporation shall comply with the applicable provisions for physical security and material control and accounting as specified in subpart E to this part and contained in 10 CFR part 70, ''Domestic Licensing of Special Nuclear Material,'' part 73, ''Physical Protection of Plants and Materials,'' and part 74, ''Material Control and Accounting of Special Nuclear Material.'' The requirements in these parts address safeguards for three different kinds of nuclear material: Special nuclear material of low strategic significance (Category III), special nuclear material of moderate strategic significance (Category II), and formula quantities of strategic special nuclear material (Category I). The requirements for Category III material apply to the production of low enriched uranium. The requirements for Category II and Category I material apply only if the Corporation elects to engage in activities that involve these kinds of material and then only to the situations and locations that involve these kinds of material.

(i) The Corporation shall comply with the applicable provisions of 10 CFR part 95, ''Security Facility Approval and Safeguarding of National Security Information and Restricted Data,'' as specified in subpart E to this part.

[59 FR 48960, Sept. 23, 1994, as amended at 62 FR 6670, Feb. 12, 1997; 64 FR 44650, Aug. 17, 1999; 74 FR 45545, Sept. 3, 2009]

§ 76.62 Issuance of certificate and/or approval of compliance plan.

(a) Upon a finding of compliance with the Commission's regulations for issuance of a certificate and/or approval of a compliance plan, the Director shall issue a written decision explaining the decision. The Director may issue a certificate of compliance covering those areas where the Corporation is in compliance with applicable Commission requirements and approve a compliance plan for the remaining areas, if any, of noncompliance. The Director may impose any appropriate terms and conditions.

(b) The Director shall publish notice of the decision in the FEDERAL REGISTER.

(c) The Corporation, or any person whose interest may be affected, may file a petition, not to exceed 30 pages, requesting review of the Director's decision. This petition must be filed with the Commission not later than 30 days after publication of the FEDERAL REGISTER notice. Any person described in this paragraph may file a response to any petition for review, not to exceed 30 pages, within 15 days after the filing of the petition. If the Commission does not issue a decision or take other appropriate action within 90 days after the publication of the FEDERAL REGISTER notice, the Director's decision remains in effect. The Commission may adopt, by order, further procedures that, in its judgment, would serve the purpose of review of the Director's decision.

(d) The Commission may adopt, modify, or set aside the findings, conclusions, conditions, or terms in the Director's decision and will state the basis of its action in writing.

[59 FR 48960, Sept. 23, 1994, as amended at 64 FR 44650, Aug. 17, 1999]

§ 76.64 Denial of certificate or compliance plan.

(a) The Director may deny an application for a certificate of compliance or not approve a compliance plan upon a written finding that the application is in noncompliance with one or more of the Commission's requirements for the plant, or that the compliance plan is inadequate to protect the public health and safety or the common defense and security.

(b) The Director shall publish notice of the decision in the FEDERAL REGISTER.

(c) Before a denial of an application for a certificate of compliance, the Director shall advise the Corporation and the Department in writing of any areas

of noncompliance with the Commission's regulations and offer the Department or the Corporation an opportunity to submit a proposed compliance plan prepared by the Department regarding the identified areas of noncompliance. The Director shall take this action even if the Department or the Corporation has previously submitted a proposed compliance plan addressing in whole or in part the identified areas of noncompliance.

(d) The Corporation, or any person whose interest may be affected, may file a petition for review, not to exceed 30 pages, requesting review of the Director's decision. This petition for review must be filed with the Commission not later than 30 days after publication of the FEDERAL REGISTER notice. Any person described in this paragraph may file a response to any petition for review, not to exceed 30 pages, within 15 days after the filing of the petition for review. If the Commission does not issue a decision or take other appropriate action within 90 days after the publication of the FEDERAL REGISTER notice, the Director's decision remains in effect. The Commission may adopt, by order, further procedures that, in its judgment, would serve the purpose of review of the Director's decision.

(e) The Commission may adopt, modify, or set aside the findings, conclusions, conditions, or terms in the Director's decision and will state the basis of its action in writing.

[59 FR 48960, Sept. 23, 1994, as amended at 64 FR 44650, Aug. 17, 1999]

§ 76.65 Inalienability of certificates.

The certificate granted under the regulations in this part may not be transferred, assigned, or in any manner disposed of, either voluntarily or involuntarily, directly or indirectly, through transfer of control of any certificate to any person unless the Commission, after securing full information, finds that the transfer is in accordance with the provisions of the Act, and consents in writing.

§ 76.66 Expiration and termination of certificates.

(a) Except as provided in § 76.55, each certificate or approval issued pursuant to this part expires at the end of the day, in the month and year stated in the certificate or approval.

(b) The Corporation shall notify the Commission promptly, in writing under § 76.5, when the Corporation decides to terminate operation at either of the gaseous diffusion plants and other activities authorized under the certificate.

(c) If the Corporation does not submit a renewal application under § 76.36, the Corporation shall, on or before the expiration date specified in the existing certificate, terminate operation of the gaseous diffusion plants.

[59 FR 48960, Sept. 23, 1994, as amended at 62 FR 6670, Feb. 12, 1997]

§ 76.68 Plant changes.

(a) The Corporation may make changes to the plant or to the plant's operations as described in the safety analysis report without prior Commission approval provided all the provisions of this section are met:

(1) The Corporation shall conduct a written safety analysis which demonstrates that the changes would not result in undue risk to public health and safety, the common defense and security, or to the environment.

(2) The changes must be authorized by responsible management and approved by a safety review committee.

(3) The changes may not decrease effectiveness of the plant's safety, safeguards, and security programs.

(4) The changes may not involve a change in any condition to the certificate of compliance.

(5) The changes may not involve a change to any condition to the approved compliance plan.

(6) The changes may not involve an unreviewed safety question.

(b) To ensure that the approved application remains current with respect to the actual site description and that the plant's programs, plans, policies, and operations are in place, the Corporation shall submit revised pages to the approved application and safety analysis report, marked and dated to indicate each change. The Corporation shall evaluate any as-found conditions that do not agree with the plant's programs, plans, policies, and operations in accordance with paragraph (a) of

this section. These revisions must be submitted before April 15 of each calendar year, or at a shorter interval as may be specified in the certificate. If a renewal application for a certificate is filed in accordance with § 76.36 of this part, the revisions shall be incorporated into the application.

(c) The Corporation shall maintain records of changes in the plant and of changes in the programs, plans, policies, procedures and operations described in the approved application, and copies of the safety analyses on which the changes were based. The records of plant changes must be retained until the end of the duration of the lease. The records of changes in programs, plans, policies, procedures, and operations and copies of the safety analysis on which the changes were based must be retained for a period of 2 years.

(d) The Corporation may at any time apply under § 76.45 for amendment of the certificate to cover proposed new or modified activities not permitted by paragraph (a) of this section.

[59 FR 48960, Sept. 23, 1994, as amended at 62 FR 6670, Feb. 12, 1997]

§ 76.70 Post issuance.

(a) *Amendment of certificate terms and conditions.* The terms and conditions of a certificate of compliance or an approved compliance plan are subject to modification by reason of amendments to the Act, or by reason of rules, regulations, or orders issued in accordance with the Act.

(b) *Revocation, suspension, or amendments for cause.* A certificate of compliance or a compliance plan may be revoked, suspended, or amended, in whole or in part for:

(1) Any material false statement in the application or statement of fact required by the Commission in connection with the application;

(2) Conditions revealed by the application, or any report, record, inspection, or other means which would warrant the Commission to refuse to grant a certificate or approve a compliance plan on an original application; and

(3) Violation of, or failure to observe any of, the applicable terms and conditions of the Act, or the certificate of compliance, the compliance plan, or any rule, regulation, or order of the Commission.

(c) *Procedures governing amendment, revocation, suspension, or imposing requirements by order.* (1) Except in cases of willfulness or those in which the public health interest, common defense and security, or safety requires otherwise, no certificate of compliance or compliance plan may be amended, suspended, or revoked unless before the institution of proceedings therefore, facts or conduct which may warrant the action must have been called to the attention of the Corporation in writing and the Corporation shall have been accorded an opportunity to demonstrate or achieve compliance with the lawful requirements related to such action.

(2) The Commission may institute a proceeding to modify, suspend, or revoke a certificate or take such other action as may be proper by serving on the Corporation or other person subject to the jurisdiction of the Commission an order that will:

(i) Allege the violations with which the Corporation or other person subject to the Commission's jurisdiction is charged, or the potentially hazardous conditions or other facts deemed to be sufficient ground for the proposed action, and specify the action proposed;

(ii) Provide that the Corporation or other person who is charged must, and other interested persons may, submit a written response to the order within a reasonable period after publication of the order as may be specified in the order;

(iii) Specify the issues for resolution should the order be contested;

(iv) State the effective date of the order; if the Commission finds the public health, common defense and security, or safety, so require or that the violation or conduct causing the violation is willful, the order may provide that the proposed action be immediately effective pending further order and include a statement of reasons for making the proposed action immediately effective;

(v) Provide that the Commission may make a final decision after consideration of the written submissions or may in its discretion adopt by order, upon the Commission's own initiative or at the request of the Corporation or

an interested person, further procedures for a hearing of the issues before making a final enforcement decision. These procedures may include requirements for further participation in the proceeding, such as the requirements for intervention under Part 2, subparts C, G or L of this chapter. Submission of written comments by interested persons do not constitute entitlement to further participation in the proceeding. Further procedures will not normally be provided for at the request of an interested person unless the person is adversely affected by the order.

(3) The Corporation or other person to whom the Commission has issued an immediately effective order may, in addition to submitting a written response, move the Commission to set aside the immediate effectiveness of the order on the ground that the order, including the need for immediate effectiveness, is not based on adequate evidence but on mere suspicion, unfounded allegations, or error. The motion must state with particularity the reasons why the order is not based on adequate evidence and must be accompanied by affidavits or other evidence relied on. The NRC staff shall respond within 5 days of the receipt of the motion.

(d) *Notice of violation.* (1) In response to an alleged violation of any provision of the Act or NRC regulations or the conditions of a certificate, compliance plan, or an order issued by the Commission, the Commission may serve on the Corporation or other person subject to the jurisdiction of the Commission a written notice of violation. A separate notice may be omitted if an order or demand for information pursuant to this section is issued that otherwise identifies the apparent violation. The notice of violation will concisely state the alleged violation and will require the Corporation or other person subject to it, within twenty (20) days of the date of the notice or other specified time, to submit a written explanation or statement in reply including:

(i) Corrective steps which have been taken by the Corporation or other person and the results achieved;

(ii) Corrective steps which will be taken; and

(iii) The date when full compliance will be achieved.

(2) The notice may require the Corporation or other person subject to the jurisdiction of the Commission to admit or deny the violation and to state the reasons for the violation, if admitted. It may provide that, if an adequate reply is not received within the time specified in the notice, the Commission may issue an order or a demand for information as to why the certificate should not be modified, suspended, or revoked or why such other action as may be proper should not be taken.

(e) *Additional information.* At any time after the granting of a certificate of compliance or approval of a compliance plan, the Commission may require further statements from the Corporation, signed under oath or affirmation, in order to enable the Commission to determine whether the certificate or approved compliance plan should be modified or revoked.

[59 FR 48960, Sept. 23, 1994, as amended at 69 FR 2281, Jan. 14, 2004]

§ 76.72 Miscellaneous procedural matters.

(a) The filing of any petitions for review or any responses to these petitions are governed by the procedural requirements set forth in 10 CFR 2.302(a) and (c), 2.304, 2.305, 2.306, and 2.307. Additional guidance regarding the filing and service of petitions for review of the Director's decision and responses to these petitions may be provided in the Director's decision or by order of the Commission.

(b) The Secretary of the Commission has the authority to rule on procedural matters set forth in 10 CFR 2.346.

(c) There are no restrictions on ex parte communications or on the ability of the NRC staff and the Commission to communicate with one another at any stage of the regulatory process, with the exception that the rules on ex parte communications and separation of functions set forth in 10 CFR 2.347 and 2.348 apply to proceedings under 10 CFR Part 2 for imposition of a civil penalty.

(d) The procedures set forth in 10 CFR 2.205, and in 10 CFR part 2, subparts C, G, L and N will be applied in

connection with NRC action to impose a civil penalty pursuant to Section 234 of the Atomic Energy Act of 1954, as amended, or Section 206 of the Energy Reorganization Act of 1974 and the implementing regulations in 10 CFR part 21 (Reporting of Defects and Noncompliance), as authorized by section 1312(e) of the Atomic Energy Act of 1954, as amended.

(e) The procedures set forth in 10 CFR 2.206 apply to a request by any person to institute a proceeding pursuant to § 76.70 to amend, revoke, or suspend a certificate of compliance or approved compliance plan, or for such other action as may be proper.

[59 FR 48960, Sept. 23, 1994, as amended at 62 FR 6670, Feb. 12, 1997; 69 FR 2281, Jan. 14, 2004]

§ 76.74 Computation and extension of time.

(a) In computing any period of time, the day of the act, event or default after which the designated period of time begins to run is not included. The last day of the period so computed is included unless it is a Saturday, Sunday, or legal holiday at the place where the action or event is to occur, in which event the period runs until the end of the next day which is neither a Saturday, Sunday, nor holiday.

(b) Except as otherwise provided by law, whenever an act is required or allowed to be done at or within a specified time, the time fixed or the period of time prescribed may for good cause be extended or shortened by the Commission.

§ 76.76 Backfitting.

(a)(1) Backfitting is defined as the modification of, or addition to, systems, structures, or components of a plant; or to the procedures or organization required to operate a plant; any of which may result from a new or amended provision in the Commission rules or the imposition of a regulatory staff position interpreting the Commission rules that is either new or different from a previous NRC staff position.

(2) Except as provided in paragraph (a)(4) of this section, the Commission shall require a systematic and documented analysis pursuant to paragraph (b) of this section for backfits which it seeks to impose.

(3) Except as provided in paragraph (a)(4) of this section, the Commission shall require the backfitting of a plant only when it determines, based on the analysis described in paragraph (b) of this section, that there is a substantial increase in the overall protection of the public health and safety or the common defense and security to be derived from the backfit and that the direct and indirect costs of implementation for that plant are justified in view of this increased protection.

(4) The provisions of paragraphs (a)(2) and (a)(3) of this section are inapplicable and, therefore, backfit analysis is not required and the standards in paragraph (a)(3) of this section do not apply where the Commission or staff, as appropriate, finds and declares, with appropriately documented evaluation for its finding, any of the following:

(i) That a modification is necessary to bring a plant into compliance with a certificate or the rules or orders of the Commission, or into conformance with written commitments by the Corporation; or

(ii) That regulatory action is necessary to ensure that the plant provides adequate protection to the health and safety of the public and is in accord with the common defense and security; or

(iii) That the regulatory action involves defining or redefining what level of protection to the public health and safety or common defense and security should be regarded as adequate.

(5) The Commission shall always require the backfitting of a plant if it determines that the regulatory action is necessary to ensure that the plant provides adequate protection to the health and safety of the public and is in accord with the common defense and security.

(6) The documented evaluation required by paragraph (a)(4) of this section must include a statement of the objectives of and reasons for the modification and the basis for invoking the exception. If immediate effective regulatory action is required, then the documented evaluation may follow, rather than precede, the regulatory action.

(7) If there are two or more ways to achieve compliance with a certificate or the rules or orders of the Commission, or with written Corporation commitments, or there are two or more ways to reach a level of protection which is adequate, then ordinarily the Corporation is free to choose the way which best suits its purposes. However, should it be necessary or appropriate for the Commission to prescribe a specific way to comply with its requirements or to achieve adequate protection, then cost may be a factor in selecting the way, provided that the objective of compliance or adequate protection is met.

(b) In reaching the determination required by paragraph (a)(3) of this section, the Commission will consider how the backfit should be scheduled in light of other ongoing regulatory activities at the plant and, in addition, will consider information available concerning any of the following factors as may be appropriate and any other information relevant and material to the proposed backfit:

(1) Statement of the specific objectives that the proposed backfit is designed to achieve;

(2) General description of the activity that would be required by the Corporation in order to complete the backfit;

(3) Potential change in the risk to the public from the accidental release of radioactive material;

(4) Potential impact on radiological exposure of facility employees;

(5) Installation and continuing costs associated with the backfit, including the cost of plant downtime;

(6) The potential safety impact of changes in plant or operational complexity, including the relationship to proposed and existing regulatory requirements;

(7) The estimated resource burden on the NRC associated with the proposed backfit and the availability of such resources;

(8) The potential impact of differences in plant type, design, or age on the relevancy and practicality of the proposed backfit; and

(9) Whether the proposed backfit is interim or final and, if interim, the justification for imposing the proposed backfit on an interim basis.

(c) No certificate will be withheld during the pendency of backfit analyses required by the Commission's rules.

(d) The Executive Director for Operations shall be responsible for implementation of this section, and all analyses required by this section shall be approved by the Executive Director for Operations or his or her designee.

[59 FR 48960, Sept. 23, 1994, as amended at 62 FR 6671, Feb. 12, 1997]

Subpart D—Safety

§ 76.81 Authorized use of radioactive material.

Unless otherwise authorized by law, the Corporation shall confine its possession and use of radioactive material to the locations and purposes covered by the certificate and/or approved compliance plan. Except as otherwise provided, the certificate or approved compliance plan issued pursuant to the requirements in this part entitles the Corporation to receive title to, own, acquire, receive, possess, and use radioactive material in accordance with the certificate.

§ 76.83 Transfer of radioactive material.

(a) The Corporation may not transfer radioactive material except as authorized pursuant to this section.

(b) Except as otherwise provided and subject to the provisions of paragraphs (c) and (d) of this section, the Corporation may transfer radioactive material:

(1) From one component of the Corporation to another;

(2) To the Department;

(3) To the agency in any Agreement State which regulates radioactive materials pursuant to an agreement with the Commission under Section 274 of the Act, if the quantity transferred is not sufficient to form a critical mass;

(4) To any person exempt from the licensing requirements of the Act and requirements in this part, to the extent permitted under the exemption;

(5) To any person in an Agreement State, subject to the jurisdiction of that State, who has been exempted from the licensing requirements and regulations of that State, to the extent permitted under the exemption;

(6) To any person authorized to receive the radioactive material under terms of a specific license or a general license or their equivalents issued by the Commission or an Agreement State;

(7) To any person abroad pursuant to an export license issued under part 110 of this chapter; or

(8) As otherwise authorized by the Commission in writing.

(c) Before transferring radioactive material to any party specified in paragraph (b) of this section, the Corporation shall verify that the transferee is authorized to receive the type, form, and quantity of radioactive material to be transferred.

(d) The following methods for the verification required by paragraph (c) of this section are acceptable:

(1) The Corporation may have in its possession and read a current copy of the transferee's specific license or confirmation of registration. The Corporation shall retain a copy of each license or confirmation for 3 years from the date that it was obtained.

(2) The Corporation may have in its possession a written confirmation by the transferee that the transferee is authorized by license or registration confirmation to receive the type, form, and quantity of special nuclear material to be transferred, specifying the license or registration confirmation number, issuing agency, and expiration date. The Corporation shall retain the written confirmation as a record for 3 years from the date of receipt of the confirmation;

(3) For emergency shipments, the Corporation may accept a certification by the transferee that he or she is authorized by license or registration certification to receive the type, form, and quantity of special nuclear material to be transferred, specifying the license or registration number, issuing agency, and expiration date, provided that the oral confirmation is confirmed in writing within 10 days. The Corporation shall retain the written confirmation of the oral certification for 3 years from the date of receipt of the confirmation;

(4) The Corporation may obtain other sources of information compiled by a reporting service from official records of the Commission or the licensing agency of an Agreement State as to the identity of licensees and the scope and expiration dates of licenses and registrations. The Corporation shall retain the compilation of information as a record for 3 years from the date that it was obtained; or

(5) When none of the methods of verification described in paragraphs (d)(1) to (4) of this section are readily available or when the Corporation desires to verify that information received by one of these methods is correct or up to date, the Corporation may obtain and record confirmation from the Commission or the licensing agency of an Agreement State that the transferee is licensed to receive the special nuclear material. The Corporation shall retain the record of confirmation for 3 years from the date the record is made.

§ 76.85 Assessment of accidents.

The Corporation shall perform an analysis of potential accidents and consequences to establish the basis for limiting conditions for operation of the plant with respect to the potential for releases of radioactive material. Special attention must be directed to assurance that plant operation will be conducted in a manner to prevent or to mitigate the consequences from a reasonable spectrum of postulated accidents which include internal and external events and natural phenomena in order to ensure adequate protection of the public health and safety. Plant operating history relevant to the assessment should be included. In performing this assessment, the full range of operations should be considered including, but not necessarily limited to, operation at the maximum capacity contemplated. The assessment must be performed using an expected release rate resulting from anticipated operational occurrences and accidents with existing systems and procedures intended to mitigate the release consequences, along with site characteristics, including meteorology, to evaluate the offsite radiological consequences.

§ 76.87 Technical safety requirements.

(a) The Corporation shall establish technical safety requirements. In establishing the requirements, the Corporation shall consider the analyses and results of the safety analysis report submitted pursuant to § 76.35.

(b) The format for the technical safety requirements must be appropriate for each individual requirement.

(c) Appropriate references to established procedures and/or equipment to address each of the following safety topics must be included in technical safety requirements:

(1) Effects of natural phenomena;

(2) Building and process ventilation and offgas;

(3) Criticality prevention;

(4) Fire prevention;

(5) Radiation protection;

(6) Radioactive waste management;

(7) Maintenance;

(8) Environmental protection;

(9) Packaging and transporting nuclear materials;

(10) Accident analysis;

(11) Chemical safety;

(12) Sharing of facilities, structures, systems and components;

(13) Utilities essential to radiological safety; and

(14) Operations.

(d) Technical safety requirements must include items in the following categories:

(1) *Safety limits*. (i) If any safety limit is exceeded, corrective action must be taken as stated in the response procedures associated with the technical safety requirements or the affected part of the process must be shut down unless this action would increase the risk to the health and safety of the public or plant personnel.

(ii) If any safety limit is exceeded, the Corporation shall notify the Commission if required by § 76.120, review the matter, and record the results of the review, including the cause of the condition and the basis for corrective action taken to preclude recurrence.

(iii) The Corporation shall retain the record of the results of each review until the Commission no longer has certification authority.

(2) *Limiting control settings*. (i) Where a limiting control setting is specified for a variable on which a safety limit has been placed, the setting must be so chosen that protective action, either automatic or manual, will correct the abnormal situation before a safety limit is exceeded. If, during operation, the automatic alarm or protective devices do not function as required, appropriate action must be taken to maintain the variables within the limiting control-setting values and to repair promptly the automatic devices or to shut down the affected part of the process.

(ii) If, during operation, an automatic alarm or protective device does not function as required, the Corporation shall notify the Commission if required by 76.120, review the matter, and record the results of the review, including the cause of the condition and the basis for corrective action taken to preclude recurrence.

(iii) The Corporation shall retain the record of the results of each review until the Commission no longer has certification authority.

(3) *Limiting conditions for operation*. When a limiting condition for operation of any process step in the system is not met, the Corporation shall shut down that part of the operation or follow any remedial action permitted by the technical safety requirements until the condition can be met.

(i) If a limiting condition for operation of any process step in the system is not met, the Corporation shall notify the Commission if required by § 76.120, review the matter, and record the results of the review, including the cause of the condition and the basis for corrective action taken to preclude recurrence.

(ii) The Corporation shall retain the record of the results of each review until the Commission no longer has certification authority.

(4) *Design features*. Design features to be included are those systems, components, or structures of the plant which, if altered or modified, would have a significant effect on safety and are not covered in categories described in paragraphs (d) (1), (2), and (3) of this section.

(5) Surveillance requirement.

(6) Administrative controls.

§ 76.89 Criticality accident requirements.

(a) The Corporation must maintain and operate a criticality monitoring and audible alarm system meeting the requirements of paragraph (b) of this section in all areas of the facility. The Corporation may describe for the approval of the Commission defined areas to be excluded from the monitoring requirement. This submittal must describe the measures that will be used to ensure against criticality, including kinds and quantities of material that will be permitted and measures that will be used to control those kinds and quantities of material.

(b) The system must detect and annunciate a criticality that produces an absorbed dose in soft tissue of 20 rads of combined neutron and gamma radiation at an unshielded distance of 2 meters from the reacting material within 1 minute. Coverage of all monitored areas must be provided by two detectors.

§ 76.91 Emergency planning.

The Corporation shall establish, maintain, and be prepared to follow a written emergency plan. The emergency plan submitted under § 76.35(f) must include the following information:

(a) *Plant description.* A brief description of the plant and area near the plant site.

(b) *Types of accidents.* An identification of each type of radioactive materials accident for which protective actions may be needed.

(c) *Classification of accidents.* A system for classifying accidents as alerts or site area emergencies.

(d) *Detection of accidents.* Identification of the means of detecting each type of accident in a timely manner.

(e) *Mitigation of consequences.* A brief description of the means and equipment for mitigating the consequences of each type of accident, including those provided to protect workers onsite, and a description of the program for maintaining the equipment.

(f) *Assessment of releases.* A brief description of the methods and equipment to assess releases of radioactive materials.

(g) *Responsibilities.* A brief description of the responsibilities of all individuals supporting emergency response should an accident occur, including identification of personnel responsible for promptly notifying offsite response organizations and the NRC, as well as a brief description of responsibilities for developing, maintaining, and updating the plan.

(h) *Notification and coordination.* A commitment to and a brief description of the means to promptly notify offsite response organizations, including the request for offsite assistance and medical assistance for the treatment of contaminated injured onsite workers when appropriate. A control point must be established. The notification and coordination must be planned so that unavailability of some personnel, parts of the plant, and some equipment does not prevent the notification and coordination. The Corporation shall also commit to notify the NRC Operations Center immediately after notification of the appropriate offsite response organizations and not later than 1 hour after the Corporation declares an emergency. These reporting requirements do not supersede or release the Corporation from complying with the requirements under the Emergency Planning and Community Right-to-Know Act of 1986, Title III, Public Law 99–499, or other State or Federal reporting requirements.

(i) *Information to be communicated.* A brief description of the plant status, radioactive releases, and recommended protective actions, if necessary, to be provided to offsite response organizations and to the NRC.

(j) *Training.* A brief description of the frequency, performance objectives, and plans for the training that the Corporation will provide workers on how to respond to an emergency including any special instructions, briefings, and orientation tours the Corporation would offer to fire, police, medical, and other emergency personnel. The training must familiarize personnel with site-specific emergency procedures. The training must also prepare site personnel for their responsibilities for the accident scenarios postulated as most probable for the specific site, including

the use of team training for these accident scenarios.

(k) *Safe shutdown*. A brief description of the means of restoring the plant to a safe condition after an accident.

(l) *Exercises*. Provisions for conducting quarterly communications checks with offsite response organizations and biennial onsite exercises to test response to simulated emergencies. Quarterly communications checks with offsite response organizations must include the check and update of all necessary telephone numbers. The Corporation shall invite offsite response organizations to participate in the biennial exercises. Participation of offsite response organizations in biennial exercises, although recommended, is not required. Exercises must use accident scenarios postulated as most probable for the specific site and the accident scenarios must not be made known to most exercise participants. The Corporation shall critique each exercise using individuals that do not have direct implementation responsibility for the plan. Critiques of exercises must evaluate the appropriateness of the plan, emergency procedures, facilities, equipment, training of personnel, and overall effectiveness of the response. Deficiencies found by the critiques must be corrected.

(m) *Hazardous chemicals*. Confirmation that the Corporation has met its responsibilities under the Emergency Planning and Community Right-to-Know Act of 1986, Title III, Public Law 99–499, if applicable to the Corporation's activities at the proposed place of use of the special nuclear material.

(n) *Comment from offsite response organizations*. The Corporation shall allow the offsite response organizations that are expected to respond in case of an accident 60 days to comment on the emergency plan before submitting it to NRC. The Corporation shall provide any comments received within the 60 days to the NRC with the emergency plan.

(o) *Changes to emergency plan*. The Corporation may make changes to the emergency plan without prior Commission approval if the changes do not decrease the effectiveness of the plan. The Corporation shall furnish these changes to the NRC in accordance with § 76.5 and to affected offsite response organizations within 6 months after the change is made.

[59 FR 48960, Sept. 23, 1994, as amended at 64 FR 44650, Aug. 17, 1999]

§ 76.93 Quality assurance.

The Corporation shall establish, maintain, and execute a quality assurance program satisfying each of the applicable requirements of ASME NQA–1–1989, ''Quality Assurance Program Requirements for Nuclear Facilities,'' or satisfying acceptable alternatives to the applicable requirements. The Corporation shall execute the criteria in a graded approach to an extent that is commensurate with the importance to safety.

§ 76.95 Training.

A training program must be established, implemented, and maintained for individuals relied upon to operate, maintain, or modify the GDPs in a safe manner. The training program shall be based on a systems approach to training that includes the following:

(a) Systematic analysis of the jobs to be performed.

(b) Learning objectives derived from the analysis which describe desired performance after training.

(c) Training design and implementation based on the learning objectives.

(d) Evaluation of trainee mastery of the objectives during training.

(e) Evaluation and revision of the training based on the performance of trained personnel in the job setting.

Subpart E—Safeguards and Security

§ 76.111 Physical security, material control and accounting, and protection of certain information.

Nuclear Regulatory Commission regulations that will be used for certification of the Corporation[1] for physical security and material control and accounting are contained in title 10 of

[1] For the purpose of this subpart, the terms ''licensee'' or ''license'' used in parts 70, 73, and 74 of this chapter, mean, respectively, the Corporation, or the certificate of compliance or approved compliance plan.

the Code of Federal Regulations as described in this subpart. The regulations referenced in this subpart contain requirements for physical security and material control and accounting for formula quantities of strategic special nuclear material (Category I), special nuclear material of moderate strategic significance (Category II), and special nuclear material of low strategic significance (Category III), and for protection of Restricted Data, National Security Information, Safeguards Information, and information designated by the U.S. Department of Energy as Unclassified Controlled Nuclear Information.

[62 FR 6671, Feb. 12, 1997, as amended at 85 FR 65664, Oct. 16, 2020]

§ 76.113 Formula quantities of strategic special nuclear material—Category I.

(a) The requirements for material control and accounting for formula quantities of strategic special nuclear material (Category I) are contained in §§ 74.11, 74.13, 74.15, 74.17, 74.19, 74.51, 74.53, 74.55, 74.57, 74.59, 74.81, and 74.82 of this chapter.

(b) The requirements for physical security for formula quantities of strategic special nuclear material (Category I) are contained in §§ 70.22(h), 73.20, 73.40, 73.45, 73.46, 73.70, and 73.71.

(c) The requirements for the protection of Safeguards Information pertaining to formula quantities of strategic special nuclear material (Category I) are contained in §§ 73.21 and 73.22 of this chapter. Information designated by the U.S. Department of Energy (DOE) as Unclassified Controlled Nuclear Information must be protected in accordance with DOE requirements.

(d) The Corporation may neither transport Category I material offsite nor deliver Category I material to a carrier for transport offsite.

[59 FR 48960, Sept. 23, 1994, as amended at 62 FR 6671, Feb. 12, 1997; 67 FR 78149, Dec. 23, 2002; 73 FR 63581, Oct. 24, 2008]

§ 76.115 Special nuclear material of moderate strategic significance—Category II.

(a) The requirements for material control and accounting for special nuclear material of moderate strategic significance (Category II) are contained in §§ 74.11. 74.13, 74.15, 74.17, 74.19, 74.41, 74.43, 74.45, 74.81, and 74.82 of this chapter.

(b) The requirements for physical security for special nuclear material of moderate strategic significance (Category II) are contained in §§ 73.67, and 73.71 of this chapter.

(c) The Corporation may neither transport Category II material offsite nor deliver Category II material to a carrier for transport offsite.

(d) The requirements for the protection of Safeguards Information pertaining to special nuclear material of moderate strategic significance—Category II are contained in §§ 73.21 and 73.22 of this chapter. Information designated by the U.S. Department of Energy (DOE) as Unclassified Controlled Nuclear Information must be protected in accordance with DOE requirements.

[59 FR 48960, Sept. 23, 1994, as amended at 67 FR 78149, Dec. 23, 2002; 73 FR 63581, Oct. 24, 2008]

§ 76.117 Special nuclear material of low strategic significance—Category III.

(a) The requirements for material control and accounting for special nuclear material of low strategic significance (Category III) are contained in §§ 74.11, 74.13, 74.15, 74.17, 74.19, 74.33, 74.81, and 74.82 of this chapter. However, inventories of uranium outside of the enrichment processing equipment conducted at least every 370 days are deemed to satisfy the requirements of § 74.19(c).

(b) The requirements for physical security for special nuclear material of low strategic significance (Category III) are contained in §§ 73.67, 73.71, and 73.74 of this chapter.

(c) The requirements for the protection of Safeguards Information pertaining to special nuclear material of low strategic significance—Category III are contained in §§ 73.21 and 73.22 of this chapter. Information designated by the U.S. Department of Energy (DOE) as Unclassified Controlled Nuclear Information must be protected in accordance with DOE requirements.

[59 FR 48960, Sept. 23, 1994, as amended at 67 FR 78149, Dec. 23, 2002; 73 FR 63581, Oct. 24, 2008]

§ 76.119 Security facility approval and safeguarding of National Security Information and Restricted Data.

The requirements for security facility approval and for safeguarding of classified matter are contained in part 95 of this chapter. For the purpose of this subpart, the term ''licensee'' or ''license'' used in part 95 of this chapter means, respectively, the corporation, or the certificate of compliance or approved compliance plan.

Subpart F—Reports and Inspections

§ 76.120 Reporting requirements.

(a) *Immediate report.* The Corporation shall notify the NRC Headquarters Operations Center by telephone at the numbers specified in appendix A to part 73 of this chapter within 1 hour after discovery of:

(1) A criticality event;

(2) Any loss, other than normal operating loss, of special nuclear material;

(3) Any theft or unlawful diversion of special nuclear material which the Corporation is authorized to possess or any incident in which an attempt has been made or is believed to have been made to commit a theft or unlawful diversion of special nuclear material; or

(4) An emergency condition that has been declared an alert or site area emergency.

(b) *Four-hour report.* The Corporation shall notify the NRC Operations Center as soon as possible but not later than 4 hours after discovery of an event[1] that prevents immediate protective actions necessary to avoid releases or exposures to radiation or radioactive materials that could exceed regulatory limits.

(c) *Twenty-four hour report.* The Corporation shall notify the NRC Operations Center within 24 hours after the discovery of any of the following events involving radioactive material:

(1) An unplanned contamination event that:

(i) Requires access to the contaminated area, by workers or the public, to be restricted for more than 24 hours by imposing additional radiological controls or by prohibiting entry into the area;

(ii) Involves a quantity of material greater than five times the lowest annual limit on intake specified in appendix B to §§ 20.1001 through 20.2402 of 10 CFR part 20 for the material; and

(iii) Causes access to the contaminated area to be restricted for any reason other than to allow isotopes with a half-life of less than 24 hours to decay prior to decontamination.

(2) An event in which equipment is disabled or fails to function as designed when:

(i) The equipment is required by a Technical Safety Requirement to prevent releases, prevent exposures to radiation and radioactive materials exceeding specified limits, mitigate the consequences of an accident, or restore this facility to a preestablished safe condition after an accident;

(ii) The equipment is required by a Technical Safety Requirement to be available and operable and either should have been operating or should have operated on demand; and

(iii) No redundant equipment is available and operable to perform the required safety function.

(3) An event that requires unplanned medical treatment at a medical facility of an individual with radioactive contamination on the individual's clothing or body.

(4) A fire or explosion damaging any radioactive material or any device, container, or equipment containing radioactive material when:

(i) The quantity of material involved is greater than five times the lowest annual limit on intake specified in appendix B to §§ 20.1001 through 20.2402 of 10 CFR part 20 for the material; and

(ii) The damage affects the integrity of the radioactive material or its container.

(d) *Preparation and submission of reports.* Reports made by the Corporation in response to the requirements of this section must be made as follows:

(1) *Operations Center reports.* The Corporation shall make reports required by paragraphs (a), (b), and (c) of this section by telephone to the NRC Operations Center. To the extent that the information is available at the time of

[1] Events may include fires, explosions, radiological releases, etc.

notification, the information provided in these reports must include:

(i) The caller's name and call back telephone number;

(ii) A description of the event, including date and time;

(iii) The exact location of the event;

(iv) The isotopes, quantities, and chemical and physical form of the material involved;

(v) Any personnel radiation exposure data available; and

(vi) A description of any actions taken in response to the event.

(2) *Written report.* A report required by paragraph (a), (b) or (c) of this section must be followed by a written report within 30 days of the initial report. Written reports prepared pursuant to other regulations may be submitted to fulfill this requirement if the reports contain all of the necessary information and the appropriate distribution is made. These written reports must be sent to the NRC by an appropriate method listed in § 76.5. The reports must include the following information:

(i) A description of the event, including the probable cause and the manufacturer and model number (if applicable) of any equipment that failed or malfunctioned;

(ii) The exact location of the event;

(iii) A description of isotopes, quantities and chemical and physical form of the material involved;

(iv) The date and time of the event;

(v) The causes, including the direct cause, the contributing cause, and the root cause;

(vi) Corrective actions taken or planned and the results of any evaluations or assessments;

(vii) The extent of exposure of individuals to radiation or to radioactive materials without identification of individuals by name; and

(viii) Lessons learned from the event.

[59 FR 48960, Sept. 23, 1994, as amended at 68 FR 58822, Oct. 10, 2003; 85 FR 65664, Oct. 16, 2020]

§ 76.121 Inspections.

(a) The Corporation shall afford to the Commission opportunity to inspect the premises and plants under the Corporation's control where radioactive material is used, produced, or stored.

(b) The Corporation shall make available to the Commission for inspection records kept pertaining to receipt, possession, use, acquisition, import, export, or transfer of radioactive material.

(c)(1) The Corporation shall provide rent-free office space for the exclusive use of Commission inspection personnel upon request by the Director, Office of Nuclear Material Safety and Safeguards, or the NRC Region III Administrator. Heat, air conditioning, light, electrical outlets, and janitorial services must be furnished by the Corporation. The office must be convenient to and have full access to the plant, and must provide the inspector both visual and acoustic privacy.

(2) The space provided must be adequate to accommodate the NRC resident inspection staff, a part-time secretary, and transient NRC personnel. Space must be generally commensurate with other office facilities at the site. The office space that is provided must be subject to the approval of the Director, Office of Nuclear Material Safety and Safeguards, or the NRC Region III Office. All furniture, supplies, and communication equipment will be furnished by the Commission.

(3) The Corporation shall afford any NRC resident inspector assigned to that site or other NRC inspectors identified by the Director, Office of Nuclear Material Safety and Safeguards, or the NRC Region III Administrator, as likely to inspect the plant, immediate, unfettered access equivalent to access provided regular plant employees, following proper identification and compliance with applicable access control measures for security, radiological protection, and personal safety.

§ 76.123 Tests.

The Corporation shall perform, or permit the Commission to perform, any tests the Commission deems appropriate or necessary for administration of the requirements in this part. These tests include tests of:

(a) Radioactive material;

(b) Facilities where radioactive material is utilized, produced or stored;

(c) Radiation detection and monitoring instruments; and

(d) Other equipment and devices used in connection with the production, utilization, or storage of radioactive material.

Subpart G—Enforcement

§76.131 Violations.

(a) The Commission may obtain an injunction or other court order to prevent a violation of the provisions of:

(1) The Atomic Energy Act of 1954, as amended;

(2) Title II of the Energy Reorganization Act of 1974, as amended;

(3) A regulation or order issued pursuant to those Acts.

(b) The Commission may obtain a court order for the payment of a civil penalty imposed under Section 234 of the Atomic Energy Act of 1954, as amended, or under Section 1312(e) of the Atomic Energy Act of 1954, as amended, and Section 206 of the Energy Reorganization Act of 1974, as amended, for violations of:

(1) Sections 53, 57, 62, 63, 81, 82, 101, 103, 104, 107, 109, or 1701 of the Atomic Energy Act of 1954, as amended;

(2) Section 206 of the Energy Reorganization Act;

(3) Any rule, regulation, or order issued pursuant to the sections specified in paragraph (b)(1) of this section;

(4) Any term, condition, or limitation of any certificate of compliance or approved compliance plan issued under the sections specified in paragraph (b)(1) of this section.

[62 FR 6671, Feb. 12, 1997]

§76.133 Criminal penalties.

(a) Section 223 of the Atomic Energy Act of 1954, as amended, provides for criminal sanctions for willful violation of, attempted violation of, or conspiracy to violate, any regulation issued under Section 161b or 161i of the Act. For purposes of Section 223, all the regulations in part 76 are issued under Section 161b or 161i except for the sections listed in paragraph (b) of this section.

(b) The regulations in part 76 that are not issued under Section 161b or 161i for the purposes of Section 223 are as follows: §§76.1, 76.2, 76.4, 76.5, 76.6, 76.23, 76.33, 76.35, 76.37, 76.39, 76.41, 76.43, 76.45, 76.53, 76.55, 76.60, 76.62, 76.64, 76.70, 76.72, 76.131, and 76.133.

PART 81—STANDARD SPECIFICATIONS FOR THE GRANTING OF PATENT LICENSES

GENERAL PROVISIONS

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NRC-OWNED INVENTIONS—PATENTS AND APPLICATIONS

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81.52 Appeals Board.
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AUTHORITY: Atomic Energy Act of 1954, secs. 156, 161 (42 U.S.C. 2186, 2201); Energy Reorganization Act of 1974, sec. 201 (42 U.S.C. 5841); 44 U.S.C. 3504 note.

SOURCE: 38 FR 7318, Mar. 20, 1973, unless otherwise noted.

GENERAL PROVISIONS

§81.1 Purpose.

The regulations of this part establish the standard specifications for the issuance of licenses to rights in inventions covered by patents or patent applications vested in the United States of America, as represented by or in the custody of the Commission and other patents in which the Commission has the right to accord or require the grant of licenses.

[40 FR 8793, Mar. 3, 1975]

§81.2 Definitions.

As used in this part:

(a) *Act* means the Atomic Energy Act of 1954 (68 Stat. 619), including any amendments thereto;

(b) *Commission* means the Nuclear Regulatory Commission as established by the Act, or its duly authorized designee. The Assistant General Counsel for Patents is the designee of the Commission under this subpart;

(c) *NRC invention* means an invention covered by a U.S. patent or patent application that is vested in the Government of the United States, as represented by or in the custody of the Commission, or in which the Government of the United States of America, as represented by the Commission, has the right to accord or require the grant of licenses where such invention is designated by the Commission as appropriate for the grant of a nonexclusive or exclusive license; and

(d) *To the point of practical application* means to manufacture in the case of composition, machine or product, to practice in the case of a process, or to operate in the case of a machine, under such conditions as to establish that the invention is being worked and that its benefits are reasonably accessible to the public.

(e) *NRC foreign invention* means an invention covered by a patent, or an application for a patent, issued by a government or authority of a country other than the United States that is vested in the Government of the United States, as represented by the Commission.

[38 FR 7318, Mar. 20, 1973, as amended at 38 FR 8241, Mar. 30, 1973]

§ 81.3 Communications.

All communications concerning the regulations in this part, including applications for licenses, should be sent to the NRC either by mail addressed to the U.S. Nuclear Regulatory Commission, Washington, DC 20555–0001; by hand delivery to the NRC's offices at 11555 Rockville Pike, Rockville, Maryland; or, where practicable, by electronic submission, for example, via Electronic Information Exchange, or CD-ROM. Electronic submissions must be made in a manner that enables the NRC to receive, read, authenticate, distribute, and archive the submission, and process and retrieve it a single page at a time. Detailed guidance on making electronic submissions can be obtained by visiting the NRC's Web site at *http://www.nrc.gov/site-help/e-submittals.html;* by e-mail to *MSHD.Resource@nrc.gov;* or by writing the Office of the Chief Information Officer, U.S. Nuclear Regulatory Commission, Washington, DC 20555–0001. The guidance discusses, among other topics, the formats the NRC can accept, the use of electronic signatures, and the treatment of nonpublic information.

[68 FR 58823, Oct. 10, 2003, as amended at 74 FR 62685, Dec. 1, 2009; 80 FR 74982, Dec. 1, 2015]

§ 81.4 Interpretations.

Except as specifically authorized by the Commission in writing and by § 81.53, no interpretation of the meaning of the regulations in this part by an officer or employee of the Commission other than a written interpretation by the General Counsel will be recognized to be binding upon the Commission.

§ 81.8 Information collection requirements: OMB approval.

(a) The Nuclear Regulatory Commission has submitted the information collection requirements contained in this part to the Office of Management and Budget (OMB) for approval as required by the Paperwork Reduction Act (44 U.S.C. 3501 *et seq.*). The NRC may not conduct or sponsor, and a person is not required to respond to, a collection of information unless it displays a currently valid OMB control number. OMB has approved the information collection requirements contained in this part under control number 3150–0121.

(b) The approved information collection requirements contained in this part appear in §§ 81.20, 81.32, and 81.40.

[55 FR 23422, June 8, 1990, as amended at 62 FR 52190, Oct. 6, 1997]

NRC-Owned Inventions—Patents and Applications

§ 81.10 Authority.

The regulations of this subpart governing the licensing or rights in NRC inventions are issued pursuant to the authority of the Commission under 42 U.S.C. 2186 (sec. 156 of the Act), 42 U.S.C. 2201g (sec. 161g. of the Act), and

according to regulations issued by the Administrator of General Services pursuant to the Memorandum and Statement of Government Patent Policy issued by President Nixon on August 23, 1971 (36 FR 16887).

§ 81.11 Policy.

(a) The inventions covered by the U.S. patents and patent applications vested in the Government of the United States of America, as represented by or in the custody of the Commission, normally will best serve the public interest when they are developed to the point of practical application and made available to the public in the shortest time possible.

(b) The Commission generally prefers to make these inventions available to all interested parties through the granting of nonexclusive licenses. However, the Commission recognizes that to obtain commercial utilization of an invention, it may be necessary to grant an exclusive license for a limited period of time as an incentive for the investment of risk capital to achieve practical application of an invention.

(c) Whenever the Commission deems it appropriate to grant an exclusive license, the license will be negotiated on terms and conditions most favorable to the interests of the public and the Government. In considering the accord of such a license, due weight will be given to assisting small business and minority business enterprises, as well as economically depressed, low income and labor surplus areas within the United States.

(d) All licenses shall be by express written instruments. No license shall be granted or implied in an NRC invention except as provided for in these regulations or in patent rights articles under Commission procurement regulations, pursuant to the Act, or pursuant to any existing or future treaty or agreement between the United States and any foreign government or intergovernmental organization.

(e) No grant of a license under this subpart shall be construed to confer upon any licensee any immunity from the antitrust laws or from liability for patent misuse, and the acquisition and use of rights pursuant to this subpart shall not be immunized from the operation of State or Federal law by reason of the source of the grant.

(f) No grant of a license under this subpart shall be construed to confer any authorization under chapters 4, 5, 6, 7, 8, 10, or any other chapter or section of the Act (42 U.S.C., sec. 2011–2296) for which separate application for a license must be made in accordance with the Act or other Commission regulations.

§ 81.13 Publication of NRC inventions available for licensing.

(a) The Commission will have published periodically a list of the NRC inventions available for licensing under this subpart in the FEDERAL REGISTER, the U.S. Patent Office Official Gazette, and in one other publication which it is determined will best serve the public interest and, where advisable, in other publications.

(b) Interested persons may obtain copies of such lists by communicating with the Commission, Washington, DC 20555. Copies of U.S. patents may be obtained from the U.S. Patent Office. Copies of U.S. patent application specifications, or microfiche reproductions thereof, may be secured at reasonable cost from the National Technical Information Service (NTIS) or from the U.S. Patent Office with Commission approval.

[38 FR 7318, Mar. 20, 1973, as amended at 40 FR 8793, Mar. 3, 1975]

§ 81.20 Nonexclusive licenses.

(a) NRC inventions will normally be made available for the grant of nonexclusive licenses to responsible applicants who will practice the invention and make its benefits reasonably accessible to the public.

(1) The nonexclusive license will be revocable, at the option of the Commission, if the licensee does not comply with all the terms and conditions of the license agreement.

(2) The duration of the license shall be for a specified period and/or such additional period as may be provided for in the license agreement.

(3) The license shall require the licensee to bring the invention to the point of practical application within a period specified in the license agreement, or as the period may be extended

by the Commission, and then to continue to make the benefits of the invention reasonably accessible to the public.

(4) The license shall be granted for all of the fields of use of the invention, or only such fields of use as may be specified in the license agreement, and throughout the United States of America, its territories and possessions, Puerto Rico, and the District of Columbia or in any lesser geographic portion thereof as may be specified in the license agreement.

(5) The licensee shall be required to submit periodic reports on his efforts to bring the invention to a point of practical application and the extent to which he continues to make the benefits of the invention reasonably accessible to the public. Unless otherwise specified in the license, such periodic reports will be required annually prior to the anniversary date of the grant of the license. The reports shall contain information within the licensee's knowledge, or which the licensee may acquire under normal business practices, pertaining to the commercial use being made of the invention, and other information which the Commission may determine to be pertinent to the licensing activity of the Commission and specified in the license agreement.

(6) Normally a royalty shall not be charged U.S. citizens and U.S. corporations for nonexclusive licenses on NRC inventions.

(7) The license may extend to wholly-owned subsidiaries of the licensee but shall be nonassignable, or otherwise nontransferable, without approval of the Commission.

(8) The Commission may revoke the license (i) for failure of the licensee to bring the invention to the point of practical application or to continue to make the benefits of the invention reasonably accessible to the public, (ii) if the licensee defaults in making any periodic report required by the license, or (iii) if the licensee commits any breach of any covenant or agreement therein contained, or (iv) if the licensee willfully makes, or has made, a false statement of a material fact or omitted a material fact in the license application submitted pursuant to § 81.40(a) or in any report required by the license agreement.

(9) The Commission may restrict the licensee to the particular fields of use and/or geographical areas in which the licensee has brought the invention to the point of practical application and continue to make the benefits of the invention reasonably accessible to the public.

(10) Before revoking or restricting any license granted pursuant to this subpart, the Commission shall mail to the licensee and any sublicensee of record, at the last address filed with the Commission, a written notice of the Commission's intention to revoke or restrict the license, and the licensee and any sublicensee shall be allowed thirty (30) days after the mailing of such notice, or within such period as may be granted by the Commission, to remedy any breach of any covenant or agreement as referred to in paragraph (a)(8)(iii) of this section, or to show cause why the license should not be revoked or restricted.

(11) Subject to the rights reserved to the Government in this section, the licensee shall be granted the nonexclusive rights to make, use, and/or sell the invention in accordance with the terms and conditions specified in the license agreement.

(12) The license may be subject to such other terms and conditions as the Commission may deem in the public interest.

§ 81.30 Limited exclusive licenses.

(a) An NRC invention may be made available for the grant of a limited exclusive license provided that:

(1) The invention has been published as available for licensing pursuant to § 81.13 for a period of at least six (6) months.

(2) The Commission has determined that (i) the invention may be brought to the point of practical application in certain fields of use or in certain geographical locations by exclusive licensing, (ii) the desired practical application has not been achieved under any nonexclusive license granted on the invention, and (iii) the desired practical application is not likely to be achieved expeditiously in the public interest

under a nonexclusive license or as a result of further Government-funded research or development.

(3) Notice of the selection of a prospective licensee to be granted a limited exclusive license of a specified duration and scope shall have been transmitted to the Attorney General of the United States and shall have been published for at least sixty (60) days in the FEDERAL REGISTER with a statement advising of the rights of license applicants or third parties to apply for nonexclusive licenses or bring information to the attention of the Commission under the next paragraph.

(4) After expiration of the period in paragraph (a)(3) of this section, the Commission has determined (i) that no applicant for a nonexclusive license has brought or will bring the invention to the point of practical application as specified in the prospective exclusive license within a reasonable period under a nonexclusive license, and (ii) that the granting of the license would be in the public interest and not be inconsistent with the Act after consideration of all the facts and any written evidence and argument which third parties may present to the Commission within sixty (60) days of the publication of the notices of the selection of the licensee under paragraph (a)(3) of this section.

(5) The Commission shall record and make available for public inspection, upon request, all decisions and the basis thereof under this section.

§81.31 Selection of an exclusive licensee.

An exclusive licensee will be selected by the Commission on bases consistent with the policy set forth in §81.11 of this subpart in accordance with the procedures herein, based upon the information supplied to the Commission in a license application under §81.40. Consideration will be given to: (a) The capabilities of the applicant to further the technical and market development of the invention to bring the same to the point of practical application, (b) the applicant's plan to undertake development of the invention, (c) the projected impact on competition, (d) the benefit to the Government and the public, as well as (e) assistance to small business and minority business enterprises and economically depressed, low income and labor surplus areas, and (f) whether the applicant is a U.S. citizen or corporation.

§81.32 Terms of exclusive license grant.

(a) NRC inventions may be made available for the grant of limited exclusive licenses to responsible applicants who will bring the invention to the point of practical application and make its benefits reasonably accessible to the public.

(1) The license may be granted for all or less than all fields of use of the invention, and throughout the United States of America, its territories and possessions, Puerto Rico, and the District of Columbia, or any lesser geographical portion thereof.

(2) The duration of the license will be negotiated and shall include (i) a period of exclusivity specified in the license, which shall be related to the period necessary to provide a reasonable incentive for the licensee to invest the necessary risk capital to bring the invention to the point of practical application and which shall not exceed 5 years or be extended unless the Commission determines on the basis of a written submission supported by a factual showing that a longer period is reasonably necessary to permit the licensee to enter the market and recoup his investment in bringing the invention to the point of practical application; and (ii) a terminal portion, sufficient to make the invention reasonably available for the granting of nonexclusive licenses under §81.20, during which the licensee may have a nonexclusive license if the licensee continues to make the invention reasonably accessible to the public.

(3) The license shall require the licensee to bring the invention to the point of practical application within a period specified in the license agreement, or, subject to the approval of the Commission, within a longer period, and then to continue to make the benefits of the invention reasonably accessible to the public.

(4) The license shall require the licensee to expand a specified minimum sum of money and/or to take other

specified action, within indicated periods as specified in the license, in an effort to bring the invention to the point of practical application. Reasonable royalties shall be charged by the Commission, as specified in the license agreement, unless the Commission determines that it would not be in the public interest to charge royalties.

(5) The license shall be subject to an irrevocable, royalty-free right of the Government of the United States to practice and have practiced the invention by or on behalf of the Government of the United States and on behalf of any foreign Government or intergovernmental organization pursuant to any existing or future treaty or agreement with the United States.

(6) The license shall reserve to the Commission the right to require the licensee to grant sublicenses to responsible applicants to practice the invention on terms that are reasonable under the circumstances, (i) to the extent that the invention is required for public use by governmental regulations, or (ii) as may be necessary to fulfill health or safety needs, or (iii) if the invention is useful in the production or utilization of special nuclear material or atomic energy and the licensing of such invention is of importance to effectuate the policies and purposes of the Act, (iv) for other public purposes as stipulated in the license agreement. In the event that the licensee and the Commission cannot agree upon reasonable terms for such sublicenses, the terms, including a reasonable royalty, may be fixed pursuant to the procedure set forth in section 157(c) of the Act.

(7) Subject to the right reserved to the Government in paragraphs (a) (5) and (6) of this section, the licensee shall be granted the exclusive right to make, use, and/or sell the invention in accordance with the terms and conditions specified in the license agreement.

(8) The license may extend to wholly owned subsidiaries of the licensee but shall be nonassignable and otherwise nontransferable without approval of the Commission, except assignment may be made, upon notice to the Commission, to successors of that part of the licensee's business to which the invention pertains.

(9) An exclusive licensee may grant sublicenses under his license only with the approval of the Commission. Any sublicense or assignment granted by an exclusive licensee shall be subject to the terms and conditions of the exclusive license, including the rights retained by the Government thereunder, and a copy of each such sublicense or assignment shall be furnished to the Commission.

(10) The license shall require the licensee to submit periodic reports on his efforts to achieve practical application of the invention and the extent to which he continues to make the benefits of the invention reasonably accessible to the public. Unless otherwise specified in the license, such reports will be required annually on the anniversary date of the grant of the license. The report shall contain information within the licensee's knowledge, or which the licensee may acquire under normal business practices, pertaining to the commercial use being made of the invention, and other information which the Commission may determine to be pertinent to the licensing activity of the Commission as is specified in the license agreement.

(11) The Commission may modify or revoke the license (i) for failure of the licensee to bring the invention to the point of practical application within the period specified in the license agreement or to continue to make the benefits of the invention reasonably accessible to the public; (ii) if the licensee fails to expend the minimum sum of money or to take any other action specified in the license agreement within the periods specified in the license agreement in an effort to bring the invention to the point of practical application; (iii) if the licensee defaults in making any payments or periodic reports required by the license; or (iv) if the licensee commits any breach of any covenant or agreement therein contained; or (v) if the licensee willfully makes, or has made, a false statement of a material fact or willfully omitted a material fact in the license application submitted pursuant to § 81.40 or in any report required by the license agreement.

(12) Before modifying or revoking any license granted pursuant to this subpart for any cause, the Commission shall mail to the licensee and any sublicensee of record at the last address filed with the Commission a written notice of the Commission's intention to modify or revoke the license, and the licensee and any sublicensee shall be allowed thirty (30) days after the mailing of such notice, or within such period as may be granted by the Commission, to remedy any breach of any covenant or agreement referred to in paragraph (a)(11)(iv) of this section or to show cause why the license should not be modified or revoked.

(13) An exclusive licensee shall be granted the right to sue at his own expense any party who infringes the rights set forth in his license and covered by the licensed patent. The licensee may join the Government of the United States, upon consent of the Attorney General, as a party complainant in such suit, but without expense to the Government and the licensee shall pay costs and any final judgment or decree that may be rendered against the Government in such suit. The Government shall have an absolute right to intervene in any such suit at its own expense. The licensee shall be obligated to furnish promptly to the Government, upon request, copies of all pleadings and other papers filed in any such suit and of evidence adduced in proceedings relating to the licensed patent, including, but not limited to, negotiations or settlements and agreements settling claims by a licensee based on the licensed patent, and all other books, documents, papers, and records pertaining to such suit. If, as a result of any such litigation, the patent shall be declared invalid, the licensee shall have the right to surrender his license and be relieved from any further obligation thereunder.

(14) A licensee may surrender his license at any time prior to termination of the license upon notice thereof to the Commission, and upon approval of the Commission, but the licensee shall not be relieved of the obligations thereunder without specific approval of the Commission.

(15) The license may be subject to such other terms and conditions as the Commission may deem in the public interest.

§81.35 Notices to public of exclusive licenses.

The Commission will have published in the FEDERAL REGISTER notices of the granting, revocation, or modification in duration and/or scope, of limited exclusive licenses under these regulations. Such notices shall identify the invention and shall include, directly, or by reference to previous notice(s) in the FEDERAL REGISTER pursuant to §81.13 or §81.30(a)(3) the following:

(a) Identification of the licensee.

(b) Duration and scope of the exclusive license.

(c) That such a license is being granted or revoked, or the nature of the modification of the license.

(d) The effective date of the grant, modification, or revocation.

§81.40 Contents of a license application.

(a) *Nonexclusive license application*. An application for a nonexclusive license under an NRC invention should be accompanied by a fee of ten dollars ($10) for processing the application and must include the following information:

(1) Identification of the invention for which the license is desired, including the patent application serial number or the patent number, title, and date, if known, and any other identification of the invention;

(2) Name and address of the person, company, or organization applying for a license and the citizenship or State of incorporation thereof;

(3) Name and address of a representative of applicant to whom correspondence should be sent and any notices served;

(4) Nature and type of applicant's business;

(5) Identification of the source of applicant's information concerning the availability of a license on the invention;

(6) Purpose for which the license is desired, and a brief description of applicant's plan to achieve that purpose;

(7) A statement of the field and the field(s) of use in which applicant intends to practice the invention; and

(8) A statement of the geographical area(s) in which the applicant will practice the invention.

(b) *Exclusive license application*. An application for a limited exclusive license should include, in addition to the information indicated above for a nonexclusive license application, the following information:

(1) Applicant's status, if any, in any one or more of the following categories:

(i) Small business firm;

(ii) Minority business enterprise;

(iii) Location in a surplus labor area;

(iv) Location in a low income area; and

(v) Location in an economically depressed area.

(2) A statement describing the time, expenditure, and other acts which the applicant considers necessary to bring the invention to a point of practical application, and the applicant's offer to invest that time and sum, and to perform such acts, if the license is granted.

(3) A statement of applicant's capability to undertake the development and/or marketing required to bring the invention to the point of practical application.

(4) A statement that contains applicant's best knowledge of the extent to which the invention is being practiced by private industry and the Government; and

(5) Any other facts which the applicant believes to show it to be in the public interest for the Commission to grant an exclusive license rather than a nonexclusive license and that such exclusive license should be granted to the applicant.

§ 81.50 Additional licenses.

Subject to any outstanding licenses, nothing in this subpart shall preclude the Commission from granting additional nonexclusive and limited exclusive licenses for inventions covered by this subpart when the Commission determines that to do so would provide for an equitable exchange of patent rights. The following exemplify circumstances wherein such licenses may be granted:

(a) In consideration of the settlement of interferences;

(b) In consideration of a release of any claims;

(c) In exchange for or as part of the consideration for a license under adversely held patent(s); or

(d) In consideration for the settlement or resolution of any proceeding under the Act or other statute.

§ 81.51 Appeals.

An applicant for a license, a licensee, or a third party who has participated under § 81.30(a)(3) shall have the right to appeal in accordance with the appeal procedures of this subpart any decision of the Commission concerning the grant, denial, interpretation, modification, or revocation of a license under this subpart, by filing a notice of appeal with the Commission within thirty (30) days from the date of the mailing of a notice by the Commission of the decision or, if no such notice to the person desiring to appeal, then thirty (30) days from publication in the FEDERAL REGISTER of the facts which show such a decision. The notice of appeal shall specify the portion of the decision from which the appeal is taken, and the reasons why the decision is erroneous. A statement of fact and argument in the form of a brief in support of the appeal may be submitted with the notice of appeal or, if the appellant prefers, may be filed with the Commission within fifteen (15) days after the filing of the notice of appeal. If a statement of fact and argument in the form of a brief in support of the appeal is not submitted with the notice, the appellant shall state in the notice whether such a statement of fact and argument in the form of a brief in support of the appeal will be filed.

§ 81.52 Appeals Board.

(a) *NRC Invention Licensing Appeal Board*. Upon notice of an appeal in accordance with § 81.51, the Executive Director for Operations of the Nuclear Regulatory Commission will designate within thirty (30) days an Invention Licensing Appeal Board (hereinafter, Board) to decide such an appeal.

(b) *Composition of the Board*. The Invention Licensing Appeal Board shall consist of three members having equal voting power, one of whom will be designated as Chairman.

(c) *Notice of designation of the Board.* The Executive Director for Operations of the Nuclear Regulatory Commission will advise the appellant of the designation of the Board, its composition, and Chairman.

[40 FR 8793, Mar. 3, 1975]

§ 81.53 Review by the Board.

(a) The Board shall determine the propriety of any decision concerning the grant, denial, interpretation, modification, or revocation of a license according to the policy and criteria of these regulations, including § 81.11, on the record and evidence submitted by an appellant and the Commission to the Board.

(b) A hearing may be requested by the Commission or an appellant within fifteen (15) days after the notice set forth under § 81.52(c). An appellant and the Commission shall be given a minimum of fifteen (15) days' notice of the time and place of a hearing. The Commission and the appellant shall have an opportunity to make oral arguments before the Board.

(c) The Board shall make findings of fact and reach a conclusion with respect to the propriety of the decision of the Commission, which conclusion shall constitute the final action of the Commission.

PART 95—FACILITY SECURITY CLEARANCE AND SAFEGUARDING OF NATIONAL SECURITY INFORMATION AND RESTRICTED DATA

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CONTROL OF INFORMATION

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95.55 Continued applicability of the regulations in this part.
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VIOLATIONS

95.61 Violations.
95.63 Criminal penalties.

AUTHORITY: Atomic Energy Act of 1954, secs. 145, 161, 223, 234 (42 U.S.C. 2165, 2201, 2273, 2282); Energy Reorganization Act of 1974, sec. 201 (42 U.S.C. 5841); 44 U.S.C. 3504 note; E.O. 10865, as amended, 25 FR 1583, 3 CFR, 1959–1963 Comp., p. 398; E.O. 12829, 58 FR 3479, 3 CFR, 1993 Comp., p. 570; E.O. 12968, 60 FR 40245, 3 CFR, 1995 Comp., p. 391; E.O. 13526, 75 FR 707, 3 CFR, 2009 Comp., p. 298.

SOURCE: 45 FR 14483, Mar. 5, 1980, unless otherwise noted.

GENERAL PROVISIONS

§ 95.1 Purpose.

The regulations in this part establish procedures for obtaining facility security clearance and for safeguarding Secret and Confidential National Security Information and Restricted Data received or developed in conjunction with activities licensed, certified or regulated by the Commission. This part does not apply to Top Secret information because Top Secret information may not be forwarded to licensees, certificate holders, or others within the scope of an NRC license or certificate.

[62 FR 17690, Apr. 11, 1997, as amended at 68 FR 41222, July 11, 2003]

§ 95.3 Scope.

The regulations in this part apply to licensees, certificate holders and others who may require access to classified National Security Information and/or Restricted Data and/or Formerly Restricted Data (FRD) that is used, processed, stored, reproduced, transmitted, transported, or handled in connection with a license or certificate or an application for a license or certificate, or other activities as the Commission may determine.

[70 FR 32227, June 2, 2005]

§ 95.5 Definitions.

Access authorization means an administrative determination that an individual (including a consultant) who is employed by or an applicant for employment with the NRC, NRC contractors, agents, licensees and certificate holders, or other persons designated by the Executive Director for Operations, is eligible for a security clearance for access to classified information.

Act means the Atomic Energy Act of 1954 (68 Stat. 919), as amended.

Classified mail address means a mail address established for each facility approved by the NRC, to which all classified information for the facility is to be sent.

Classified matter means documents or material containing classified information.

Classified National Security Information means information that has been determined under E.O. 13526, as amended, or any predecessor or successor order to require protection against unauthorized disclosure and that is so designated.

Classified shipping address means an address established for a facility, approved by the NRC to which classified material that cannot be transmitted as normal mail is to be sent.

Closed area means an area that meets the requirements of the CSA, for the purpose of safeguarding classified material that, because of its size, nature, or operational necessity, cannot be adequately protected by the normal safeguards or stored during nonworking hours in approved containers.

Cognizant Security Agency (CSA) means agencies of the Executive Branch that have been authorized by E.O. 12829 to establish an industrial security program for the purpose of safeguarding classified information under the jurisdiction of those agencies when disclosed or released or released to U.S. industry. These agencies are the Department of Defense, the department of Energy, the Central Intelligence Agency, and the Nuclear Regulatory Commission. A facility has a CSA which exercises primary authority for the protection of classified information at the facility. The CSA for the facility provides security representation for other government agencies with security interests at the facility. The Secretary of Defense has been as Executive Agent for the National Industrial Security Program.

Combination lock means a three position, manipulation resistant, dial type lock bearing an Underwriters' Laboratories, Inc. certification that it is a Group 1 or Group IR unit.

Commission means the Nuclear Regulatory Commission or its duly authorized representatives.

Facility (Security) Clearance (FCL) means an administrative determination that, from a security viewpoint, a facility is eligible for access to classified information of a certain category (and all lower categories).

Foreign ownership, control, or influence (FOCI) means a foreign interest that has the power, direct or indirect, whether or not exercised, and whether

or not exercisable through the ownership of a U.S. company's securities, by contractual arrangements or other means, to direct or decide matters affecting the management or operations of that company in a manner which may result in unauthorized access to classified information or may affect adversely the performance of classified contracts.

Infraction means any knowing, willful, or negligent action contrary to the requirements of E.O. 13526, as amended, or any predecessor or successor order, or its implementing directives that does not comprise a ''violation,'' as defined in this section.

Intrusion alarm means a tamper-indicating electrical, electro-mechanical, electro-optical, electronic or similar device which will detect unauthorized intrusion by an individual into a building, protected area, security area, vital area, or material access area, and alert guards or watchmen by means of actuated visible and audible signals.

License means a license issued under 10 CFR parts 50, 52, 54, 60, 63, 70, or 72.

Material means chemical substance without regard to form; fabricated or processed item; or assembly, machinery or equipment.

Matter means documents or material.

National security means the national defense or foreign relations of the United States.

Need-to-know means a determination made by an authorized holder of classified information that a prospective recipient requires access to specific classified information in order to perform or assist in a lawful and authorized governmental function under the cognizance of the Commission.

NRC ''L'' access authorization means an access authorization granted by the Commission normally based on a national agency check with law and credit investigation (NACLC) or an access national agency check and inquiries investigation (ANACI)) conducted by the Defense Counterintelligence and Security Agency.

NRC ''Q'' access authorization means an access authorization granted by the Commission normally based on a single scope background investigation conducted by the Defense Counterintelligence and Security Agency, the Federal Bureau of Investigation, or other U.S. Government agency that conducts personnel security investigations.

Person means (1) any individual, corporation, partnership, firm, association, trust, estate, public or private institution, group, government agency other than the Commission or the Department of Energy (DOE), except that the DOE shall be considered a person to the extent that its facilities are subject to the licensing and related regulatory authority of the Commission pursuant to section 202 of the Energy Reorganization Act of 1974 and sections 104, 105 and 202 of the Uranium Mill Tailings Radiation Control Act of 1978, any State or any political subdivision of, or any political entity within a State, any foreign government or nation or any political subdivision of any such government or nation, or other entity; and (2) any legal successor, representative, agent or agency of the foregoing.

Protective personnel means guards or watchmen as defined in 10 CFR part 73 or other persons designated responsibility for the protection of classified matter.

Restricted area means a controlled access area established to safeguard classified material, that, because of its size or nature, cannot be adequately protected during working hours by the usual safeguards, but that is capable of being stored during non-working hours in an approved repository or secured by other methods approved by the CSA.

Restricted data means all data concerning design, manufacture or utilization of atomic weapons, the production of special nuclear material, or the use of special nuclear material in the production of energy, but shall not include data declassified or removed from the Restricted Data category pursuant to section 142 of the Act.

Security area means a physically defined space containing classified matter and subject to physical protection and personnel access controls.

Security container includes any of the following repositories:

(1) A security filing cabinet—one that bears a Test Certification Label on the side of the locking drawer, inside wall adjacent to the locking drawer, or interior door plate, or is marked,

''General Services Administration Approved Security Container'' on the exterior of the top drawer or door.

(2) A safe—burglar-resistive cabinet or chest which bears a label of the Underwriters' Laboratories, Inc., certifying the unit to be a TL–15, TL–30, or TRTL–30, and has a body fabricated of not less than 1 inch of steel and a door fabricated of not less than 1½ inches of steel exclusive of the combination lock and bolt work; or bears a Test Certification Label on the inside of the door, or is marked ''General Services Administration Approved Security Container'' and has a body of steel at least ½ inch thick, and a combination locked steel door at least 1 inch thick, exclusive of bolt work and locking devices; and an automatic unit locking mechanism.

(3) A vault—a windowless enclosure constructed with walls, floor, roof, and door(s) that will delay penetration sufficient to enable the arrival of emergency response forces capable of preventing theft, diversion, damage, or compromise of classified information or matter, when delay time is assessed in conjunction with detection and communication subsystems of the physical protection system.

(4) A vault-type room—a room that has a combination lock door and is protected by an intrusion alarm system that alarms upon the unauthorized penetration of a person anywhere into the room.

(5) Other repositories that would provide comparable physical protection in the judgment of the Division of Facilities and Security.

Security facility—any facility which has been approved by NRC for using, processing, storing, reproducing, transmitting or handling classified matter.

Security reviews means aperiodic security reviews of cleared facilities conducted to ensure that safeguards employed by licensees and others are adequate for the protection of classified information.

Supplemental protection means additional security procedures such as intrusion detection systems, security guards, and access control systems.

Violation means any knowing, willful, or negligent action that could reasonably be expected to result in an unauthorized disclosure of classified information or any knowing, willful, or negligent action to classify or continue the classification of information contrary to the requirements of E.O. 12958, as amended, or its implementing directives.

[45 FR 14483, Mar. 5, 1980, as amended at 46 FR 58284, Dec. 1, 1981; 47 FR 38683, Sept. 2, 1982; 48 FR 24320, June 1, 1983; 50 FR 36984, Sept. 11, 1985; 55 FR 11575, Mar. 29, 1990; 55 FR 14379, Apr. 17, 1990; 59 FR 48974, Sept. 23, 1994; 62 FR 17691, Apr. 11, 1997; 64 FR 15649, Apr. 1, 1999; 70 FR 32227, June 2, 2005; 72 FR 49562, Aug. 28, 2007; 75 FR 73945, Nov. 30, 2010; 86 FR 43403, Aug. 9, 2021]

EFFECTIVE DATE NOTE: At 86 FR 73638, Dec. 28, 2021, § 95.5 was amended by revising the definitions for *NRC ''L'' access authorization* and *NRC ''Q'' access authorization* to read as follows, effective Mar. 14, 2022. For the convenience of the user, the revised text is set forth as follows:

§ 95.5 Definitions.

* * * * *

NRC ''L'' access authorization means an access authorization granted by the Commission that is normally based on a Tier 3 (T3) investigation or a Tier 3 reinvestigation (T3R) conducted by the Defense Counterintelligence and Security Agency.

NRC ''Q'' access authorization means an access authorization granted by the Commission normally based on a Tier 5 (T5) investigation conducted by the Defense Counterintelligence and Security Agency, the Federal Bureau of Investigation, or other U.S. Government agency that conducts personnel security investigations.

* * * * *

§ 95.7 Interpretations.

Except as specifically authorized by the Commission in writing, no interpretation of the meaning of the regulations in this part by any officer or employee of the Commission other than a written interpretation by the General Counsel will be recognized to be binding upon the Commission.

§ 95.8 Information collection requirements: OMB approval.

(a) The Nuclear Regulatory Commission has submitted the information collection requirements contained in this part to the Office of Management

and Budget (OMB) for approval as required by the Paperwork Reduction Act (44 U.S.C. 3501 *et seq.*). The NRC may not conduct or sponsor, and a person is not required to respond to, a collection of information unless it displays a currently valid OMB control number. OMB has approved the information collection requirements contained in this part under control number 3150–0047.

(b) The approved information collection requirements contained in this part appear in §§95.11, 95.15, 95.17, 95.18, 95.21, 95.25, 95.33, 95.34, 95.36, 95.37, 95.39, 95.41, 95.43, 95.45, 95.47, 95.53, and 95.57.

[62 FR 52190, Oct. 6, 1997, as amended at 64 FR 15650, Apr. 1, 1999]

§95.9 Communications.

Except where otherwise specified, all communications and reports concerning the regulations in this part should be submitted as follows:

(a) By mail addressed to: ATTN: Document Control Desk, Director, Office of Nuclear Security and Incident Response, U.S Nuclear Regulatory Commission, Washington, DC 20555–0001;

(b) By hand delivery to the NRC's offices at 11555 Rockville Pike, Rockville, Maryland; or

(c) Where practicable, by electronic submission, for example, Electronic Information Exchange, or CD-ROM. Electronic submissions must be made in a manner that enables the NRC to receive, read, authenticate, distribute, and archive the submission, and process and retrieve it a single page at a time. Detailed guidance on making electronic submissions can be obtained by visiting the NRC's Web site at *http://www.nrc.gov/site-help/e-submittals.html;* by e-mail to *MSHD.Resource@nrc.gov;* or by writing the Office of the Chief Information Officer, U.S. Nuclear Regulatory Commission, Washington, DC 20555–0001. The guidance discusses, among other topics, the formats the NRC can accept, the use of electronic signatures, and the treatment of nonpublic information.

(d) Classified communications shall be transmitted in accordance with §95.39 of this chapter to the NRC Headquarters' classified mailing address listed in appendix A to part 73 of this chapter or delivered by hand in accordance with §95.39 of this chapter to the NRC Headquarters' street address listed in appendix A to part 73 of this chapter.

[68 FR 58823, Oct. 10, 2003, as amended at 74 FR 62685, Dec. 1, 2009; 83 FR 58723, Nov. 21, 2018]

§95.11 Specific exemptions.

The NRC may, upon application by any interested person or upon its own initiative, grant exemptions from the requirements of the regulations of this part, that are—

(a) Authorized by law, will not present an undue risk to the public health and safety, and are consistent with the common defense and security; or

(b) Coincidental with one or more of the following:

(1) An application of the regulation in the particular circumstances conflicts with other rules or requirements of the NRC;

(2) An application of the regulation in the particular circumstances would not serve the underlying purpose of the rule or is not necessary to achieve the underlying purpose of the rule;

(3) When compliance would result in undue hardship or other costs that are significantly in excess of those contemplated when the regulation was adopted, or that are significantly in excess of those incurred by others similarly situated;

(4) When the exemption would result in benefit to the common defense and security that compensates for any decrease in security that may result from the grant of the exemption;

(5) When the exemption would provide only temporary relief from the applicable regulation and the licensee or applicant has made good faith efforts to comply with the regulation;

(6) When there is any other material circumstance not considered when the regulation was adopted for which it would be in the public interest to grant an exemption. If such a condition is relied on exclusively for satisfying paragraph (b) of this section, the exemption may not be granted until the Executive Director for Operations has consulted with the Commission.

[64 FR 15650, Apr. 1, 1999]

§ 95.13 Maintenance of records.

(a) Each licensee, certificate holder or other person granted facility clearance under this part shall maintain records as prescribed within the part. These records are subject to review and inspection by CSA representatives during security reviews.

(b) Each record required by this part must be legible throughout the retention period specified by each Commission regulation. The record may be the original or a reproduced copy or a microform provided that the copy or microform is authenticated by authorized personnel and that the microform is capable of producing a clear copy throughout the required retention period. The record may also be stored in electronic media with the capability for producing legible, accurate, and complete records during the required retention period. Records such as letters, drawings, or specifications must include all pertinent information such as stamps, initials, and signatures. The licensee, certificate holder, or other person shall maintain adequate safeguards against tampering with and loss of records.

[53 FR 19263, May 27, 1988, as amended at 62 FR 17691, Apr. 11, 1997; 72 FR 49562, Aug. 28, 2007]

PHYSICAL SECURITY

§ 95.15 Approval for processing licensees and others for facility clearance.

(a) A licensee, certificate holder, or other person who has a need to use, process, store, reproduce, transmit, transport, or handle NRC classified information at any location in connection with Commission-related activities shall promptly request an NRC facility clearance. This specifically includes situations where a licensee, certificate holder, or other person needs a contractor or consultant to have access to NRC classified information. Also included are others who require access to classified information in connection with NRC regulated activities but do not require use, storage, or possession of classified information outside of NRC facilities. However, it is not necessary for a licensee, certificate holder, or other person to request an NRC facility clearance for access to another agency's classified information at that agency's facilities or to store that agency's classified information at their facility, provided no NRC classified information is involved and they meet the security requirements of the other agency. If NRC classified information is involved, the requirements of § 95.17 apply.

(b) The request must include the name of the facility, the location of the facility and an identification of any facility clearance issued by another government agency. If there is no existing facility clearance, the request must include a security Standard Practice Procedures Plan that outlines the facility's proposed security procedures and controls for the protection of classified information, a floor plan of the area in which the matter is to be used, processed, stored, reproduced, transmitted, transported or handled; and Foreign Ownership, Control or Influence information.

(c) NRC will promptly inform applicants of the acceptability of the request for further processing and will notify the licensee or other person of their decision in writing.

[45 FR 14483, Mar. 5, 1980, as amended at 48 FR 24321, June 1, 1983; 50 FR 36984, Sept. 11, 1985; 59 FR 48974, Sept. 23, 1994; 62 FR 17691, Apr. 11, 1997; 64 FR 15650, Apr. 1, 1999]

§ 95.17 Processing facility clearance.

(a) Following the receipt of an acceptable request for facility clearance, the NRC will either accept an existing facility clearance granted by a current CSA and authorize possession of license or certificate related classified information, or process the facility for a facility clearance. Processing will include—

(1) A determination based on review and approval of a Standard Practice Procedures Plan that granting of the Facility Clearance would not be inconsistent with the national interest, including a finding that the facility is not under foreign ownership, control, or influence to such a degree that a determination could not be made. An NRC finding of foreign ownership, control, or influence is based on factors concerning the foreign intelligence threat, risk of unauthorized technology

transfer, type and sensitivity of the information that requires protection, the extent of foreign influence, record of compliance with pertinent laws, and the nature of international security and information exchange agreements. The licensee, certificate holder, or other person must advise the NRC within 30 days of any significant events or changes that may affect its status concerning foreign ownership, control, or influence (e.g., changes in ownership; changes that affect the company's answers to original FOCI questions; indebtedness; and changes in the required form that identifies owners, officers, directors, and executive personnel).

(2) An acceptable security review conducted by the NRC;

(3) Submitting key management personnel for personnel clearances (PCLs); and

(4) Appointing a U.S. citizen employee as the facility security officer.

(b) An interim Facility Clearance may be granted by the CSA on a temporary basis pending completion of the full investigative requirements.

[62 FR 17692, Apr. 11, 1997, as amended at 64 FR 15650, Apr. 1, 1999]

§95.18 Key personnel.

The senior management official and the Facility Security Officer must always be cleared to a level commensurate with the Facility Clearance. Other key management officials, as determined by the CSA, must be granted an access authorization or be excluded from classified access. When formal exclusion action is required, the organization's board of directors or similar executive body shall affirm the following, as appropriate.

(a) Officers, directors, partners, regents, or trustees (designated by name) that are excluded may not require, may not have, and can be effectively excluded from access to all classified information disclosed to the organization. These individuals also may not occupy positions that would enable them to adversely affect the organization's policies or practices in the performance of activities involving classified information. This action will be made a matter of record by the organization's executive body. A copy of the resolution must be furnished to the CSA.

(b) Officers, directors, partners, regents, or trustees (designated by name) that are excluded may not require, may not have, and can be effectively denied access to higher-level classified information (specify which higher level(s)). These individuals may not occupy positions that would enable them to adversely affect the organization's policies or practices in the protection of classified information. This action will be made a matter of record by the organization's executive body. A copy of the resolution must be furnished to the CSA.

[62 FR 17692, Apr. 11, 1997]

§95.19 Changes to security practices and procedures.

(a) Except as specified in paragraph (b) of this section, each licensee, certificate holder, or other person shall obtain prior CSA approval for any proposed change to the name, location, security procedures and controls, or floor plan of the approved facility. A written description of the proposed change must be furnished to the CSA and the NRC Regional Administrator of the cognizant Regional Office listed in appendix A to part 73 of this chapter, and, if the NRC is not the CSA, also to the Director, Division of Security Operations, Office of Nuclear Security and Incident Response; the communications to NRC personnel should be by an appropriate method listed in §95.9. These substantive changes to the Standard Practice Procedures Plan that affect the security of the facility must be submitted to the NRC Division of Security Operations, or CSA, at least 30 days prior to the change so that they may be evaluated. The CSA shall promptly respond in writing to all such proposals. Some examples of substantive changes requiring prior CSA approval include—

(1) A change in the approved facility's classified mail address; or

(2) A temporary or permanent change in the location of the approved facility (e.g., moving or relocating NRC's classified interest from one room or building to another). Approved changes will be reflected in a revised Standard Practice Procedures Plan submission within

30 days of approval. Page changes rather than a complete rewrite of the plan may be submitted.

(b) A licensee, certificate holder, or other person may effect a minor, non-substantive change to an approved Standard Practice Procedures Plan for the safeguarding of classified information without receiving prior CSA approval. These minor changes that do not affect the security of the facility may be submitted to the addressees noted in paragraph (a) of this section within 30 days of the change. Page changes rather than a complete rewrite of the plan may be submitted. Some examples of minor, non-substantive changes to the Standard Practice Procedures Plan include—

(1) The designation/appointment of a new facility security officer; or

(2) A revision to a protective personnel patrol routine, provided the new routine continues to meet the minimum requirements of this part.

(c) A licensee, certificate holder, or other person must update its NRC facility clearance every five years either by submitting a complete Standard Practice Procedures Plan or a certification that the existing plan is fully current to the Division of Security Operations.

[64 FR 15650, Apr. 1, 1999, as amended at 68 FR 41222, July 11, 2003; 68 FR 58823, Oct. 10, 2003; 72 FR 49562, Aug. 28, 2007; 74 FR 62685, Dec. 1, 2009]

§ 95.20 Grant, denial or termination of facility clearance.

The Division of Security Operations shall provide notification in writing (or orally with written confirmation) to the licensee, certificate holder, or other person of the Commission's grant, acceptance of another agency's facility clearance, denial, or termination of facility clearance. This information must also be furnished to representatives of the NRC, NRC contractors, licensees, certificate holders, or other person, or other Federal agencies having a need to transmit classified information to the licensees or other person.

[72 FR 49562, Aug. 28, 2007, as amended at 74 FR 62685, Dec. 1, 2009]

§ 95.21 Withdrawal of requests for facility security clearance.

When a request for facility clearance is to be withdrawn or canceled, the requester shall notify the NRC Division of Security Operations in the most expeditious manner so that processing for this approval may be terminated. The notification must identify the full name of the individual requesting discontinuance, his or her position with the facility, and the full identification of the facility. The requestor shall confirm the telephone notification promptly in writing.

[64 FR 15651, Apr. 1, 1999, as amended at 68 FR 41222, July 11, 2003; 74 FR 62685, Dec. 1, 2009]

§ 95.23 Termination of facility clearance.

(a) Facility clearance will be terminated when—

(1) There is no longer a need to use, process, store, reproduce, transmit, transport or handle classified matter at the facility; or

(2) The Commission makes a determination that continued facility clearance is not in the interest of national security.

(b) When facility clearance is terminated, the licensee, certificate holder, or other person will be notified in writing of the determination and the procedures outlined in § 95.53 apply.

[62 FR 17692, Apr. 11, 1997, as amended at 72 FR 49562, Aug. 28, 2007]

§ 95.25 Protection of National Security Information and Restricted Data in storage.

(a) Secret matter, while unattended or not in actual use, must be stored in—

(1) A safe, steel file cabinet, or safe-type steel file container that has an automatic unit locking mechanism. All such receptacles will be accorded supplemental protection during non-working hours; or

(2) Any steel file cabinet that has four sides and a top and bottom (all permanently attached by welding, rivets, or peened bolts so the contents cannot be removed without leaving visible evidence of entry) and is secured by a rigid metal lock bar and an

approved key operated or combination padlock. The keepers of the rigid metal lock bar must be secured to the cabinet by welding, rivets, or bolts, so they cannot be removed and replaced without leaving evidence of the entry. The drawers of the container must be held securely so their contents cannot be removed without forcing open the drawer. This type of cabinet will be accorded supplemental protection during non-working hours.

(b) Confidential matter while unattended or not in use must be stored in the same manner as SECRET matter except that no supplemental protection is required.

(c) *Classified lock combinations.* (1) A minimum number of authorized persons may know the combinations to authorized storage containers. Security containers, vaults, cabinets, and other authorized storage containers must be kept locked when not under the direct supervision of an authorized person entrusted with the contents.

(2) Combinations must be changed by a person authorized access to the contents of the container, by the Facility Security Officer, or his or her designee.

(d) *Records of combinations.* If a record is made of a combination, the record must be marked with the highest classification of material authorized for storage in the container. Superseded combinations must be destroyed.

(e) *Selections of combinations.* Each combination must be randomly selected and require the use of at least three different numbers. In selecting combinations, multiples, simple arithmetical ascending or descending series, telephone numbers, social security numbers, car license numbers, and calendar dates such as birthdates and anniversaries, shall be avoided.

(f) Combinations will be changed only by persons authorized access to Secret or Confidential National Security Information and/or Restricted Data depending upon the matter authorized to be stored in the security container.

(g) *Posted information.* Containers may not bear external markings indicating the level of classified matter authorized for storage. A record of the names of persons having knowledge of the combination must be posted inside the container.

(h) *End of day security checks.* (1) Facilities that store classified matter shall establish a system of security checks at the close of each working day to ensure that all classified matter and security repositories have been appropriately secured.

(2) Facilities operating with multiple work shifts shall perform the security checks at the end of the last working shift in which classified matter had been removed from storage for use. The checks are not required during continuous 24-hour operations.

(i) *Unattended security container found opened.* If an unattended security container housing classified matter is found unlocked, the custodian or an alternate must be notified immediately. Also, the container must be secured by protective personnel. An effort must be made to determine if the contents were compromised not later than the next day.

(j) *Supervision of keys and padlocks.* Use of key-operated padlocks are subject to the following requirements:

(1) A key and lock custodian shall be appointed to ensure proper custody and handling of keys and locks used for protection of classified matter;

(2) A key and lock control register must be maintained to identify keys for each lock and their current location and custody;

(3) Keys and locks must be audited each month;

(4) Keys must be inventoried with each change of custody;

(5) Keys must not be removed from the premises;

(6) Keys and spare locks must be protected equivalent to the level of classified matter involved;

(7) Locks must be changed or rotated at least every 12 months, and must be replaced after loss or compromise of their operable keys; and

(8) Master keys may not be made.

[45 FR 14483, Mar. 5, 1980, as amended at 47 FR 9196, Mar. 4, 1982; 50 FR 36985, Sept. 11, 1985; 53 FR 19263, May 27, 1988; 59 FR 48975, Sept. 23, 1994; 62 FR 17693, Apr. 11, 1997; 64 FR 15651, Apr. 1, 1999]

§ 95.27 Protection while in use.

While in use, classified matter must be under the direct control of an authorized individual to preclude physical, audio, and visual access by persons who do not have the prescribed access authorization or other written CSA disclosure authorization (see § 95.36 for additional information concerning disclosure authorizations).

[64 FR 15651, Apr. 1, 1999]

§ 95.29 Establishment of Restricted or Closed areas.

(a) If, because of its nature, sensitivity or importance, classified matter cannot otherwise be effectively controlled in accordance with the provisions of §§ 95.25 and 95.27, a Restricted or Closed area must be established to protect this matter.

(b) The following measures apply to Restricted Areas:

(1) Restricted areas must be separated from adjacent areas by a physical barrier designed to prevent unauthorized access (physical, audio, and visual) into these areas.

(2) Controls must be established to prevent unauthorized access to and removal of classified matter.

(3) Access to classified matter must be limited to persons who possess appropriate access authorization or other written CSA disclosure authorization and who require access in the performance of their official duties or regulatory obligations.

(4) Persons without appropriate access authorization for the area visited must be escorted by an appropriate CSA access authorized person at all times while within Restricted or Closed Areas.

(5) Each individual authorized to enter a Restricted or Closed Area must be issued a distinctive form of identification (e.g., badge) when the number of employees assigned to the area exceeds thirty per shift.

(6) During nonworking hours, admittance must be controlled by protective personnel. Protective personnel shall conduct patrols during nonworking hours at least every 8 hours and more frequently if necessary to maintain a commensurate level of protection. Entrances must be continuously monitored by protective personnel or by an approved alarm system.

(c) Due to the size and nature of the classified material, or operational necessity, it may be necessary to construct Closed Areas for storage because GSA-approved containers or vaults are unsuitable or impractical. Closed Areas must be approved by the CSA. The following measures apply to Closed Areas:

(1) Access to Closed Areas must be controlled to preclude unauthorized access. This may be accomplished through the use of a cleared employee or by a CSA approved access control device or system.

(2) Access must be limited to authorized persons who have an appropriate security clearance and a need-to-know for the classified matter within the area. Persons without the appropriate level of clearance and/or need-to-know must be escorted at all times by an authorized person where inadvertent or unauthorized exposure to classified information cannot otherwise be effectively prevented.

(3) The Closed Area must be accorded supplemental protection during nonworking hours. During these hours, admittance to the area must be controlled by locked entrances and exits secured by either an approved built-in combination lock or an approved combination or key-operated padlock. However, doors secured from the inside with a panic bolt (for example, actuated by a panic bar), a dead bolt, a rigid wood or metal bar, or other means approved by the CSA, do not require additional locking devices.

(4) Open shelf or bin storage of classified matter in Closed Areas requires CSA approval. Only areas protected by an approved intrusion detection system will qualify for approval.

[62 FR 17693, Apr. 11, 1997, as amended at 64 FR 15652, Apr. 1, 1999]

§ 95.31 Protective personnel.

Whenever protective personnel are used to protect classified information they shall:

(a) Possess an ''L'' access authorization (or CSA equivalent) if the licensee, certificate holder, or other person possesses information classified Confidential National Security Information, Confidential Restricted Data

or Secret National Security Information.

(b) Possess a ''Q'' access authorization (or CSA equivalent) if the licensee, certificate holder, or other person possesses Secret Restricted Data related to nuclear weapons design, manufacturing and vulnerability information; and certain particularly sensitive Naval Nuclear Propulsion Program information (e.g., fuel manufacturing technology) and the protective personnel require access as part of their regular duties.

[72 FR 49562, Aug. 28, 2007]

§95.33 Security education.

All cleared employees must be provided with security training and briefings commensurate with their involvement with classified information. The facility official(s) responsible for the program shall determine the means and methods for providing security education and training. A licensee or other entity subject to part 95 may obtain defensive security, threat awareness, and other education and training information and material from their Cognizant Security Agency (CSA) or other appropriate sources.

(a) *Facility Security Officer training.* Licensees or other entities subject to part 95 are responsible for ensuring that the Facility Security Officer, and other personnel performing security duties, complete security training deemed appropriate by the CSA. Training requirements must be based on the facility's involvement with classified information and may include a Facility Security Officer Orientation Course and, for Facility Security Officers at facilities with safeguarding capability, a Facility Security Officer Program Management Course. Training, if required, should be completed within 1 year of appointment to the position of Facility Security Officer.

(b) *Government-provided briefings.* The CSA is responsible for providing initial security briefings to the Facility Security Officer, and for ensuring that other briefings required for special categories of information are provided.

(c) *Temporary help suppliers.* A temporary help supplier, or other contractor who employs cleared individuals solely for dispatch elsewhere, is responsible for ensuring that required briefings are provided to their cleared personnel. The temporary help supplier or the using licensee's, certificate holder's, or other person's facility may conduct these briefings.

(d) *Classified Information Nondisclosure Agreement (SF–312).* The SF–312 is an agreement between the United States and an individual who is cleared for access to classified information. An employee issued an initial access authorization must, in accordance with the requirements of §25.23 of this chapter, execute an SF–312 before being granted access to classified information. The Facility Security Officer shall forward the executed SF–312 to the CSA for retention. If the employee refuses to execute the SF–312, the licensee or other facility shall deny the employee access to classified information and submit a report to the CSA. The SF–312 must be signed and dated by the employee and witnessed. The employee's and witness' signatures must bear the same date.

(e) *Access to classified information.* Employees may have access to classified information only if:

(1) A favorable determination of eligibility for access has been made with respect to such employee by the CSA;

(2) The employee has signed an approved non-disclosure agreement; and

(3) The employee has a need-to-know the information.

(f) *Initial security briefings.* Initial training shall be provided to every employee who has met the standards for access to classified information in accordance with paragraph (e) of this section before the employee is granted access to classified information. The initial training shall include the following topics:

(1) A Threat Awareness Briefing;

(2) A Defensive Security Briefing;

(3) An overview of the security classification system;

(4) Employee reporting obligations and requirements; and

(5) Security procedures and duties applicable to the employee's job.

(g) *Refresher briefings.* The licensee or other entities subject to part 95 shall conduct refresher briefings for all cleared employees at least annually. As a minimum, the refresher briefing

must reinforce the information provided during the initial briefing and inform employees of appropriate changes in security regulations. This requirement may be satisfied by use of audio/video materials and/or by issuing written materials to cleared employees.

(h) Persons who apply derivative classification markings shall receive training specific to the proper application of the derivative classification principles of Executive Order 13526, *Classified National Security Information* (75 FR 707; January 5, 2010), before derivatively classifying information and at least once every 2 years thereafter.

(i) *Debriefings.* Licensee and other facilities shall debrief cleared employees at the time of termination of employment (discharge, resignation, or retirement); when an employee's access authorization is terminated, suspended, or revoked; and upon termination of the Facility Clearance.

(j) Records reflecting an individual's initial and refresher security orientations and security termination must be maintained for 3 years after termination of the individual's access authorization.

[78 FR 48041, Aug. 7, 2013]

§ 95.34 Control of visitors.

(a) *Uncleared visitors.* Licensees, certificate holders, or other persons subject to this part shall take measures to preclude access to classified information by uncleared visitors.

(b) *Foreign visitors.* Licensees, certificate holders, or other persons subject to this part shall take measures as may be necessary to preclude access to classified information by foreign visitors. The licensee, certificate holder, or other person shall retain records of visits for 5 years beyond the date of the visit.

[72 FR 49563, Aug. 28, 2007]

CONTROL OF INFORMATION

§ 95.35 Access to matter classified as National Security Information and Restricted Data.

(a) Except as the Commission may authorize, no licensee, certificate holder or other person subject to the regulations in this part may receive or may permit any other licensee, certificate holder, or other person to have access to matter revealing Secret or Confidential National Security Information or Restricted Data unless the individual has:

(1)(i) A ''Q'' access authorization which permits access to matter classified as Secret and Confidential Restricted Data or Secret and Confidential National Security Information which includes intelligence information, CRYPTO (*i.e.*, cryptographic information) or other classified communications security (COMSEC) information, or

(ii) An ''L'' access authorization which permits access to matter classified as Confidential Restricted Data and Secret and Confidential National Security Information other than that noted in paragraph (a)(1)(i) of this section except that access to certain Confidential COMSEC information is permitted as authorized by a National Communications Security Committee waiver dated February 14, 1984.

(2) An established ''need-to-know'' for the matter (See Definitions, § 95.5).

(3) NRC-approved storage facilities if classified documents or material are to be transmitted to the licensee, certificate holder, or other person.

(b) Matter classified as National Security Information or Restricted Data shall not be released by a licensee or other person subject to part 95 to any personnel other than properly access authorized Commission licensee employees, or other individuals authorized access by the Commission.

(c) Access to matter which is National Security Information at NRC-licensed facilities or NRC-certified facilities by authorized representatives of IAEA is permitted in accordance with § 95.36.

[59 FR 48975, Sept. 23, 1994, as amended at 72 FR 49563, Aug. 28, 2007]

§ 95.36 Access by representatives of the International Atomic Energy Agency or by participants in other international agreements.

(a) Based upon written disclosure authorization from the NRC Office of Nuclear Material Safety and Safeguards that an individual is an authorized representative of the International Atomic Energy Agency (IAEA) or other

international organization and that the individual is authorized to make visits under an established agreement with the United States Government, an applicant, licensee, certificate holder, or other person subject to this part shall permit the individual (upon presentation of the credentials specified in § 75.8(c) of this chapter and any other credentials identified in the disclosure authorization) to have access to matter classified as National Security Information that is relevant to the conduct of a visit or inspection. A disclosure authorization under this section does not authorize a licensee, certificate holder, or other person subject to this part to provide access to Restricted Data.

(b) For purposes of this section, classified National Security Information is relevant to the conduct of a visit or inspection if—

(1) In the case of a visit, this information is needed to verify information according to § 75.8 of this chapter; or

(2) In the case of an inspection, an inspector is entitled to have access to the information under § 75.8 of this chapter.

(c) In accordance with the specific disclosure authorization provided by the Division of Security Operations, licensees, certificate holders, or other persons subject to this part are authorized to release (*i.e.*, transfer possession of) copies of documents that contain classified National Security Information directly to IAEA inspectors and other representatives officially designated to request and receive classified National Security Information documents. These documents must be marked specifically for release to IAEA or other international organizations in accordance with instructions contained in the NRC's disclosure authorization letter. Licensees, certificate holders, and other persons subject to this part may also forward these documents through the NRC to the international organization's headquarters in accordance with the NRC disclosure authorization. Licensees, certificate holders, and other persons may not reproduce documents containing classified National Security Information except as provided in § 95.43.

(d) Records regarding these visits and inspections must be maintained for 5 years beyond the date of the visit or inspection. These records must specifically identify each document released to an authorized representative and indicate the date of the release. These records must also identify (in such detail as the Division of Security Operations, by letter, may require) the categories of documents that the authorized representative has had access and the date of this access. A licensee, certificate holder, or other person subject to this part shall also retain Division of Security Operations disclosure authorizations for 5 years beyond the date of any visit or inspection when access to classified information was permitted.

(e) Licensees, certificate holders, or other persons subject to this part shall take such measures as may be necessary to preclude access to classified matter by participants of other international agreements unless specifically provided for under the terms of a specific agreement.

[62 FR 17694, Apr. 11, 1997, as amended at 64 FR 15652, Apr. 1, 1999; 68 FR 41222, July 11, 2003; 72 FR 49563, Aug. 28, 2007; 73 FR 78614, Dec. 23, 2008; 74 FR 62686, Dec. 1, 2009]

§ 95.37 Classification and preparation of documents.

(a) *Classification.* Classified information generated or possessed by a licensee, certificate holder, or other person must be appropriately marked. Classified material which is not conducive to markings (e.g., equipment) may be exempt from this requirement. These exemptions are subject to the approval of the CSA on a case-by-case basis. If a person or facility generates or possesses information that is believed to be classified based on guidance provided by the NRC or by derivation from classified documents, but which no authorized classifier has determined to be classified, the information must be protected and marked with the appropriate classification markings pending review and signature of an NRC authorized classifier. This information shall be protected as classified information pending final determination.

(b) *Classification consistent with content.* Each document containing classified information shall be classified Secret or Confidential according to its content. NRC licensees, certificate holders, or other persons subject to the requirements of 10 CFR part 95 may not make original classification decisions.

(c) *Markings required on face of documents.* (1) For derivative classification of classified National Security Information:

(i) Derivative classifications of classified National Security Information must contain the identity of the source document or the classification guide, including the agency and office of origin, on the ''Derived From'' line and its classification date. If more than one source is cited, the ''Derived From'' line should indicate ''Multiple Sources.'' The derivative classifier shall maintain the identification of each source with the file or record copy of the derivatively classified document.

(ii) Declassification instructions. When marking derivatively classified documents, the ''DECLASSIFY ON'' line must carry forward the declassification instructions as reflected in the original document. If multiple sources are used, the instructions will carry forward the longest duration.

(iii) An example of the marking stamp is as follows:

Derived from _____
(Source/Date)
Reason: _____
Declassify On: _____
(Date/Event/Exemption)
Classifier: _____
(Name/Title/Number)

(2) For Restricted Data documents:

(i) *Identity of the classifier.* The identity of the classifier must be shown by completion of the ''Derivative Classifier'' line. The ''Derivative Classifier'' line must show the name of the person classifying the document and the basis for the classification. Dates for downgrading or declassification do not apply.

(ii) *Classification designation (e.g., Secret, Confidential) and Restricted Data.* NOTE: No ''Declassification'' instructions will be placed on documents containing Restricted Data.

(d) *Placement of markings.* The highest classification marking assigned to a document must be placed in a conspicuous fashion in letters at the top and bottom of the outside of the front covers and title pages, if any, and first and last pages on which text appears, on both bound and unbound documents, and on the outside of back covers of bound documents. The balance of the pages must be marked at the top and bottom with:

(1) The overall classification marking assigned to the document;

(2) The highest classification marking required by content of the page; or

(3) The marking UNCLASSIFIED if they have no classified content.

(e) *Additional markings.* (1) If the document contains any form of Restricted Data, it must bear the appropriate marking on the first page of text, on the front cover and title page, if any. For example: ''This document contains Restricted Data as defined in the Atomic Energy Act of 1954. Unauthorized disclosure subject to Administrative and Criminal Sanctions.''

(2) *Limitation on reproduction or dissemination.* If the originator or classifier determines that reproduction or further dissemination of a document should be restricted, the following additional wording may be placed on the face of the document:

Reproduction or Further Dissemination Requires Approval of _____

If any portion of this additional marking does not apply, it should be crossed out.

(f) *Portion markings.* In addition to the information required on the face of the document, each classified document is required, by marking or other means, to indicate clearly which portions are classified (e.g., paragraphs or pages) and which portions are not classified. The symbols (S) for Secret, (C) for Confidential, (U) for Unclassified, or (RD) for Restricted Data may be used immediately preceding or following the text to which it applies, except that the designation must follow titles or subjects. (Portion marking of paragraphs is not required for documents containing Restricted Data.) If this type of portion marking is not practicable, the document must contain a description sufficient to identify

the classified information and the unclassified information.

Example

Pages 1–3 Secret
Pages 4–19 Unclassified
Pages 20–26 Secret
Pages 27–32 Confidential

(g) *Transmittal document*. If a document transmitting classified information contains no classified information or the classification level of the transmittal document is not as high as the highest classification level of its enclosures, then the document must be marked at the top and bottom with a classification at least as high as its highest classified enclosure. The classification may be higher if the enclosures, when combined, warrant a higher classification than any individual enclosure. When the contents of the transmittal document warrants a lower classification than the highest classified enclosure(s) or combination of enclosures or requires no classification, a stamp or marking such as the following must also be used on the transmittal document:

UPON REMOVAL OF ATTACHMENTS THIS DOCUMENT IS:

(Classification level of transmittal document standing alone or the word ''UNCLASSIFIED'' if the transmittal document contains no classified information.)

(h) *Classification challenges*. Licensees, certificate holders, or other persons in authorized possession of classified National Security Information who in good faith believe that the information's classification status (*i.e.*, that the document), is classified at either too high a level for its content (overclassification) or too low for its content (underclassification) are expected to challenge its classification status. Licensees, certificate holders, or other persons who wish to challenge a classification status shall—

(1) Refer the document or information to the originator or to an authorized NRC classifier for review. The authorized classifier shall review the document and render a written classification decision to the holder of the information.

(2) In the event of a question regarding classification review, the holder of the information or the authorized classifier shall consult the NRC Division of Facilities and Security, Information Security Branch, for assistance.

(3) Licensees, certificate holders, or other persons who challenge classification decisions have the right to appeal the classification decision to the Interagency Security Classification Appeals Panel.

(4) Licensees, certificate holders, or other persons seeking to challenge the classification of information will not be the subject of retribution.

(i) *Files, folders or group of documents*. Files, folders, binders, or groups of physically connected documents must be marked at least as high as the highest classified document which they contain.

(j) *Drafts and working papers*. Drafts of documents and working papers which contain, or which are believed to contain, classified information must be marked as classified information.

(k) *Classification guidance*. Licensees, certificate holders, or other persons subject to this part shall classify and mark classified matter as National Security Information or Restricted Data, as appropriate, in accordance with classification guidance provided by the NRC as part of the facility clearance process.

[62 FR 17695, Apr. 11, 1997, as amended at 64 FR 15652, Apr. 1, 1999; 68 FR 41222, July 11, 2003; 72 FR 49563, Aug. 28, 2007]

§ 95.39 External transmission of documents and material.

(a) *Restrictions*. Documents and material containing classified information received or originated in connection with an NRC license, certificate, or standard design approval or standard design certification under part 52 of this chapter must be transmitted only to CSA approved security facilities.

(b) *Preparation of documents*. Documents containing classified information must be prepared in accordance with the following when transmitted outside an individual installation.

(1) The documents must be enclosed in two sealed opaque envelopes or wrappers.

(2) The inner envelope or wrapper must contain the addressee's classified

mail address and the name of the intended recipient. The appropriate classification must be placed on both sides of the envelope (top and bottom) and the additional markings, as appropriate, referred to in § 95.37(e) must be placed on the side bearing the address.

(3) The outer envelope or wrapper must contain the addressee's classified mailing address. The outer envelope or wrapper may not contain any classification, additional marking or other notation that indicate that the enclosed document contains classified information. The Classified Mailing Address shall be uniquely designated for the receipt of classified information. The classified shipping address for the receipt of material (e.g., equipment) should be different from the classified mailing address for the receipt of classified documents.

(4) A receipt that contains an unclassified description of the document, the document number, if any, date of the document, classification, the date of transfer, the recipient and the person transferring the document must be enclosed within the inner envelope containing the document and be signed by the recipient and returned to the sender whenever the custody of a Secret document is transferred. This receipt process is at the option of the sender for Confidential information.

(c) *Methods of transportation.* (1) Secret matter may be transported only by one of the following methods within and directly between the U.S., Puerto Rico, or a U.S. possession or trust territory:

(i) U.S. Postal Service Express Mail and U.S. Postal Service Registered Mail.

NOTE: The ''Waiver of Signature and Indemnity'' block on the U.S. Postal Service Express Mail Label 11–B may not be executed and the use of external (street side) express mail collection boxes is prohibited.

(ii) A cleared ''Commercial Carrier.''

(iii) A cleared commercial messenger service engaged in the intracity/local area delivery (same day delivery only) of classified material.

(iv) A commercial delivery company, approved by the CSA, that provides nationwide, overnight service with computer tracing and reporting features. These companies need not be security cleared.

(v) Other methods as directed, in writing, by the CSA.

(2) Confidential matter may be transported by one of the methods set forth in paragraph (c)(1) of this section, by U.S. express or certified mail. Express or certified mail may be used in transmission of Confidential documents to Puerto Rico or any United States territory or possession.

(d) *Telecommunication of classified information.* Classified information may not be telecommunicated unless the telecommunication system has been approved by the CSA. Licensees, certificate holders or other persons who may require a secure telecommunication system shall submit a telecommunication plan as part of their request for facility clearance, as outlined in § 95.15, or as an amendment to their existing Standard Practice Procedures Plan for the protection of classified information.

(e) *Security of classified information in transit.* Classified matter that, because of its nature, cannot be transported in accordance with § 95.39(c), may only be transported in accordance with procedures approved by the CSA. Procedures for transporting classified matter are based on a satisfactory transportation plan submitted as part of the licensee's, certificate holder, or other person's request for facility clearance or submitted as an amendment to its existing Standard Practice Procedures Plan.

[62 FR 17696, Apr. 11, 1997, as amended at 64 FR 15652, Apr. 1, 1999; 72 FR 49564, Aug. 28, 2007]

§ 95.41 External receipt and dispatch records.

Each licensee, certificate holder or other person possessing classified information shall maintain a record that reflects:

(a) The date of the material;

(b) The date of receipt or dispatch;

(c) The classification;

(d) An unclassified description of the material; and

(e) The identity of the sender from which the material was received or recipient to which the material was dispatched. receipt and dispatch records must be retained for 2 years.

[62 FR 17697, Apr. 11, 1997]

§95.43 Authority to reproduce.

(a) Each licensee, certificate holder, or other person possessing classified information shall establish a reproduction control system to ensure that reproduction of classified material is held to the minimum consistent with operational requirements. Classified reproduction must be accomplished by authorized employees knowledgeable of the procedures for classified reproduction. The use of technology that prevents, discourages, or detects the unauthorized reproduction of classified documents is encouraged.

(b) Unless restricted by the CSA, Secret and Confidential documents may be reproduced. Reproduced copies of classified documents are subject to the same protection as the original documents.

(c) All reproductions of classified material must be conspicuously marked with the same classification markings as the material being reproduced. Copies of classified material must be reviewed after the reproduction process to ensure that these markings are visible.

[62 FR 17697, Apr. 11, 1997, as amended at 72 FR 49564, Aug. 28, 2007]

§95.45 Changes in classification.

(a) Documents containing classified National Security Information must be downgraded or declassified as authorized by the NRC classification guides or as determined by the NRC. Requests for downgrading or declassifying any NRC classified information should be forwarded to the NRC's Division of Security Operations, Nuclear Security and Incident Response, using an appropriate method listed in §95.9. Requests for downgrading or declassifying of Restricted Data will be forwarded to the NRC Division of Security Operations for coordination with the Department of Energy.

(b) If a change of classification or declassification is approved, the previous classification marking must be canceled and the following statement, properly completed, must be placed on the first page of the document:

Classification canceled (or changed to)

_____
(Insert appropriate classification)
By authority of

_____
(Person authorizing change in classification)
By

_____
(Signature of person making change and date thereof)

(c) New markings reflecting the current classification status of the document will be applied in accordance with the requirements of §95.37.

(d) Any licensee, certificate holder, or other person making a change in classification or receiving notice of such a change shall forward notice of the change in classification to holders of all copies as shown on their records.

[62 FR 17697, Apr. 11, 1997, as amended at 64 FR 15653, Apr. 1, 1999; 68 FR 41222, July 11, 2003; 68 FR 58823, Oct. 10, 2003; 72 FR 49564, Aug. 28, 2007; 74 FR 62686, Dec. 1, 2009]

§95.47 Destruction of matter containing classified information.

Documents containing classified information may be destroyed by burning, pulping, or another method that ensures complete destruction of the information that they contain. The method of destruction must preclude recognition or reconstruction of the classified information. Any doubts on methods should be referred to the CSA.

[64 FR 15653, Apr. 1, 1999]

§95.49 Security of automatic data processing (ADP) systems.

Classified data or information may not be processed or produced on an ADP system unless the system and procedures to protect the classified data or information have been approved by the CSA. Approval of the ADP system and procedures is based on a satisfactory ADP security proposal submitted as part of the licensee's, certificate holder's, or other person's request for facility clearance outlined in §95.15 or submitted as an amendment to its existing Standard Practice Procedures

Plan for the protection of classified information.

[72 FR 49564, Aug. 28, 2007]

§ 95.51 Retrieval of classified matter following suspension or revocation of access authorization.

In any case where the access authorization of an individual is suspended or revoked in accordance with the procedures set forth in part 25 of this chapter, or other relevant CSA procedures, the licensee, certificate holder, or other person shall, upon due notice from the Commission of such suspension or revocation, retrieve all classified information possessed by the individual and take the action necessary to preclude that individual having further access to the information.

[72 FR 49564, Aug. 28, 2007]

§ 95.53 Termination of facility clearance.

(a) If the need to use, process, store, reproduce, transmit, transport, or handle classified matter no longer exists, the facility clearance will be terminated. The licensee, certificate holder, or other person for the facility may deliver all documents and matter containing classified information to the Commission, or to a person authorized to receive them, or must destroy all classified documents and matter. In either case, the licensee, certificate holder, or other person for the facility shall submit a certification of nonpossession of classified information to the NRC Division of Security Operations within 30 days of the termination of the facility clearance.

(b) In any instance where a facility clearance has been terminated based on a determination of the CSA that further possession of classified matter by the facility would not be in the interest of the national security, the licensee, certificate holder, or other person for the facility shall, upon notice from the CSA, dispose of classified documents in a manner specified by the CSA.

[72 FR 49564, Aug. 28, 2007, as amended at 74 FR 62686, Dec. 1, 2009]

§ 95.55 Continued applicability of the regulations in this part.

The suspension, revocation or other termination of access authorization or the termination of facility clearance does not relieve any person from compliance with the regulations in this part.

[62 FR 17698, Apr. 11, 1997]

§ 95.57 Reports.

Each licensee, certificate holder, or other person having a facility clearance shall report to the CSA and the Regional Administrator of the appropriate NRC Regional Office listed in 10 CFR part 73, appendix A:

(a) Any alleged or suspected violation of the Atomic Energy Act, Espionage Act, or other Federal statutes related to classified information (e.g., deliberate disclosure of classified information to persons not authorized to receive it, theft of classified information). Incidents such as this must be reported within 1 hour of the event followed by written confirmation within 30 days of the incident; and

(b) Any infractions, losses, compromises, or possible compromise of classified information or classified documents not falling within paragraph (a) of this section. Incidents such as these must be entered into a written log. A copy of the log must be provided to the NRC on a monthly basis. Details of security infractions including corrective action taken must be available to the CSA upon request.

(c) In addition, NRC requires records for all classification actions (documents classified, declassified, or downgraded) to be submitted to the NRC Division of Security Operations. These may be submitted either on an ''as completed'' basis or monthly. The information may be submitted either electronically by an on-line system (NRC prefers the use of a dial-in automated system connected to the Division of Security Operations) or by paper copy using NRC Form 790.

[64 FR 15653, Apr. 1, 1999, as amended at 68 FR 41222, July 11, 2003; 72 FR 49564, Aug. 28, 2007; 74 FR 62686, Dec. 1, 2009]

§ 95.59 Inspections.

The Commission shall make inspections and reviews of the premises, activities, records and procedures of any licensee, certificate holder, or other person subject to the regulations in this part as the Commission and CSA deem necessary to effect the purposes of the Act, E.O. 13526, as amended, or any predecessor or successor order, and/or NRC rules.

[75 FR 73945, Nov. 30, 2010]

VIOLATIONS

§ 95.61 Violations.

(a) The Commission may obtain an injunction or other court order to prevent a violation of the provisions of—

(1) The Atomic Energy Act of 1954, as amended;

(2) Title II of the Energy Reorganization Act of 1974, as amended; or

(3) A regulation or order issued pursuant to those Acts.

(b) The Commission may obtain a court order for the payment of a civil penalty imposed under section 234 of the Atomic Energy Act:

(1) For violations of—

(i) Sections 53, 57, 62, 63, 81, 82, 101, 103, 104, 107, or 109 of the Atomic Energy Act of 1954, as amended;

(ii) Section 206 of the Energy Reorganization Act;

(iii) Any rule, regulation, or order issued pursuant to the sections specified in paragraph (b)(1)(i) of this section;

(iv) Any term, condition, or limitation of any license issued under the sections specified in paragraph (b)(1)(i) of this section.

(2) For any violation for which a license may be revoked under Section 186 of the Atomic Energy Act of 1954, as amended.

[57 FR 55080, Nov. 24, 1992]

§ 95.63 Criminal penalties.

(a) Section 223 of the Atomic Energy Act of 1954, as amended, provides for criminal sanctions for willful violation of, attempted violation of, or conspiracy to violate, any regulation issued under sections 161b, 161i, or 161o of the Act. For purposes of section 223, all the regulations in part 95 are issued under one or more of sections 161b, 161i, or 161o, except for the sections listed in paragraph (b) of this section.

(b) The regulations in part 95 that are not issued under sections 161b, 161i, or 161o for the purposes of section 223 are as follows: §§ 95.1, 95.3, 95.5, 95.7, 95.8, 95.9, 95.11, 95.17, 95.19, 95.21, 95.23, 95.55, 95.59, 95.61, and 95.63.

[57 FR 55080, Nov. 24, 1992]

PART 100—REACTOR SITE CRITERIA

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APPENDIX A TO PART 100—SEISMIC AND GEOLOGIC SITING CRITERIA FOR NUCLEAR POWER PLANTS

AUTHORITY: Atomic Energy Act of 1954, secs. 103, 104, 161, 182 (42 U.S.C. 2133, 2134, 2201, 2232); Energy Reorganization Act of 1974, secs. 201, 202 (42 U.S.C. 5841, 5842); 44 U.S.C. 3504 note.

SOURCE: 27 FR 3509, Apr. 12, 1962, unless otherwise noted.

EDITORIAL NOTE: Nomenclature changes to part 100 appear at 81 FR 86910, Dec. 2, 2016.

§ 100.1 Purpose.

(a) The purpose of this part is to establish approval requirements for proposed sites for stationary power and testing reactors subject to part 50 or part 52 of this chapter.

(b) There exists a substantial base of knowledge regarding power reactor

siting, design, construction and operation. This base reflects that the primary factors that determine public health and safety are the reactor design, construction and operation.

(c) Siting factors and criteria are important in assuring that radiological doses from normal operation and postulated accidents will be acceptably low, that natural phenomena and potential man-made hazards will be appropriately accounted for in the design of the plant, that site characteristics are such that adequate security measures to protect the plant can be developed, and that physical characteristics unique to the proposed site that could pose a significant impediment to the development of emergency plans are identified.

(d) This approach incorporates the appropriate standards and criteria for approval of stationary power and testing reactor sites. The Commission intends to carry out a traditional defense-in-depth approach with regard to reactor siting to ensure public safety. Siting away from densely populated centers has been and will continue to be an important factor in evaluating applications for site approval.

[61 FR 65175, Dec. 11, 1996]

§ 100.2 Scope.

The siting requirements contained in this part apply to applications for site approval for the purpose of constructing and operating stationary power and testing reactors pursuant to the provisions of part 50 or part 52 of this chapter.

[61 FR 65175, Dec. 11, 1996]

§ 100.3 Definitions.

As used in this part:

Combined license means a combined construction permit and operating license with conditions for a nuclear power facility issued pursuant to subpart C of part 52 of this chapter.

Early Site Permit means a Commission approval, issued pursuant to subpart A of part 52 of this chapter, for a site or sites for one or more nuclear power facilities.

Exclusion area means that area surrounding the reactor, in which the reactor licensee has the authority to determine all activities including exclusion or removal of personnel and property from the area. This area may be traversed by a highway, railroad, or waterway, provided these are not so close to the facility as to interfere with normal operations of the facility and provided appropriate and effective arrangements are made to control traffic on the highway, railroad, or waterway, in case of emergency, to protect the public health and safety. Residence within the exclusion area shall normally be prohibited. In any event, residents shall be subject to ready removal in case of necessity. Activities unrelated to operation of the reactor may be permitted in an exclusion area under appropriate limitations, provided that no significant hazards to the public health and safety will result.

Low population zone means the area immediately surrounding the exclusion area which contains residents, the total number and density of which are such that there is a reasonable probability that appropriate protective measures could be taken in their behalf in the event of a serious accident. These guides do not specify a permissible population density or total population within this zone because the situation may vary from case to case. Whether a specific number of people can, for example, be evacuated from a specific area, or instructed to take shelter, on a timely basis will depend on many factors such as location, number and size of highways, scope and extent of advance planning, and actual distribution of residents within the area.

Population center distance means the distance from the reactor to the nearest boundary of a densely populated center containing more than about 25,000 residents.

Power reactor means a nuclear reactor of a type described in § 50.21(b) or § 50.22 of this chapter designed to produce electrical or heat energy.

Response spectrum is a plot of the maximum responses (acceleration, velocity, or displacement) of idealized single-degree-of-freedom oscillators as a function of the natural frequencies of the oscillators for a given damping

value. The response spectrum is calculated for a specified vibratory motion input at the oscillators' supports.

Safe Shutdown Earthquake Ground Motion is the vibratory ground motion for which certain structures, systems, and components must be designed pursuant to appendix S to part 50 of this chapter to remain functional.

Surface deformation is distortion of geologic strata at or near the ground surface by the processes of folding or faulting as a result of various earth forces. Tectonic surface deformation is associated with earthquake processes.

Testing reactor means a *testing facility* as defined in § 50.2 of this chapter.

[61 FR 65175, Dec. 11, 1996]

§ 100.4 Communications.

Except where otherwise specified, all communications and reports concerning the regulations in this part and applications filed under them should be sent by mail addressed to: ATTN: Document Control Desk, Director, Office of Nuclear Reactor Regulation, U.S. Nuclear Regulatory Commission, Washington, DC 20555–0001; by hand delivery to the NRC's offices at 11555 Rockville Pike, Rockville, Maryland; or, where practicable, by electronic submission, for example, via Electronic Information Exchange, or CD–ROM. Electronic submissions must be made in a manner that enables the NRC to receive, read, authenticate, distribute, and archive the submission, and process and retrieve it a single page at a time. Detailed guidance on making electronic submissions can be obtained by visiting the NRC's Web site at *http://www.nrc.gov/site-help/e-submittals.html;* by e-mail to *MSHD.Resource@nrc.gov;* or by writing the Office of the Chief Information Officer, U.S. Nuclear Regulatory Commission, Washington, DC 20555–0001. The guidance discusses, among other topics, the formats the NRC can accept, the use of electronic signatures, and the treatment of nonpublic information. Copies should be sent to the appropriate Regional Office and Resident Inspector.

[73 FR 5726, Jan. 31, 2008, as amended at 74 FR 62686, Dec. 1, 2009; 80 FR 74982, Dec. 1, 2015; 84 FR 65646, Nov. 29, 2019]

§ 100.8 Information collection requirements: OMB approval.

(a) The Nuclear Regulatory Commission has submitted the information collection requirements contained in this part to the Office of Management and Budget (OMB) for approval as required by the Paperwork Reduction Act (44 U.S.C. 3501 *et seq.*). The NRC may not conductor sponsor, and a person is not required to respond to, a collection of information unless it displays a currently valid OMB control number. OMB has approved the information collection requirements contained in this part under control number 3150–0093.

(b) The approved information collection requirements contained in this part appear in §§ 100.21, 100.23 and appendix A to this part.

[61 FR 65176, Dec. 11, 1996, as amended at 62 FR 52190, Oct. 6, 1997; 67 FR 67101, Nov. 4, 2002]

Subpart A—Evaluation Factors for Stationary Power Reactor Site Applications Before January 10, 1997 and for Testing Reactors

§ 100.10 Factors to be considered when evaluating sites.

Factors considered in the evaluation of sites include those relating both to the proposed reactor design and the characteristics peculiar to the site. It is expected that reactors will reflect through their design, construction and operation an extremely low probability for accidents that could result in release of significant quantities of radioactive fission products. In addition, the site location and the engineered features included as safeguards against the hazardous consequences of an accident, should one occur, should insure a low risk of public exposure. In particular, the Commission will take the following factors into consideration in determining the acceptability of a site for a power or testing reactor:

(a) Characteristics of reactor design and proposed operation including:

(1) Intended use of the reactor including the proposed maximum power level and the nature and inventory of contained radioactive materials;

(2) The extent to which generally accepted engineering standards are applied to the design of the reactor;

(3) The extent to which the reactor incorporates unique or unusual features having a significant bearing on the probability or consequences of accidental release of radioactive materials;

(4) The safety features that are to be engineered into the facility and those barriers that must be breached as a result of an accident before a release of radioactive material to the environment can occur.

(b) Population density and use characteristics of the site environs, including the exclusion area, low population zone, and population center distance.

(c) Physical characteristics of the site, including seismology, meteorology, geology, and hydrology.

(1) Appendix A, ''Seismic and Geologic Siting Criteria for Nuclear Power Plants,'' describes the nature of investigations required to obtain the geologic and seismic data necessary to determine site suitability and to provide reasonable assurance that a nuclear power plant can be constructed and operated at a proposed site without undue risk to the health and safety of the public. It describes procedures for determining the quantitative vibratory ground motion design basis at a site due to earthquakes and describes information needed to determine whether and to what extent a nuclear power plant need be designed to withstand the effects of surface faulting.

(2) Meteorological conditions at the site and in the surrounding area should be considered.

(3) Geological and hydrological characteristics of the proposed site may have a bearing on the consequences of an escape of radioactive material from the facility. Special precautions should be planned if a reactor is to be located at a site where a significant quantity of radioactive effluent might accidentally flow into nearby streams or rivers or might find ready access to underground water tables.

(d) Where unfavorable physical characteristics of the site exist, the proposed site may nevertheless be found to be acceptable if the design of the facility includes appropriate and adequate compensating engineering safeguards.

[27 FR 3509, Apr. 12, 1962, as amended at 38 FR 31281, Nov. 13, 1973]

§ 100.11 Determination of exclusion area, low population zone, and population center distance.

(a) As an aid in evaluating a proposed site, an applicant should assume a fission produce release[1] from the core, the expected demonstrable leak rate from the containment and the meteorological conditions pertinent to his site to derive an exclusion area, a low population zone and population center distance. For the purpose of this analysis, which shall set forth the basis for the numerical values used, the applicant should determine the following:

(1) An exclusion area of such size that an individual located at any point on its boundary for two hours immediately following onset of the postulated fission product release would not receive a total radiation dose to the whole body in excess of 25 rem[2] or a total radiation dose in excess of 300

[1] The fission product release assumed for these calculations should be based upon a major accident, hypothesized for purposes of site analysis or postulated from considerations of possible accidental events, that would result in potential hazards not exceeded by those from any accident considered credible. Such accidents have generally been assumed to result in substantial meltdown of the core with subsequent release of appreciable quantities of fission products.

[2] The whole body dose of 25 rem referred to above corresponds numerically to the once in a lifetime accidental or emergency dose for radiation workers which, according to NCRP recommendations may be disregarded in the determination of their radiation exposure status (see NBS Handbook 69 dated June 5, 1959). However, neither its use nor that of the 300 rem value for thyroid exposure as set forth in these site criteria guides are intended to imply that these numbers constitute acceptable limits for emergency doses to the public under accident conditions. Rather, this 25 rem whole body value and the 300 rem thyroid value have been set forth in these guides as reference values, which can be used in the evaluation of reactor sites with respect to potential reactor accidents of exceedingly low probability of occurrence, and low risk of public exposure to radiation.

rem[2] to the thyroid from iodine exposure.

(2) A low population zone of such size that an individual located at any point on its outer boundary who is exposed to the radioactive cloud resulting from the postulated fission product release (during the entire period of its passage) would not receive a total radiation dose to the whole body in excess of 25 rem or a total radiation dose in excess of 300 rem to the thyroid from iodine exposure.

(3) A population center distance of at least one and one-third times the distance from the reactor to the outer boundary of the low population zone. In applying this guide, the boundary of the population center shall be determined upon consideration of population distribution. Political boundaries are not controlling in the application of this guide. Where very large cities are involved, a greater distance may be necessary because of total integrated population dose consideration.

(b) For sites for multiple reactor facilities consideration should be given to the following:

(1) If the reactors are independent to the extent that an accident in one reactor would not initiate an accident in another, the size of the exclusion area, low population zone and population center distance shall be fulfilled with respect to each reactor individually. The envelopes of the plan overlay of the areas so calculated shall then be taken as their respective boundaries.

(2) If the reactors are interconnected to the extent that an accident in one reactor could affect the safety of operation of any other, the size of the exclusion area, low population zone and population center distance shall be based upon the assumption that all interconnected reactors emit their postulated fission product releases simultaneously. This requirement may be reduced in relation to the degree of coupling between reactors, the probability of concomitant accidents and the probability that an individual would not be exposed to the radiation effects from simultaneous releases. The applicant would be expected to justify to the satisfaction of the Commission the basis for such a reduction in the source term.

(3) The applicant is expected to show that the simultaneous operation of multiple reactors at a site will not result in total radioactive effluent releases beyond the allowable limits of applicable regulations.

NOTE: For further guidance in developing the exclusion area, the low population zone, and the population center distance, reference is made to Technical Information Document 14844, dated March 23, 1962, which contains a procedural method and a sample calculation that result in distances roughly reflecting current siting practices of the Commission. The calculations described in Technical Information Document 14844 may be used as a point of departure for consideration of particular site requirements which may result from evaluation of the characteristics of a particular reactor, its purpose and method of operation.

[27 FR 3509, Apr. 12, 1962, as amended at 31 FR 4670, Mar. 19, 1966; 38 FR 1273, Jan. 11, 1973; 40 FR 8793, Mar. 3, 1975; 40 FR 26527, June 24, 1975; 53 FR 43422, Oct. 27, 1988; 64 FR 48955, Sept. 9, 1999; 67 FR 67101, Nov. 4, 2002]

Subpart B—Evaluation Factors for Stationary Power Reactor Site Applications on or After January 10, 1997

SOURCE: 61 FR 65176, Dec. 11, 1996, unless otherwise noted.

§ 100.20 Factors to be considered when evaluating sites.

The Commission will take the following factors into consideration in determining the acceptability of a site for a stationary power reactor:

(a) Population density and use characteristics of the site environs, including the exclusion area, the population distribution, and site-related characteristics must be evaluated to determine whether individual as well as societal risk of potential plant accidents is low, and that physical characteristics unique to the proposed site that could pose a significant impediment to the development of emergency plans are identified.

(b) The nature and proximity of man-related hazards (e.g., airports, dams, transportation routes, military and chemical facilities) must be evaluated to establish site characteristics for use in determining whether a plant design can accommodate commonly occurring

hazards, and whether the risk of other hazards is very low.

(c) Physical characteristics of the site, including seismology, meteorology, geology, and hydrology.

(1) Section 100.23, ''Geologic and seismic siting factors,'' describes the criteria and nature of investigations required to obtain the geologic and seismic data necessary to determine the suitability of the proposed site and the plant design bases.

(2) Meteorological characteristics of the site that are necessary for safety analysis or that may have an impact upon plant design (such as maximum probable wind speed and precipitation) must be identified and characterized.

(3) Factors important to hydrological radionuclide transport (such as soil, sediment, and rock characteristics, adsorption and retention coefficients, groundwater velocity, and distances to the nearest surface body of water) must be obtained from on-site measurements. The maximum probable flood along with the potential for seismically induced floods discussed in § 100.23 (d)(3) must be estimated using historical data.

[61 FR 65176, Dec. 11, 1996, as amended at 78 FR 34250, June 7, 2013]

§ 100.21 Non-seismic siting criteria.

Applications for site approval for commercial power reactors shall demonstrate that the proposed site meets the following criteria:

(a) Every site must have an exclusion area and a low population zone, as defined in § 100.3;

(b) The population center distance, as defined in § 100.3, must be at least one and one-third times the distance from the reactor to the outer boundary of the low population zone. In applying this guide, the boundary of the population center shall be determined upon consideration of population distribution. Political boundaries are not controlling in the application of this guide;

(c) Site atmospheric dispersion characteristics must be evaluated and dispersion parameters established such that:

(1) Radiological effluent release limits associated with normal operation from the type of facility proposed to be located at the site can be met for any individual located offsite; and

(2) Radiological dose consequences of postulated accidents shall meet the criteria set forth in § 50.34(a)(1) of this chapter for the type of facility proposed to be located at the site;

(d) The physical characteristics of the site, including meteorology, geology, seismology, and hydrology must be evaluated and site characteristics established such that potential threats from such physical characteristics will pose no undue risk to the type of facility proposed to be located at the site;

(e) Potential hazards associated with nearby transportation routes, industrial and military facilities must be evaluated and site characteristics established such that potential hazards from such routes and facilities will pose no undue risk to the type of facility proposed to be located at the site;

(f) Site characteristics must be such that adequate security plans and measures can be developed;

(g) Physical characteristics unique to the proposed site that could pose a significant impediment to the development of emergency plans must be identified;

(h) Reactor sites should be located away from very densely populated centers. Areas of low population density are, generally, preferred. However, in determining the acceptability of a particular site located away from a very densely populated center but not in an area of low density, consideration will be given to safety, environmental, economic, or other factors, which may result in the site being found acceptable[3].

[61 FR 65176, Dec. 11, 1996, as amended at 78 FR 34250, June 7, 2013]

[3] Examples of these factors include, but are not limited to, such factors as the higher population density site having superior seismic characteristics, better access to skilled labor for construction, better rail and highway access, shorter transmission line requirements, or less environmental impact on undeveloped areas, wetlands or endangered species, etc. Some of these factors are included in, or impact, the other criteria included in this section.

§ 100.23 Geologic and seismic siting criteria.

This section sets forth the principal geologic and seismic considerations that guide the Commission in its evaluation of the suitability of a proposed site and adequacy of the design bases established in consideration of the geologic and seismic characteristics of the proposed site, such that, there is a reasonable assurance that a nuclear power plant can be constructed and operated at the proposed site without undue risk to the health and safety of the public. Applications to engineering design are contained in appendix S to part 50 of this chapter.

(a) *Applicability*. The requirements in paragraphs (c) and (d) of this section apply to applicants for an early site permit or combined license pursuant to Part 52 of this chapter, or a construction permit or operating license for a nuclear power plant pursuant to Part 50 of this chapter on or after January 10, 1997. However, for either an operating license applicant or holder whose construction permit was issued prior to January 10, 1997, the seismic and geologic siting criteria in Appendix A to Part 100 of this chapter continues to apply.

(b) *Commencement of construction*. The investigations required in paragraph (c) of this section are not considered ''construction'' as defined in 10 CFR 50.10(a).

(c) *Geological, seismological, and engineering characteristics*. The geological, seismological, and engineering characteristics of a site and its environs must be investigated in sufficient scope and detail to permit an adequate evaluation of the proposed site, to provide sufficient information to support evaluations performed to arrive at estimates of the Safe Shutdown Earthquake Ground Motion, and to permit adequate engineering solutions to actual or potential geologic and seismic effects at the proposed site. The size of the region to be investigated and the type of data pertinent to the investigations must be determined based on the nature of the region surrounding the proposed site. Data on the vibratory ground motion, tectonic surface deformation, nontectonic deformation, earthquake recurrence rates, fault geometry and slip rates, site foundation material, and seismically induced floods and water waves must be obtained by reviewing pertinent literature and carrying out field investigations. However, each applicant shall investigate all geologic and seismic factors (for example, volcanic activity) that may affect the design and operation of the proposed nuclear power plant irrespective of whether such factors are explicitly included in this section.

(d) *Geologic and seismic siting factors*. The geologic and seismic siting factors considered for design must include a determination of the Safe Shutdown Earthquake Ground Motion for the site, the potential for surface tectonic and nontectonic deformations, the design bases for seismically induced floods and water waves, and other design conditions as stated in paragraph (d)(4) of this section.

(1) Determination of the Safe Shutdown Earthquake Ground Motion. The Safe Shutdown Earthquake Ground Motion for the site is characterized by both horizontal and vertical free-field ground motion response spectra at the free ground surface. The Safe Shutdown Earthquake Ground Motion for the site is determined considering the results of the investigations required by paragraph (c) of this section. Uncertainties are inherent in such estimates. These uncertainties must be addressed through an appropriate analysis, such as a probabilistic seismic hazard analysis or suitable sensitivity analyses. Paragraph IV(a)(1) of appendix S to part 50 of this chapter defines the minimum Safe Shutdown Earthquake Ground Motion for design.

(2) Determination of the potential for surface tectonic and nontectonic deformations. Sufficient geological, seismological, and geophysical data must be provided to clearly establish whether there is a potential for surface deformation.

(3) Determination of design bases for seismically induced floods and water waves. The size of seismically induced floods and water waves that could affect a site from either locally or distantly generated seismic activity must be determined.

(4) Determination of siting factors for other design conditions. Siting factors for other design conditions that must be evaluated include soil and rock stability, liquefaction potential, natural and artificial slope stability, cooling water supply, and remote safety-related structure siting. Each applicant shall evaluate all siting factors and potential causes of failure, such as, the physical properties of the materials underlying the site, ground disruption, and the effects of vibratory ground motion that may affect the design and operation of the proposed nuclear power plant.

[61 FR 65176, Dec. 11, 1996, as amended at 72 FR 57447, Oct. 9, 2007]

APPENDIX A TO PART 100—SEISMIC AND GEOLOGIC SITING CRITERIA FOR NUCLEAR POWER PLANTS

I. PURPOSE

General Design Criterion 2 of Appendix A to part 50 of this chapter requires that nuclear power plant structures, systems, and components important to safety be designed to withstand the effects of natural phenomena such as earthquakes, tornadoes, hurricanes, floods, tsunami, and seiches without loss of capability to perform their safety functions. It is the purpose of these criteria to set forth the principal seismic and geologic considerations which guide the Commission in its evaluation of the suitability of proposed sites for nuclear power plants and the suitability of the plant design bases established in consideration of the seismic and geologic characteristics of the proposed sites.

These criteria are based on the limited geophysical and geological information available to date concerning faults and earthquake occurrence and effect. They will be revised as necessary when more complete information becomes available.

II. SCOPE

These criteria, which apply to nuclear power plants, describe the nature of the investigations required to obtain the geologic and seismic data necessary to determine site suitability and provide reasonable assurance that a nuclear power plant can be constructed and operated at a proposed site without undue risk to the health and safety of the public. They describe procedures for determining the quantitative vibratory ground motion design basis at a site due to earthquakes and describe information needed to determine whether and to what extent a nuclear power plant need be designed to withstand the effects of surface faulting. Other geologic and seismic factors required to be taken into account in the siting and design of nuclear power plants are identified.

The investigations described in this appendix are within the scope of investigations permitted by § 50.10(a)(2)(ii) of this chapter.

Each applicant for a construction permit shall investigate all seismic and geologic factors that may affect the design and operation of the proposed nuclear power plant irrespective of whether such factors are explicitly included in these criteria. Additional investigations and/or more conservative determinations than those included in these criteria may be required for sites located in areas having complex geology or in areas of high seismicity. If an applicant believes that the particular seismology and geology of a site indicate that some of these criteria, or portions thereof, need not be satisfied, the specific sections of these criteria should be identified in the license application, and supporting data to justify clearly such departures should be presented.

These criteria do not address investigations of volcanic phenomena required for sites located in areas of volcanic activity. Investigations of the volcanic aspects of such sites will be determined on a case-by-case basis.

III. DEFINITIONS

As used in these criteria:

(a) The *magnitude* of an earthquake is a measure of the size of an earthquake and is related to the energy released in the form of seismic waves. *Magnitude* means the numerical value on a Richter scale.

(b) The *intensity* of an earthquake is a measure of its effects on man, on man-built structures, and on the earth's surface at a particular location. *Intensity* means the numerical value on the Modified Mercalli scale.

(c) The *Safe Shutdown Earthquake*[1] is that earthquake which is based upon an evaluation of the maximum earthquake potential considering the regional and local geology and seismology and specific characteristics of local subsurface material. It is that earthquake which produces the maximum vibratory ground motion for which certain structures, systems, and components are designed to remain functional. These structures, systems, and components are those necessary to assure:

(1) The integrity of the reactor coolant pressure boundary,

(2) The capability to shut down the reactor and maintain it in a safe shutdown condition, or

[1] The *Safe Shutdown Earthquake* defines that earthquake which has commonly been referred to as the *Design Basis Earthquake*.

(3) The capability to prevent or mitigate the consequences of accidents which could result in potential offsite exposures comparable to the guideline exposures of this part.

(d) The *Operating Basis Earthquake* is that earthquake which, considering the regional and local geology and seismology and specific characteristics of local subsurface material, could reasonably be expected to affect the plant site during the operating life of the plant; it is that earthquake which produces the vibratory ground motion for which those features of the nuclear power plant necessary for continued operation without undue risk to the health and safety of the public are designed to remain functional.

(e) A *fault* is a tectonic structure along which differential slippage of the adjacent earth materials has occurred parallel to the fracture plane. It is distinct from other types of ground disruptions such as landslides, fissures, and craters. A fault may have gouge or breccia between its two walls and includes any associated monoclinal flexure or other similar geologic structural feature.

(f) *Surface faulting* is differential ground displacement at or near the surface caused directly by fault movement and is distinct from nontectonic types of ground disruptions, such as landslides, fissures, and craters.

(g) A *capable fault* is a fault which has exhibited one or more of the following characteristics:

(1) Movement at or near the ground surface at least once within the past 35,000 years or movement of a recurring nature within the past 500,000 years.

(2) Macro-seismicity instrumentally determined with records of sufficient precision to demonstrate a direct relationship with the fault.

(3) A structural relationship to a capable fault according to characteristics (1) or (2) of this paragraph such that movement on one could be reasonably expected to be accompanied by movement on the other.

In some cases, the geologic evidence of past activity at or near the ground surface along a particular fault may be obscured at a particular site. This might occur, for example, at a site having a deep overburden. For these cases, evidence may exist elsewhere along the fault from which an evaluation of its characteristics in the vicinity of the site can be reasonably based. Such evidence shall be used in determining whether the fault is a capable fault within this definition.

Notwithstanding the foregoing paragraphs III(g) (1), (2) and (3), structural association of a fault with geologic structural features which are geologically old (at least pre-Quaternary) such as many of those found in the Eastern region of the United States shall, in the absence of conflicting evidence, demonstrate that the fault is not a capable fault within this definition.

(h) A *tectonic province* is a region of the North American continent characterized by a relative consistency of the geologic structural features contained therein.

(i) A *tectonic structure* is a large scale dislocation or distortion within the earth's crust. Its extent is measured in miles.

(j) A *zone requiring detailed faulting investigation* is a zone within which a nuclear power reactor may not be located unless a detailed investigation of the regional and local geologic and seismic characteristics of the site demonstrates that the need to design for surface faulting has been properly determined.

(k) The *control width* of a fault is the maximum width of the zone containing mapped fault traces, including all faults which can be reasonably inferred to have experienced differential movement during Quaternary times and which join or can reasonably be inferred to join the main fault trace, measured within 10 miles along the fault's trend in both directions from the point of nearest approach to the site. (See Figure 1 of this appendix.)

(l) A *response spectrum* is a plot of the maximum responses (acceleration, velocity or displacement) of a family of idealized single-degree-of-freedom damped oscillators against natural frequencies (or periods) of the oscillators to a specified vibratory motion input at their supports.

IV. REQUIRED INVESTIGATIONS

The geologic, seismic and engineering characteristics of a site and its environs shall be investigated in sufficient scope and detail to provide reasonable assurance that they are sufficiently well understood to permit an adequate evaluation of the proposed site, and to provide sufficient information to support the determinations required by these criteria and to permit adequate engineering solutions to actual or potential geologic and seismic effects at the proposed site. The size of the region to be investigated and the type of data pertinent to the investigations shall be determined by the nature of the region surrounding the proposed site. The investigations shall be carried out by a review of the pertinent literature and field investigations and shall include the steps outlined in paragraphs (a) through (c) of this section.

(a) *Required Investigation for Vibratory Ground Motion*. The purpose of the investigations required by this paragraph is to obtain information needed to describe the vibratory ground motion produced by the Safe Shutdown Earthquake. All of the steps in paragraphs (a)(5) through (a)(8) of this section need not be carried out if the Safe Shutdown Earthquake can be clearly established by investigations and determinations of a lesser scope. The investigations required by this

paragraph provide an adequate basis for selection of an Operating Basis Earthquake. The investigations shall include the following:

(1) Determination of the lithologic, stratigraphic, hydrologic, and structural geologic conditions of the site and the region surrounding the site, including its geologic history;

(2) Identification and evaluation of tectonic structures underlying the site and the region surrounding the site, whether buried or expressed at the surface. The evaluation should consider the possible effects caused by man's activities such as withdrawal of fluid from or addition of fluid to the subsurface, extraction of minerals, or the loading effects of dams or reservoirs;

(3) Evaluation of physical evidence concerning the behavior during prior earthquakes of the surficial geologic materials and the substrata underlying the site from the lithologic, stratigraphic, and structural geologic studies;

(4) Determination of the static and dynamic engineering properties of the materials underlying the site. Included should be properties needed to determine the behavior of the underlying material during earthquakes and the characteristics of the underlying material in transmitting earthquake-induced motions to the foundations of the plant, such as seismic wave velocities, density, water content, porosity, and strength;

(5) Listing of all historically reported earthquakes which have affected or which could reasonably be expected to have affected the site, including the date of occurrence and the following measured or estimated data: magnitude or highest intensity, and a plot of the epicenter or location of highest intensity. Where historically reported earthquakes could have caused a maximum ground acceleration of at least one-tenth the acceleration of gravity (0.1g) at the foundations of the proposed nuclear power plant structures, the acceleration or intensity and duration of ground shaking at these foundations shall also be estimated. Since earthquakes have been reported in terms of various parameters such as magnitude, intensity at a given location, and effect on ground, structures, and people at a specific location, some of these data may have to be estimated by use of appropriate empirical relationships. The comparative characteristics of the material underlying the epicentral location or region of highest intensity and of the material underlying the site in transmitting earthquake vibratory motion shall be considered;

(6) Correlation of epicenters or locations of highest intensity of historically reported earthquakes, where possible, with tectonic structures any part of which is located within 200 miles of the site. Epicenters or locations of highest intensity which cannot be reasonably correlated with tectonic structures shall be identified with tectonic provinces any part of which is located within 200 miles of the site;

(7) For faults, any part of which is within 200 miles[2] of the site and which may be of significance in establishing the Safe Shutdown Earthquake, determination of whether these faults are to be considered as capable faults.[3 4] This determination is required in order to permit appropriate consideration of the geologic history of such faults in establishing the Safe Shutdown Earthquake. For guidance in determining which faults may be of significance in determining the Safe Shutdown Earthquake, table 1 of this appendix presents the minimum length of fault to be considered versus distance from site. Capable faults of lesser length than those indicated in table 1 and faults which are not capable faults need not be considered in determining the Safe Shutdown Earthquake, except where unusual circumstances indicate such consideration is appropriate;

TABLE 1

	Minimum length[1]
Distance from the site (miles):	
0 to 20	1
Greater than 20 to 50	5
Greater than 50 to 100	10
Greater than 100 to 150	20
Greater than 150 to 200	40

[1] Minimum length of fault (miles) which shall be considered in establishing Safe Shutdown Earthquake.

(8) For capable faults, any part of which is within 200 miles[2] of the site and which may be of significance in establishing the Safe Shutdown Earthquake, determination of:

(i) The length of the fault;

(ii) The relationship of the fault to regional tectonic structures; and

(iii) The nature, amount, and geologic history of displacements along the fault, including particularly the estimated amount of the

[2] If the Safe Shutdown Earthquake can be associated with a fault closer than 200 miles to the site, the procedures of paragraphs (a)(7) and (a)(8) of this section need not be carried out for successively more remote faults.

[3] In the absence of absolute dating, evidence of recency of movement may be obtained by applying relative dating technique to ruptured, offset, warped or otherwise structurally disturbed surface or near surface materials or geomorphic features.

[4] The applicant shall evaluate whether or not a fault is a capable fault with respect to the characteristics outlined in paragraphs III(g)(1), (2), and (3) by conducting a reasonable investigation using suitable geologic and geophysical techniques.

maximum Quaternary displacement related to any one earthquake along the fault.

(b) *Required Investigation for Surface Faulting*. The purpose of the investigations required by this paragraph is to obtain information to determine whether and to what extent the nuclear power plant need be designed for surface faulting. If the design basis for surface faulting can be clearly established by investigations of a lesser scope, not all of the steps in paragraphs (b)(4) through (b)(7) of this section need be carried out. The investigations shall include the following:

(1) Determination of the lithologic, stratigraphic, hydrologic, and structural geologic conditions of the site and the area surrounding the site, including its geologic history;

(2) Evaluation of tectonic structures underlying the site, whether buried or expressed at the surface, with regard to their potential for causing surface displacement at or near the site. The evaluation shall consider the possible effects caused by man's activities such as withdrawal of fluid from or addition of fluid to the subsurface, extraction of minerals, or the loading effects of dams or reservoirs;

(3) Determination of geologic evidence of fault offset at or near the ground surface at or near the site;

(4) For faults greater than 1000 feet long, any part of which is within 5 miles[5] of the site, determination of whether these faults are to be considered as capable faults;[6] [7]

(5) Listing of all historically reported earthquakes which can reasonably be associated with capable faults greater than 1000 feet long, any part of which is within 5 miles[5] of the site, including the date of occurrence and the following measured or estimated data: magnitude or highest intensity, and a plot of the epicenter or region of highest intensity;

(6) Correlation of epicenters or locations of highest intensity of historically reported earthquakes with capable faults greater than 1000 feet long, any part of which is located within 5 miles[5] of the site;

(7) For capable faults greater than 1000 feet long, any part of which is within 5 miles[5] of the site, determination of:

(i) The length of the fault;

(ii) The relationship of the fault to regional tectonic structures;

(iii) The nature, amount, and geologic history of displacements along the fault, including particularly the estimated amount of the maximum Quaternary displacement related to any one earthquake along the fault; and

(iv) The outer limits of the fault established by mapping Quaternary fault traces for 10 miles along its trend in both directions from the point of its nearest approach to the site.

(c) *Required Investigation for Seismically Induced Floods and Water Waves*. (1) For coastal sites, the investigations shall include the determination of:

(i) Information regarding distantly and locally generated waves or tsunami which have affected or could have affected the site. Available evidence regarding the runup and drawdown associated with historic tsunami in the same coastal region as the site shall also be included;

(ii) Local features of coastal topography which might tend to modify tsunami runup or drawdown. Appropriate available evidence regarding historic local modifications in tsunami runup or drawndown at coastal locations having topography similar to that of the site shall also be obtained; and

(iii) Appropriate geologic and seismic evidence to provide information for establishing the design basis for seismically induced floods or water waves from a local offshore earthquake, from local offshore effects of an onshore earthquake, or from coastal subsidence. This evidence shall be determined, to the extent practical, by a procedure similar to that required in paragraphs (a) and (b) of this section. The probable slip characteristics of offshore faults shall also be considered as well as the potential for offshore slides in submarine material.

(2) For sites located near lakes and rivers, investigations similar to those required in paragraph (c)(1) of this section shall be carried out, as appropriate, to determine the potential for the nuclear power plant to be exposed to seismically induced floods and water waves as, for example, from the failure during an earthquake of an upstream dam or from slides of earth or debris into a nearby lake.

V. SEISMIC AND GEOLOGIC DESIGN BASES

(a) *Determination of Design Basis for Vibratory Ground Motion*. The design of each nuclear power plant shall take into account the potential effects of vibratory ground motion caused by earthquakes. The design basis for

[5] If the design basis for surface faulting can be determined from a fault closer than 5 miles to the site, the procedures of paragraphs (b)(4) through (b)(7) of this section need not be carried out for successively more remote faults.

[6] In the absence of absolute dating, evidence of recency of movement may be obtained by applying relative dating techniques to ruptured, offset, warped or otherwise structurally disturbed surface of near-surface materials or geomorphic features.

[7] The applicant shall evaluate whether or not a fault is a capable fault with respect to the characteristics outlined in paragraphs III(g)(1), (2), and (3) by conducting a reasonable investigation using suitable geological and geophysical techniques.

the maximum vibratory ground motion and the expected vibratory ground motion should be determined through evaluation of the seismology, geology, and the seismic and geologic history of the site and the surrounding region. The most severe earthquakes associated with tectonic structures or tectonic provinces in the region surrounding the site should be identified, considering those historically reported earthquakes that can be associated with these structures or provinces and other relevant factors. If faults in the region surrounding the site are capable faults, the most severe earthquakes associated with these faults should be determined by also considering their geologic history. The vibratory ground motion at the site should be then determined by assuming that the epicenters or locations of highest intensity of the earthquakes are situated at the point on the tectonic structures or tectonic provinces nearest to the site. The earthquake which could cause the maximum vibratory ground motion at the site should be designated the Safe Shutdown Earthquake. The specific procedures for determining the design basis for vibratory ground motion are given in the following paragraphs.

(1) *Determination of Safe Shutdown Earthquake*. The Safe Shutdown Earthquake shall be identified through evaluation of seismic and geologic information developed pursuant to the requirements of paragraph IV(a), as follows:

(i) The historic earthquakes of greatest magnitude or intensity which have been correlated with tectonic structures pursuant to the requirements of paragraph (a)(6) of section IV shall be determined. In addition, for capable faults, the information required by paragraph (a)(8) of section IV shall also be taken into account in determining the earthquakes of greatest magnitude related to the faults. The magnitude or intensity of earthquakes based on geologic evidence may be larger than that of the maximum earthquakes historically recorded. The accelerations at the site shall be determined assuming that the epicenters of the earthquakes of greatest magnitude or the locations of highest intensity related to the tectonic structures are situated at the point on the structures closest to the site;

(ii) Where epicenters or locations of highest intensity of historically reported earthquakes cannot be reasonably related to tectonic structures but are identified pursuant to the requirements of paragraph (a)(6) of section IV with tectonic provinces in which the site is located, the accelerations at the site shall be determined assuming that these earthquakes occur at the site;

(iii) Where epicenters or locations of the highest intensity of historically reported earthquakes cannot be reasonably related to tectonic structures but are identified pursuant to the requirements of paragraph (a)(6) of section IV with tectonic provinces in which the site is not located, the accelerations at the site shall be determined assuming that the epicenters or locations of highest intensity of these earthquakes are at the closest point to the site on the boundary of the tectonic province;

(iv) The earthquake producing the maximum vibratory acceleration at the site, as determined from paragraph (a)(1)(i) through (iii) of this section shall be designated the Safe Shutdown Earthquake for vibratory ground motion, except as noted in paragraph (a)(1)(v) of this section. The characteristics of the Safe Shutdown Earthquake shall be derived from more than one earthquake determined from paragraph (a)(1)(i) through (iii) of this section, where necessary to assure that the maximum vibratory acceleration at the site throughout the frequency range of interest is included. In the case where a causative fault is near the site, the effect of proximity of an earthquake on the spectral characteristics of the Safe Shutdown Earthquake shall be taken into account. The procedures in paragraphs (a)(1)(i) through (a)(1)(iii) of this section shall be applied in a conservative manner. The determinations carried out in accordance with paragraphs (a)(1)(ii) and (a)(1)(iii) shall assure that the safe shutdown earthquake intensity is, as a minimum, equal to the maximum historic earthquake intensity experienced within the tectonic province in which the site is located. In the event that geological and seismological data warrant, the Safe Shutdown Earthquake shall be larger than that derived by use of the procedures set forth in section IV and V of the appendix. The maximum vibratory accelerations of the Safe Shutdown Earthquake at each of the various foundation locations of the nuclear power plant structures at a given site shall be determined taking into account the characteristics of the underlying soil material in transmitting the earthquake-induced motions, obtained pursuant to paragraphs (a)(1), (3), and (4) of section IV. The Safe Shutdown Earthquake shall be defined by response spectra corresponding to the maximum vibratory accelerations as outlined in paragraph (a) of section VI; and

(v) Where the maximum vibratory accelerations of the Safe Shutdown Earthquake at the foundations of the nuclear power plant structures are determined to be less than one-tenth the acceleration of gravity (0.1 g) as a result of the steps required in paragraphs (a)(1)(i) through (iv) of this section, it shall be assumed that the maximum vibratory accelerations of the Safe Shutdown Earthquake at these foundations are at least 0.1 g.

(2) *Determination of Operating Basis Earthquake*. The Operating Basis Earthquake shall

be specified by the applicant after considering the seismology and geology of the region surrounding the site. If vibratory ground motion exceeding that of the Operating Basis Earthquake occurs, shutdown of the nuclear power plant will be required. Prior to resuming operations, the licensee will be required to demonstrate to the Commission that no functional damage has occurred to those features necessary for continued operation without undue risk to the health and safety of the public.

The maximum vibratory ground acceleration of the Operating Basis Earthquake shall be at least one-half the maximum vibratory ground acceleration of the Safe Shutdown Earthquake.

(b) *Determination of Need to Design for Surface Faulting*. In order to determine whether a nuclear power plant is required to be designed to withstand the effects of surface faulting, the location of the nuclear power plant with respect to capable faults shall be considered. The area over which each of these faults has caused surface faulting in the past is identified by mapping its fault traces in the vicinity of the site. The fault traces are mapped along the trend of the fault for 10 miles in both directions from the point of its nearest approach to the nuclear power plant because, for example, traces may be obscured along portions of the fault. The maximum width of the mapped fault traces, called the control width, is then determined from this map. Because surface faulting has sometimes occurred beyond the limit of mapped fault traces or where fault traces have not been previously recognized, the control width of the fault is increased by a factor which is dependent upon the largest potential earthquake related to the fault. This larger width delineates a zone, called the zone requiring detailed faulting investigation, in which the possibility of surface faulting is to be determined. The following paragraphs outline the specific procedures for determining the zone requiring detailed faulting investigation for a capable fault.

(1) *Determination of Zone Requiring Detailed Faulting Investigation*. The zone requiring detailed faulting investigation for a capable fault which was investigated pursuant to the requirement of paragraph (b)(7) of section IV shall be determined through use of the following table:

TABLE 2—DETERMINATION OF ZONE REQUIRING DETAILED FAULTING INVESTIGATION

Magnitude of earthquake	Width of zone requiring detailed faulting investigation (See fig. 1)
Less than 5.5	1 × control width.
5.5–6.4	2 × control width.
6.5–7.5	3 × control width.
Greater than 7.5	4 × control width.

The largest magnitude earthquake related to the fault shall be used in table 2. This earthquake shall be determined from the information developed pursuant to the requirements of paragraph (b) of Section IV for the fault, taking into account the information required by paragraph (b)(7) of section IV. The control width used in table 2 is determined by mapping the outer limits of the fault traces from information developed pursuant to paragraph (b)(7)(iv) of section IV. The control width shall be used in table 2 unless the characteristics of the fault are obscured for a significant portion of the 10 miles on either side of the point of nearest approach to the nuclear power plant. In this event, the use in table 2 of the width of mapped fault traces more than 10 miles from the point of nearest approach to the nuclear power plant may be appropriate.

The zone requiring detailed faulting investigation, as determined from table 2, shall be used for the fault except where:

(i) The zone requiring detailed faulting investigation from table 2 is less than one-half mile in width. In this case the zone shall be at least one-half mile in width; or

(ii) Definitive evidence concerning the regional and local characteristics of the fault justifies use of a different value. For example, thrust or bedding-plane faults may require an increase in width of the zone to account for the projected dip of the fault plane; or

(iii) More detailed three-dimensional information, such as that obtained from precise investigative techniques, may justify the use of a narrower zone. Possible examples of such techniques are the use of accurate records from closely spaced drill holes or from closely spaced, high-resolution offshore geophysical surveys.

In delineating the zone requiring detailed faulting investigation for a fault, the center of the zone shall coincide with the center of the fault at the point of nearest approach of the fault to the nuclear power plant as illustrated in figure 1.

(c) *Determination of Design Bases for Seismically Induced Floods and Water Waves*. The size of seismically induced floods and water waves which could affect a site from either locally or distantly generated seismic activity shall be determined, taking into consideration the results of the investigation required by paragraph (c) of section IV. Local topographic characteristics which might tend to modify the possible runup and drawdown at the site shall be considered. Adverse tide conditions shall also be taken into account in determining the effect of the floods and waves on the site. The characteristics of the earthquake to be used in evaluating the offshore effects of local earthquakes shall be determined by a procedure similar to that used to determine the characteristics of the

Safe Shutdown Earthquake in paragraph V(a).

(d) *Determination of Other Design Conditions*—(1) *Soil Stability*. Vibratory ground motion associated with the Safe Shutdown Earthquake can cause soil instability due to ground disruption such as fissuring, differential consolidation, liquefaction, and cratering which is not directly related to surface faulting. The following geologic features which could affect the foundations of the proposed nuclear power plant structures shall be evaluated, taking into account the information concerning the physical properties of materials underlying the site developed pursuant to paragraphs (a)(1), (3), and (4) of section IV and the effects of the Safe Shutdown Earthquake:

(i) Areas of actual or potential surface or subsurface subsidence, uplift, or collapse resulting from:

(*a*) Natural features such as tectonic depressions and cavernous or karst terrains, particularly those underlain by calcareous or other soluble deposits;

(*b*) Man's activities such as withdrawal of fluid from or addition of fluid to the subsurface, extraction of minerals, or the loading effects of dams or reservoirs; and

(*c*) Regional deformation.

(ii) Deformational zones such as shears, joints, fractures, folds, or combinations of these features.

(iii) Zones of alteration or irregular weathering profiles and zones of structural weakness composed of crushed or disturbed materials.

(iv) Unrelieved residual stresses in bedrock.

(v) Rocks or soils that might be unstable because of their mineralogy, lack of consolidation, water content, or potentially undesirable response to seismic or other events. Seismic response characteristics to be considered shall include liquefaction, thixotropy, differential consolidation, cratering, and fissuring.

(2) *Slope stability*. Stability of all slopes, both natural and artificial, the failure of which could adversely affect the nuclear power plant, shall be considered. An assessment shall be made of the potential effects of erosion or deposition and of combinations of erosion or deposition with seismic activity, taking into account information concerning the physical property of the materials underlying the site developed pursuant to paragraph (a)(1), (3), and (4) of section IV and the effects of the Safe Shutdown Earthquake.

(3) *Cooling water supply*. Assurance of adequate cooling water supply for emergency and long-term shutdown decay heat removal shall be considered in the design of the nuclear power plant, taking in to account information concerning the physical properties of the materials underlying the site developed pursuant to paragraphs (a)(1), (3), and (4) of section IV and the effects of the Safe Shutdown Earthquake and the design basis for surface faulting. Consideration of river blockage or diversion or other failures which may block the flow of cooling water, coastal uplift or subsidence, or tsunami runup and drawdown, and failure of dams and intake structures shall be included in the evaluation, where appropriate.

(4) *Distant structures*. Those structures which are not located in the immediate vicinity of the site but which are safety related shall be designed to withstand the effect of the Safe Shutdown Earthquake and the design basis for surface faulting determined on a comparable basis to that of the nuclear power plant, taking into account the material underlying the structures and the different location with respect to that of the site.

VI. APPLICATION TO ENGINEERING DESIGN

(a) *Vibratory ground motion*—(1) *Safe Shutdown Earthquake*. The vibratory ground motion produced by the Safe Shutdown Earthquake shall be defined by response spectra corresponding to the maximum vibratory accelerations at the elevations of the foundations of the nuclear power plant structures determine pursuant to paragraph (a)(1) of section V. The response spectra shall relate the response of the foundations of the nuclear power plant structures to the vibratory ground motion, considering such foundations to be single-degree-of-freedom damped oscillators and neglecting soil-structure interaction effects. In view of the limited data available on vibratory ground motions of strong earthquakes, it usually will be appropriate that the response spectra be smoothed design spectra developed from a series of response spectra related to the vibratory motions caused by more than one earthquake.

The nuclear power plant shall be designed so that, if the Safe Shutdown Earthquake occurs, certain structures, systems, and components will remain functional. These structures, systems, and components are those necessary to assure (i) the integrity of the reactor coolant pressure boundary, (ii) the capability to shut down the reactor and maintain it in a safe condition, or (iii) the capability to prevent or mitigate the consequences of accidents which could result in potential offsite exposures comparable to the guideline exposures of this part. In addition to seismic loads, including aftershocks, applicable concurrent functional and accident-induced loads shall be taken into account in the design of these safety-related structures, systems, and components. The design of the nuclear power plant shall also take into account the possible effects of the Safe Shutdown Earthquake on the facility foundations

by ground disruption, such as fissuring, differential consolidation, cratering, liquefaction, and landsliding, as required in paragraph (d) of section V.

The engineering method used to insure that the required safety functions are maintained during and after the vibratory ground motion associated with the Safe Shutdown Earthquake shall involve the use of either a suitable dynamic analysis or a suitable qualification test to demonstrate that structures, systems and components can withstand the seismic and other concurrent loads, except where it can be demonstrated that the use of an equivalent static load method provides adequate conservatism.

The analysis or test shall take into account soil-structure interaction effects and the expected duration of vibratory motion. It is permissible to design for strain limits in excess of yield strain in some of these safety-related structures, systems, and components during the Safe Shutdown Earthquake and under the postulated concurrent conditions, provided that the necessary safety functions are maintained.

(2) *Operating Basis Earthquake*. The Operating Basis Earthquake shall be defined by response spectra. All structures, systems, and components of the nuclear power plant necessary for continued operation without undue risk to the health and safety of the public shall be designed to remain functional and within applicable stress and deformation limits when subjected to the effects of the vibratory motion of the Operating Basis Earthquake in combination with normal operating loads. The engineering method used to insure that these structures, systems, and components are capable of withstanding the effects of the Operating Basis Earthquake shall involve the use of either a suitable dynamic analysis or a suitable qualification test to demonstrate that the structures, systems and components can withstand the seismic and other concurrent loads, except where it can be demonstrated that the use of an equivalent static load method provides adequate conservatism. The analysis or test shall take into account soil-structure interaction effects and the expected duration of vibratory motion.

(3) *Required Seismic instrumentation*. Suitable instrumentation shall be provided so that the seismic response of nuclear power plant features important to safety can be determined promptly to permit comparison of such response with that used as the design basis. Such a comparison is needed to decide whether the plant can continue to be operated safely and to permit such timely action as may be appropriate.

These criteria do not address the need for instrumentation that would automatically shut down a nuclear power plant when an earthquake occurs which exceeds a predetermined intensity. The need for such instrumentation is under consideration.

(b) *Surface Faulting*. (1) If the nuclear power plant is to be located within the zone requiring detailed faulting investigation, a detailed investigation of the regional and local geologic and seismic characteristics of the site shall be carried out to determine the need to take into account surface faulting in the design of the nuclear power plant. Where it is determined that surface faulting need not be taken into account, sufficient data to clearly justify the determination shall be presented in the license application.

(2) Where it is determined that surface faulting must be taken into account, the applicant shall, in establishing the design basis for surface faulting on a site take into account evidence concerning the regional and local geologic and seismic characteristics of the site and from any other relevant data.

(3) The design basis for surface faulting shall be taken into account in the design of the nuclear power plant by providing reasonable assurance that in the event of such displacement during faulting certain structures, systems, and components will remain functional. These structures, systems, and components are those necessary to assure (i) the integrity of the reactor coolant pressure boundary, (ii) the capability to shut down the reactor and maintain it in a safe shutdown condition, or (iii) the capability to prevent or mitigate the consequences of accidents which could result in potential offsite exposures comparable to the guideline exposures of this part. In addition to seismic loads, including aftershocks, applicable concurrent functional and accident-induced loads shall be taken into account in the design of such safety features. The design provisions shall be based on an assumption that the design basis for surface faulting can occur in any direction and azimuth and under any part of the nuclear power plant unless evidence indicates this assumption is not appropriate, and shall take into account the estimated rate at which the surface faulting may occur.

(c) *Seismically Induced Floods and Water Waves and Other Design Conditions*. The design basis for seismically induced floods and water waves from either locally or distantly generated seismic activity and other design conditions determined pursuant to paragraphs (c) and (d) of section V, shall be taken into account in the design of the nuclear power plant so as to prevent undue risk to the health and safety of the public.

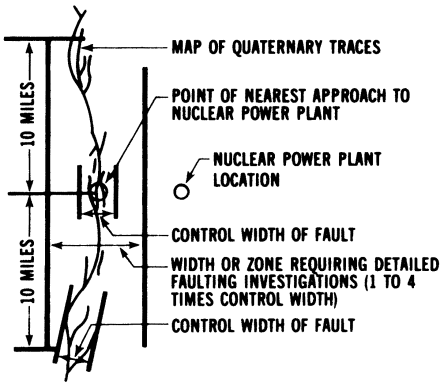

FIGURE 1—DIAGRAMMATIC ILLUSTRATION OF DELINEATION OF WIDTH OF ZONE REQUIRING DETAILED FAULTING INVESTIGATIONS FOR SPECIFIC NUCLEAR POWER PLANT LOCATION.

(Sec. 201, Pub. L. 93–438, 88 Stat. 1243 (42 U.S.C. 5841))

[38 FR 31281, Nov. 13, 1973, as amended at 38 FR 32575, Nov. 27, 1973; 42 FR 2052, Jan. 10, 1977; 78 FR 34250, June 7, 2013]

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AUTHORITY: Atomic Energy Act of 1954, secs. 11, 51, 53, 54, 57, 62, 63, 64, 65, 81, 82, 103, 104, 109, 111, 121, 122, 123, 124, 126, 127, 128, 129, 133, 134, 161, 170H, 181, 182, 183, 184, 186, 187, 189, 223, 234 (42 U.S.C. 2014, 2071, 2073, 2074, 2077, 2092, 2093, 2094, 2095, 2111, 2112, 2133, 2134, 2139, 2141, 2151, 2152, 2153, 2154, 2155, 2156, 2157, 2158, 2160c, 2160d, 2201, 2210h, 2231, 2232, 2233,

2234, 2236, 2237, 2239, 2273, 2282); Energy Reorganization Act of 1974, sec. 201 (42 U.S.C. 5841); Administrative Procedure Act (5 U.S.C. 552, 553); 42 U.S.C. 2139a, 2155a; 44 U.S.C. 3504 note.

Section 110.1(b) also issued under 22 U.S.C. 2403; 22 U.S.C. 2778a; 50 App. U.S.C. 2401 *et seq.*

SOURCE: 43 FR 21641, May 19, 1978, unless otherwise noted.

Subpart A—General Provisions

§ 110.1 Purpose and scope.

(a) The regulations in this part prescribe licensing, enforcement, and rulemaking procedures and criteria, under the Atomic Energy Act, for the export of nuclear equipment and material, as set out in §§ 110.8 and 110.9, and the import of nuclear equipment and material, as set out in § 110.9a. This part also gives notice to all persons who knowingly provide to any licensee, applicant, contractor, or subcontractor, components, equipment, materials, or other goods or services, that relate to a licensee's or applicant's activities subject to this part, that they may be individually subject to NRC enforcement action for violation of § 110.7b.

(b) The regulations in this part apply to all persons in the United States except:

(1) Persons who import or export U.S. Munitions List nuclear items such as uranium depleted in the isotope-235 and incorporated in defense articles. These persons are subject to the regulations promulgated pursuant to the Arms Export Control Act and administered by the Department of State, Directorate of Defense Trade Controls, and the Department of Justice, Bureau of Alcohol, Tobacco, Firearms and Explosives, as authorized by section 110 of the International Security and Development Cooperation Act of 1980.

(2) Persons who export uranium depleted in the isotope-235 and incorporated in commodities solely to take advantage of high density or pyrophoric characteristics. These persons are subject to the controls of the Department of Commerce under the Export Administration Act, as continued in force under Executive Order 13222 (August 22, 2001), as extended;

(3) Persons who export nuclear referral list commodities such as bulk zirconium, rotor and bellows equipment, maraging steel, nuclear reactor related equipment, including process control systems and simulators. These persons are subject to the licensing authority of the Department of Commerce pursuant to 15 CFR part 730 *et seq.;*

(4) Persons who import deuterium, nuclear grade graphite, or nuclear equipment other than production or utilization facilities. A uranium enrichment facility is not a production facility for the purposes of import; and

(5) Shipments which are only passing through the U.S. (in bond shipments) do not require an NRC import or export license; however, they must comply with the Department of Transportation/IAEA packaging, and State transportation requirements.

[49 FR 47197, Dec. 3, 1984; 49 FR 49841, Dec. 24, 1984, as amended at 55 FR 34519, Aug. 23, 1990; 56 FR 40692, Aug. 15, 1991; 58 FR 13001, Mar. 9, 1993; 61 FR 35602, July 8, 1996; 63 FR 1900, Jan. 13, 1998; 65 FR 70289, Nov. 22, 2000; 75 FR 44085, July 28, 2010]

§ 110.2 Definitions.

As used in this part,

Accelerator-produced radioactive material means any material made radioactive by a particle accelerator.

Agreement for cooperation means any agreement with another nation or group of nations concluded under section 123 of the Atomic Energy Act.

Atomic Energy Act means the Atomic Energy Act of 1954, as amended (42 U.S.C. 2011 *et seq.*).

Bulk material means any quantity of any one or more of the radionuclides listed in Table 1 of Appendix P to this part in a form that is:

(1) Not a Category 1 radioactive source;

(2) Not a Category 2 radioactive source;

(3) Not plutonium-238; and

(4) Deemed to pose a risk similar to or greater than a Category 2 radioactive source.

Byproduct material means

(1) Any radioactive material (except special nuclear material) yielded in, or made radioactive by, exposure to the radiation incident to the process of producing or utilizing special nuclear material;

(2) The tailings or wastes produced by the extraction or concentration of uranium or thorium from ore (see 10 CFR 20.1003);

(3)(i) Any discrete source of radium-226 that is produced, extracted, or converted after extraction, before, on, or after August 8, 2005, for use for a commercial, medical, or research activity; or

(ii) Any material that has been made radioactive by use of a particle accelerator and is produced, extracted, or converted after extraction, before, on, or after August 8, 2005 for use for a commercial, medical, or research activity; and

(4) Any discrete source of naturally occurring radioactive material, other than source material, that—

(i) The Commission, in consultation with the Administrator of the Environmental Protection Agency, the Secretary of Energy, the Secretary of Homeland Security, and the head of any other appropriate Federal agency, determines would pose a threat similar to the threat posed by a discrete source of radium-226 to the public health and safety or the common defense and security; and

(ii) Before, on, or after August 8, 2005 is extracted or converted after extraction for use in a commercial, medical, or research activity.

Classified Information means Classified National Security Information under Executive Order 13526, as amended, or any predecessor or successor Executive Order and Restricted Data under the Atomic Energy Act.

Commission means the United States Nuclear Regulatory Commission or its duly authorized representatives.

Common defense and security means the common defense and security of the United States.

Conversion facility means any facility for the transformation from one uranium chemical species to another, including conversion of uranium ore concentrates to uranium trioxide (UO3), conversion of UO3 to uranium dioxide (UO2), conversion of uranium oxides to uranium tetrafluoride (UF4) or uranium hexafluoride (UF6), conversion of UF4 to UF6, conversion of UF6 to UF4, conversion of UF4 to uranium metal, and conversion of uranium fluorides to UO2.

Depleted uranium means uranium having a percentage of uranium-235 less than the naturally occurring distribution of uranium-235 found in natural uranium (less than 0.711 weight percent uranium-235). It is obtained from spent (used) fuel elements or as byproduct tails or residues from uranium isotope separation.

Deuterium means deuterium and any deuterium compound, including heavy water, in which the ratio of deuterium atoms to hydrogen atoms exceeds 1:5000; and *deuterium for nuclear end use* means deuterium and any deuterium compound, including heavy water, in which the ratio of deuterium atoms to hydrogen atoms exceeds 1:5000, that is intended for use in a nuclear reactor. Export of deuterium and deuterium compounds, including heavy water, for non-nuclear end use is regulated by the Department of Commerce.

Discrete source means a radionuclide that has been processed so that its concentration within a material has been purposely increased for use for commercial, medical, or research activities.

Disposal means permanent isolation of radioactive material from the surrounding environment.

Dual-use means equipment and materials that may be used in nuclear or non-nuclear applications.

Effective kilograms of special nuclear material means:

(1) For plutonium and uranium-233, their weight in kilograms;

(2) For uranium enriched 1 percent or greater in the isotope uranium-235, its element weight in kilograms multiplied by the square of its enrichment expressed as a decimal weight fraction; and

(3) For uranium enriched below 1 percent in the isotope uranium-235, its element weight in kilograms multiplied by 0.0001.

Embargoed means that no nuclear material or equipment can be exported to certain countries under an NRC general license. Exports to embargoed countries must be pursuant to a specific license issued by the NRC and require Executive Branch review pursuant to § 110.41.

Exceptional circumstances means, with respect to exports from the United States of radioactive material listed in Table 1 of Appendix P of this part:

(1) Cases of considerable health or medical need as acknowledged by the U.S. Government and the government of the importing country;

(2) Cases where there is an imminent radiological hazard or security threat presented by one or more radioactive sources; and

(3) Cases in which the exporting facility or U.S. Government maintains control of the radioactive material throughout the period the material is outside of the U.S. and removes the material at the conclusion of this period.

Executive Branch means the Departments of State, Energy, Defense and Commerce.

Export means to physically transfer nuclear equipment or material to a person or an international organization in a foreign country, except DOE distributions as authorized in Section 111 of the Atomic Energy Act or Section 110 of the International Security and Development Cooperation Act of 1980.

General license means an export or import license effective without the filing of a specific application with the Commission or the issuance of licensing documents to a particular person. A general license is a type of license issued through rulemaking by the NRC and is not an exemption from the requirements in this part. A general license does not relieve a person from complying with other applicable NRC, Federal, and State requirements.

Heels means small quantities of natural, depleted or low-enriched uranium (to a maximum of 20 percent), in the form of uranium hexafluoride (UF6) left in emptied transport cylinders being returned to suppliers after delivery of the product.

High-enriched uranium means uranium enriched to 20 percent or greater in the isotope uranium-235.

IAEA means the International Atomic Energy Agency.

Import means import into the United States.

Individual shipment means a shipment consisting of one lot of freight tendered to a carrier by one consignor at one place at one time for delivery to one consignee on one bill of lading. This lot may consist of:

(1) Only one item or

(2) A number of containers all listed on the same set of shipping documents. This one lot of freight or ''distinct'' shipment can be transported on the same carrier with other distinct shipments containing the same items as long as each shipment is covered by separate sets of shipping documents.

The phrase *introduced into a hearing* means the introduction or incorporation of testimony or documentary matter into the record of a hearing.

License means a general or specific export or import license issued pursuant to this part.

Licensee means a person authorized by a specific or a general license to export or import nuclear equipment or material pursuant to this part.

Low-enriched uranium means uranium enriched below 20 percent in the isotope uranium-235.

Low-level waste compact, as used in this part, means a compact entered into by two or more States pursuant to the Low-Level Radioactive Waste Policy Amendments Act of 1985.

Management means storage, packaging, or treatment of radioactive waste.

Medical isotope, for the purposes of § 110.42(a)(9), includes molybdenum-99, iodine-131, xenon-133, and other radioactive materials used to produce a radiopharmaceutical for diagnostic or therapeutic procedures or for research and development.

Natural uranium means uranium as found in nature, containing about 0.711 percent of uranium-235, 99.283 percent of uranium-238, and a trace (0.006 percent) of uranium-234.

NPT means the Treaty on the Non-Proliferation of Nuclear Weapons (TIAS 6839).

Non-nuclear weapon State means any State not a nuclear weapon State as defined in the Treaty on the Non-Proliferation of Nuclear Weapons. *Nuclear weapon state* means any State which has manufactured and exploded a nuclear weapon or other nuclear explosive device prior to January 1, 1967 (China, France, Russia, United Kingdom, United States).

Non-Proliferation Act means the Nuclear Non-Proliferation Act of 1978 (Pub. L. 95–242).

NRC Public Document Room means the facility at One White Flint North, 11555 Rockville Pike (first floor), Rockville, Maryland, where certain public records of the NRC that were made available for public inspection in paper or microfiche prior to the implementation of the NRC Agencywide Documents Access and Management System, commonly referred to as ADAMS, will remain available for public inspection. It is also the place where NRC makes computer terminals available to access the Publicly Available Records System (PARS) component of ADAMS on the NRC Web site, *http://www.nrc.gov*, and where copies can be viewed or ordered for a fee as set forth in § 9.35 of this chapter. The facility is staffed with reference librarians to assist the public in identifying and locating documents and in using the NRC Website and ADAMS. The NRC Public Document Room is open from 7:45 a.m. to 4:15 p.m., Monday through Friday, except on Federal holidays. Reference service and access to documents may also be requested by telephone (301–415–4737 or 800–397–4209) between 8:00 a.m. and 4:00 p.m., or by e-mail (*PDR.Resource@nrc.gov*), facsimile (301–415–3548), or letter (NRC Public Document Room, One White Flint North, 11555 Rockville Pike (first floor), Rockville, Maryland 20852–2738).

NRC records means any documentary material made by, in the possession of, or under the control of the Commission under Federal law or in connection with the transaction of public business as evidence of any of the Commission's activities.

NRC Web site, *http://www.nrc.gov*, is the Internet uniform resource locator name for the Internet address of the Web site where NRC will ordinarily make available its public records for inspection.

Nuclear grade graphite for nuclear end use means graphite having a purity level better than (*i.e.*, less than) 5 parts per million boron equivalent, as measured according to ASTM standard C1233–98 and intended for use in a nuclear reactor. (Nuclear grade graphite for non-nuclear end use is regulated by the Department of Commerce.)

Nuclear reactor means an apparatus, other than an atomic weapon or nuclear explosive device, designed or used to sustain nuclear fission in a self-supporting chain reaction.

Nuclear reactor internals means the major structures within a reactor vessel that have one or more functions such as supporting the core, maintaining fuel alignment, directing primary coolant flow, providing radiation shields for the reactor vessel, and guiding in-core instrumentation.

Nuclear Referral List (NRL) means the nuclear-related, dual-use commodities on the Commerce Control List that are subject to the nuclear non-proliferation export licensing controls of the Department of Commerce. They are contained in 15 CFR part 774 of the Department of Commerce's Export Administration Regulations and are designated by the symbol (NP) as the reason for control.

Nuclear Suppliers Group (NSG) is a group of nuclear supplier countries which seeks to contribute to the non-proliferation of nuclear weapons through the implementation of Guidelines for nuclear exports and nuclear-related exports.

Obligations means the commitments undertaken by the U.S. Government or by foreign governments or groups of nations with respect to imports or exports of nuclear material (except byproduct material) and equipment listed in §§ 110.8 and 110.9. Imports and exports of material or equipment subject to these commitments involve conditions placed on the transfer of the material or equipment, such as peaceful end-use assurances, prior consent for retransfer, and exchanges of information on the import or export. The U.S. Government informs the licensee of obligations attached to material or equipment being imported into the United States and approves changes to those obligations.

Packaging means one or more receptacles and wrappers and their contents, excluding any special nuclear material, source material or byproduct material, but including absorbent material, spacing structures, thermal insulation, radiation shielding, devices for cooling

and for absorbing mechanical shock, external fittings, neutron moderators, nonfissile neutron absorbers and other supplementary equipment.

Participant means a person, identified in a hearing notice or other Commission order, who takes part in a hearing conducted by the Commission under this part, including any person to whom the Commission grants a hearing or leave to intervene in an export or import licensing hearing, either as a matter of right or as a matter of discretion.

Particle accelerator means any machine capable of accelerating electrons, protons, deuterons, or other charged particles in a vacuum and of discharging the resultant particulate or other radiation into a medium at energies usually in excess of 1 megaelectron volt. For purposes of this definition, ''accelerator'' is an equivalent term.

Person means any individual, corporation, partnership, firm, association, trust, estate, public or private institution, group, Government agency, other than the Commission or the Department of Energy, except that the Department of Energy shall be considered a person within the meaning of the regulations in this part to the extent that its activities are subject to the licensing and related regulatory authority of the Commission pursuant to section 111 of the Atomic Energy Act; any State or political subdivision of, or any political entity within a State, any foreign government or nation or any political subdivision of any such government or nation, or other entity; and any legal successor, representative, agent, or agency of the foregoing.

Physical security or *Physical protection* means measures to reasonably ensure that source or special nuclear material will only be used for authorized purposes and to prevent theft or sabotage.

Production facility means any nuclear reactor or plant specially designed or used to produce special nuclear material through the irradiation of source material or special nuclear material, the chemical reprocessing of irradiated source or special nuclear material, or the separation of isotopes, other than a uranium enrichment facility for purposes of import.

Public health and safety means the public health and safety of the United States.

Radioactive material means source, byproduct, or special nuclear material.

Radioactive waste, for the purposes of this part, means any material that contains or is contaminated with source, byproduct, or special nuclear material that by its possession would require a specific radioactive material license in accordance with this Chapter and is imported or exported for the purposes of disposal in a land disposal facility as defined in 10 CFR part 61, a disposal area as defined in Appendix A to 10 CFR part 40, or an equivalent facility; or recycling, waste treatment or other waste management process that generates radioactive material for disposal in a land disposal facility as defined in 10 CFR part 61, a disposal area as defined in Appendix A to 10 CFR part 40, or an equivalent facility. Radioactive waste does not include radioactive material that is—

(1) Of U.S. origin and contained in a sealed source, or device containing a sealed source, that is being returned to a manufacturer, distributor or other entity which is authorized to receive and possess the sealed source or the device containing a sealed source;

(2) A contaminant on any non-radioactive material (including service tools and protective clothing) used in a nuclear facility (an NRC- or Agreement State-licensed facility (or equivalent facility) or activity authorized to possess or use radioactive material), if the material is being shipped solely for recovery and beneficial reuse of the non-radioactive material in a nuclear facility and not for waste management purposes or disposal;

(3) Exempted from regulation by the Nuclear Regulatory Commission or equivalent Agreement State regulations;

(4) Generated or used in a U.S. Government waste research and development testing program under international arrangements;

(5) Being returned by or for the U.S. Government or military to a facility that is authorized to possess the material; or

(6) Imported solely for the purposes of recycling and not for waste management or disposal where there is a market for the recycled material and evidence of a contract or business agreement can be produced upon request by the NRC.

NOTE: The definition of *radioactive waste* in this part does not include spent or irradiated fuel.

Radiopharmaceutical, for the purposes of § 110.42(a)(9), means a radioactive isotope that contains byproduct material combined with chemical or biological material and is designed to accumulate temporarily in a part of the body for therapeutic purposes or for enabling the production of a useful image for use in a diagnosis of a medical condition.

Recipient country, for the purposes of § 110.42(a)(9), means Canada, Belgium, France, Germany, and the Netherlands.

Restricted destinations means countries that are listed in § 110.29 based on recommendations from the Executive Branch. These countries may receive exports of certain materials and quantities under a general license, but some exports to restricted destinations will require issuance of a specific license by the NRC including Executive Branch review pursuant to § 110.41.

Retransfer means the transport from one foreign country to another of nuclear equipment or nuclear material previously exported from the United States, or of special nuclear material produced through the use of source material or special nuclear material previously exported from the United States.

Sealed source means any special nuclear material or byproduct material encased in a capsule designed to prevent leakage or escape of that nuclear material.

Secretary means the Secretary of the Commission.

Source material means:

(1) Natural or depleted uranium, or thorium, other than special nuclear material; or

(2) Ores that contain by weight 0.05 percent or more of uranium, thorium or depleted uranium.

Special nuclear material means plutonium, uranium-233, or uranium enriched above 0.711 percent by weight in the isotope uranium-235.

Specific activity means the radioactivity of a radionuclide per unit mass of that nuclide, expressed in the SI unit of terabecquerels per gram (TBq/g). Values of specific activity are found in Appendix A to part 71 of this chapter.

Specific license means an export or import license document issued to a named person and authorizing the export or import of specified nuclear equipment or materials based upon the review and approval of an NRC Form 7 application filed pursuant to this part and other related submittals in support of the application.

Storage means the temporary holding of radioactive material.

Target means material subjected to irradiation in an accelerator or nuclear reactor to induce a reaction or produce nuclear material.

Transfer means the transfer of possession from one person to another person.

Transport means the physical movement of material from one location to another.

Treatment means any method, technique, or process, including storage for radioactive decay, designed to change the physical, chemical or biological characteristics or composition of any radioactive material.

Tritium means not only tritium but also includes compounds and mixtures containing tritium in which the ratio of tritium to hydrogen by atoms exceeds one part in 1,000.

United States, when used in a geographical sense, includes Puerto Rico and all territories and possessions of the United States.

Uranium enrichment facility means:

(1) Any facility used for separating the isotopes of uranium or enriching uranium in the isotope 235, except laboratory scale facilities designed or used for experimental or analytical purposes only; or

(2) Any equipment or device, or important component part especially designed for such equipment or device, capable of separating the isotopes of uranium or enriching uranium in the isotope 235.

Utilization facility means:

(1) Any nuclear reactor, other than one that is a production facility and

(2) Any of the following major components of a nuclear reactor:

(i) Reactor pressure vessel (designed to contain the core of a nuclear reactor);

(ii) Reactor primary coolant pump or circulator;

(iii) ''On-line'' reactor fuel charging and discharging machine; and

(iv) Complete reactor control rod system.

(3) A utilization facility does not include the steam turbine generator portion of a nuclear power plant.

[43 FR 21691, May 19, 1978]

EDITORIAL NOTE: For FEDERAL REGISTER citations affecting § 110.2, see the List of CFR Sections Affected, which appears in the Finding Aids section of the printed volume and at *www.govinfo.gov*.

§ 110.3 Interpretations.

Except as authorized by the Commission in writing, no interpretation of the meaning of the regulations in this part other than a written interpretation by the Commission's General Counsel is binding upon the Commission.

§ 110.4 Communications.

Except where otherwise specified in this part, all communications and reports concerning the regulations in this part should be addressed to the Deputy Director of the NRC's Office of International Programs, either by telephone to 301-287-9057; by mail to the U.S. Nuclear Regulatory Commission, Washington, DC 20555–0001; by hand delivery to the NRC's offices at 11555 Rockville Pike, Rockville, Maryland; or, where practicable, by electronic submission, for example, via Electronic Information Exchange, or CD-ROM. Electronic submissions must be made in a manner that enables the NRC to receive, read, authenticate, distribute, and archive the submission, and process and retrieve it a single page at a time. Detailed guidance on making electronic submissions can be obtained by visiting the NRC's Web site at *http://www.nrc.gov/site-help/e-submittals.html;* by e-mail to *MSHD.Resource@nrc.gov;* or by writing the Office of the Chief Information Officer, U.S. Nuclear Regulatory Commission, Washington, DC 20555–0001. The guidance discusses, among other topics, the formats the NRC can accept, the use of electronic signatures, and the treatment of nonpublic information.

[68 FR 58824, Oct. 10, 2003, as amended at 74 FR 62686, Dec. 1, 2009; 80 FR 74982, Dec. 1, 2015; 83 FR 58466, Nov. 20, 2018]

§ 110.5 Licensing requirements.

Except as provided under subpart B of this part, no person may export any nuclear equipment or material listed in § 110.8 and § 110.9, or import any nuclear equipment or material listed in § 110.9a, unless authorized by a general or specific license issued under this part.

[56 FR 24684, May 31, 1991, as amended at 58 FR 13002, Mar. 9, 1993]

§ 110.6 Retransfers.

(a) Retransfer of any nuclear equipment or material listed in §§ 110.8 and 110.9 (except byproduct material), including special nuclear material produced through the use of equipment, source material, or special nuclear material bearing obligations to the United States pursuant to an agreement for cooperation, requires authorization by the Department of Energy, unless the export to the new destination is authorized by the NRC under a specific or general license or an exemption from licensing requirements. See definition of ''obligations'' in § 110.2.

(b) Requests for authority to retransfer are processed by the Department of Energy, National Nuclear Security Administration, Office of Nonproliferation and Arms Control, Washington, DC 20585.

[75 FR 44087, July 28, 2010, as amended at 83 FR 58466, Nov. 20, 2018]

§ 110.7 Information collection requirements: OMB approval.

(a) The Nuclear Regulatory Commission has submitted the information collection requirements contained in this part to the Office of Management and Budget (OMB) for approval as required by the Paperwork Reduction Act (44 U.S.C. 3501 *et seq.*). The NRC

may not conduct or sponsor, and a person is not required to respond to, a collection of information unless it displays a currently valid OMB control number. OMB has approved the information collection requirements contained in this part under control numbers 3150–0036.

(b) The approved information requirements contained in this part appear in §§ 110.7a, 110.10, 110.27, 110.32, 110.50, 110.52, 110.53, and 110.54.

(c) This part contains information collection requirements in addition to those approved under the control number specified in paragraph (a) of this section. The information collection requirements contained in §§ 110.19, 110.20, 110.21, 110.22, 110.23, 110.31, 110.32, and 110.51, and NRC Form 7 are approved under control number 3150–0027.

[62 FR 52190, Oct. 6, 1997, as amended at 65 FR 70290, Nov. 22, 2000; 67 FR 67101, Nov. 4, 2002; 71 FR 19104, Apr. 13, 2006; 75 FR 44087, July 28, 2010; 76 FR 72087, Nov. 22, 2011; 85 FR 65664, Oct. 16, 2020]

§ 110.7a Completeness and accuracy of information.

(a) Information provided to the Commission by an applicant for a license or by a licensee or information required by statute or by the Commission's regulations, orders, or license conditions to be maintained by the applicant or the licensee shall be complete and accurate in all material respects.

(b) Each licensee or applicant for a license shall notify the Commission of information identified by the applicant or licensee as having, for the regulated activity, a significant implication for public health and safety or common defense and security. An applicant or licensee violates this paragraph if the applicant or licensee fails to notify the Commission of information that the applicant or licensee has identified as having a significant implication for public health and safety or common defense and security. Notification shall be provided to the Administrator of the appropriate Regional Office within two working days of identifying the information. This requirement is not applicable to information which is already required to be provided to the Commission by other reporting or updating requirements.

[52 FR 49374, Dec. 31, 1987, as amended at 75 FR 44087, July 28, 2010]

§ 110.7b Deliberate misconduct.

(a) Any licensee, applicant for a license, employee of a licensee or applicant; or any contractor (including a supplier or consultant), subcontractor, employee of a contractor or subcontractor of any licensee or applicant for a license, who knowingly provides to any licensee, applicant, contractor, or subcontractor, any components, equipment, materials, or other goods or services that relate to a licensee's or applicant's activities in this part, may not:

(1) Engage in deliberate misconduct that causes or would have caused, if not detected, a licensee or applicant to be in violation of any rule, regulation, or order; or any term, condition, or limitation of any license issued by the Commission; or

(2) Deliberately submit to the NRC, a licensee, an applicant, or a licensee's or applicant's contractor or subcontractor, information that the person submitting the information knows to be incomplete or inaccurate in some respect material to the NRC.

(b) A person who violates paragraph (a)(1) or (a)(2) of this section may be subject to enforcement action in accordance with the procedures in 10 CFR part 2, subpart B.

(c) For the purposes of paragraph (a)(1) of this section, deliberate misconduct by a person means an intentional act or omission that the person knows:

(1) Would cause a licensee or applicant to be in violation of any rule, regulation, or order; or any term, condition, or limitation, of any license issued by the Commission; or

(2) Constitutes a violation of a requirement, procedure, instruction, contract, purchase order, or policy of a licensee, applicant, contractor, or subcontractor.

[63 FR 1900, Jan. 13, 1998]

§ 110.8 List of nuclear facilities and equipment under NRC export licensing authority.

(a) Nuclear reactors and especially designed or prepared equipment and components for nuclear reactors. (See Appendix A to this part.)

(b) Plants for the separation of isotopes of uranium (source material or special nuclear material) including gas centrifuge plants, gaseous diffusion plants, aerodynamic enrichment plants, chemical exchange or ion exchange enrichment plants, laser based enrichment plants, plasma separation enrichment plants, electromagnetic enrichment plants, and especially designed or prepared equipment, other than analytical instruments, for the separation of isotopes of uranium. (See appendices to this part for lists of: gas centrifuge equipment—Appendix B; gaseous diffusion equipment—Appendix C; aerodynamic enrichment equipment—Appendix D; chemical exchange or ion exchange enrichment equipment—Appendix E; laser based enrichment equipment—Appendix F; plasma separation enrichment equipment—Appendix G; and electromagnetic enrichment equipment—Appendix H.)

(c) Plants for the separation of the isotopes of lithium and especially designed or prepared assemblies and components for these plants. (See Appendix N to this part.)

(d) Plants for the reprocessing of irradiated nuclear reactor fuel elements and especially designed or prepared assemblies and components for these plants. (See Appendix I to this part.)

(e) Plants for the fabrication of nuclear reactor fuel elements and especially designed or prepared assemblies and components for these plants. (See Appendix O to this part.)

(f) Plants for the conversion of uranium and plutonium and especially designed or prepared assemblies and components for these plants. (See Appendix J to this part.)

(g) Plants for the production, separation, or purification of heavy water, deuterium, and deuterium compounds and especially designed or prepared assemblies and components for these plants. (See Appendix K to this part.)

(h) Plants for the production of special nuclear material using accelerator-driven subcritical assembly systems capable of continuous operation above 5 MW thermal.

(i) Other nuclear-related commodities are under the export licensing authority of the Department of Commerce.

[61 FR 35602, July 8, 1996, as amended at 65 FR 70290, Nov. 22, 2000; 86 FR 43404, Aug. 9, 2021]

§ 110.9 List of Nuclear Material under NRC export licensing authority.

(a) Special Nuclear Material.

(b) Source Material.

(c) Byproduct Material.

(d) Deuterium for nuclear end use.

(e) Nuclear grade graphite for nuclear end use.

[55 FR 30450, July 26, 1990, as amended at 70 FR 41939, July 21, 2005; 86 FR 55479, Oct. 6, 2021]

§ 110.9a List of nuclear equipment and material under NRC import licensing authority.

(a) Production and utilization facilities.

(b) Special nuclear material.

(c) Source material.

(d) Byproduct material.

[49 FR 47198, Dec. 3, 1984. Redesignated at 55 FR 30450, July 26, 1990, and amended at 57 FR 18393, Apr. 30, 1992; 58 FR 13003, Mar. 9, 1993]

Subpart B—Exemptions

§ 110.10 General.

(a) In response to a request or on its own initiative, the Commission may grant an exemption from the regulations in this part, if it determines that the exemption:

(1) Is authorized by law;

(2) Is not inimical to the common defense and security; and

(3) Does not constitute an unreasonable risk to the public health and safety.

(b) An exemption from statutory licensing requirements, as authorized by sections 57d, 62, and 81 of the Atomic Energy Act, will be granted only after coordination with the Executive Branch.

(c) The granting of an exemption does not relieve any person from complying with the regulations of other

U.S. Federal and/or State government agencies applicable to exports or imports under their authority.

[49 FR 47198, Dec. 3, 1984, as amended at 58 FR 13003, Mar. 9, 1993; 65 FR 70290, Nov. 22, 2000; 75 FR 44087, July 28, 2010]

§ 110.11 Export of IAEA safeguards samples.

(a) A person is exempt from the requirements for a license to export special nuclear, source, and byproduct material set forth in sections 53, 54d, 64, 81 and 82 of the Atomic Energy Act and from the regulations in this part to the extent that the person exports special nuclear, source, or byproduct material in IAEA safeguards samples. The samples must be exported in accordance with § 75.8 of this chapter, or a comparable U.S. Department of Energy order, and:

(1) For special nuclear material, be in quantities not exceeding a combined total of 100 grams of contained plutonium, uranium-233, and uranium-235 per facility per year;

(2) For source material, be in quantities not exceeding 5 kilograms per facility per year; and

(3) For byproduct material, be in quantities not exceeding the values in § 30.71 of this chapter per shipment.

(b) This exemption does not relieve any person from complying with parts 71 or 73 of this chapter or any Commission order under section 201(a) of the Energy Reorganization Act of 1974 (42 U.S.C. 5841(a)).

[77 FR 27114, May 9, 2012]

Subpart C—Licenses

SOURCE: 49 FR 47198, Dec. 3, 1984, unless otherwise noted.

§ 110.19 Types of licenses.

Licenses for the export and import of nuclear equipment and material in this part consist of general licenses and specific licenses. A general license is effective without the filing of an application with the Commission or the issuance of licensing documents to a particular person. A specific license is issued to a named person and is effective upon approval by the Commission of an application filed pursuant to the regulations in this part and issuance of licensing documents to the applicant.

[75 FR 44087, July 28, 2010]

§ 110.20 General license information.

(a) A person may use an NRC general license as authority to export or import nuclear equipment or material, if the nuclear equipment or material to be exported or imported is covered by the NRC general licenses described in §§ 110.21 through 110.27. If an export or import is not covered by the NRC general licenses described in §§ 110.21 through 110.27, a person must file an application with the Commission for a specific license in accordance with §§ 110.31 through 110.32.

(b) In response to a petition or on its own initiative, the Commission may issue a general license for export or import if it determines that any exports or imports made under the general license will not be inimical to the common defense and security or constitute an unreasonable risk to the public health and safety and otherwise meet applicable statutory requirements. A general license is issued as a regulation after a rulemaking proceeding under subpart K of this part. Issuance of a general license is coordinated with the Executive Branch.

(c) A general license does not relieve a person from complying with the regulations of other Government agencies applicable to exports or imports under their authority.

(d) A general license for export may not be used if the exporter knows, or has reason to believe, that the material will be used in any illegal activity or any activity related to isotope separation, chemical reprocessing, heavy water production or the fabrication of nuclear fuel containing plutonium, unless these activities are generically authorized under an appropriate agreement for cooperation.

(e) A person who uses an NRC general license as the authority to export or import may cite on the shipping documents the section of this part which authorizes the described export or import under general license, as a means of expediting U.S. Customs and Border Protection's processing of the shipment.

(f) As specified in §§ 110.21 through 110.26, 110.28, 110.29, and 110.30 only certain countries are eligible recipients of equipment or material under NRC general licenses to export. The Commission will closely monitor these countries and may at any time remove a country from a general license in response to significant adverse developments in the country involved. A key factor in this regard is the nonproliferation credentials of the importing country.

[49 FR 47198, Dec. 3, 1984, as amended at 58 FR 13003, Mar. 9, 1993; 59 FR 48997, Sept. 26, 1994; 60 FR 37563, July 21, 1995; 75 FR 44087, July 28, 2010; 86 FR 43404, Aug. 9, 2021]

§ 110.21 General license for the export of special nuclear material.

(a) Except as provided in paragraph (d) of this section, a general license is issued to any person to export the following to any country not listed in § 110.28:

(1) Low-enriched uranium as residual contamination (17.5 parts per million or less) in any item or substance.

(2) Plutonium containing 80 percent or more by weight of plutonium-238 in cardiac pacemakers.

(3) Special nuclear material, other than plutonium-236 and plutonium-238, in sensing components in instruments, if no more than 3 grams of enriched uranium or 0.1 gram of plutonium or uranium-233 are contained in each sensing component.

(4) Plutonium–236 and plutonium–238 when contained in a device, or a source for use in a device, in quantities of less than 3.7×10^{-3} TBq (100 millicuries) of alpha activity (189 micrograms plutonium–236, 5.88 milligrams plutonium–238) per device or source.

(b) Except as provided in paragraph (d) of this section, a general license is issued to any person to export the following to any country not listed in § 110.28 or § 110.29:

(1) Special nuclear material, other than plutonium-236 and plutonium-238, in individual shipments of 0.001 effective kilogram or less (e.g., 1.0 gram of plutonium, uranium–233 or uranium–235, or 10 kilograms of 1 percent enriched uranium), not to exceed 0.1 effective kilogram per calendar year to any one country.

(2) Special nuclear material in fuel elements as replacements for damaged or defective unirradiated fuel elements previously exported under a specific license, subject to the same terms as the original export license and the condition that the replaced fuel elements must be returned to the United States within a reasonable time period.

(3) Uranium, enriched to less than 20 percent in uranium–235, in the form of uranium hexafluoride (UF6) heels in cylinders being returned to suppliers in EURATOM or the United Kingdom.

(c) Except as provided in paragraph (d) of this section, a general license is issued to any person to export plutonium-236 or plutonium-238 to any country listed in § 110.30 in individual shipments of 1 gram or less, not to exceed 100 grams per calendar year to any one country.

(d) The general licenses in paragraphs (a), (b), and (c) of this section do not authorize the export of special nuclear material in radioactive waste.

[49 FR 47198, Dec. 3, 1984, as amended at 58 FR 13003, Mar. 9, 1993; 59 FR 48997, Sept. 26, 1994; 60 FR 37563, July 21, 1995; 65 FR 70290, Nov. 22, 2000; 70 FR 46066, Aug. 9, 2005; 75 FR 44087, July 28, 2010; 85 FR 86795, Dec. 31, 2020]

§ 110.22 General license for the export of source material.

(a) Except as provided in paragraph (e) of this section, a general license is issued to any person to export the following to any country not listed in § 110.28:

(1) Uranium or thorium, other than uranium–230, uranium–232, thorium–227, and thorium–228, in any substance in concentrations of less than 0.05 percent by weight.

(2) Thorium, other than thorium–227 and thorium–228, in incandescent gas mantles or in alloys in concentrations of 5 percent or less.

(3) Thorium–227, thorium–228, uranium–230, and uranium–232 when contained in a device, or a source for use in a device, in quantities of less than 3.7×10^{-3} TBq (100 millicuries) of alpha activity (3.12 micrograms thorium-227, 122 micrograms thorium-228, 3.7 micrograms uranium–230, 4.7 milligrams uranium-232) per device or source.

(b) Except as provided in paragraph (e) of this section, a general license is issued to any person to export uranium or thorium, other than uranium-230, uranium-232, thorium-227, or thorium-228, in individual shipments of 10 kilograms or less to any country not listed in § 110.28 or § 110.29, not to exceed 1,000 kilograms per calendar year to any one country or 500 kilograms per calendar year to any one country when the uranium or thorium is Canadian-obligated.

(c) Except as provided in paragraph (e) of this section, a general license is issued to any person to export uranium or thorium, other than uranium–230, uranium–232, thorium–227, or thorium–228, in individual shipments of 1 kilogram or less to any country listed in § 110.29, not to exceed 100 kilograms per calendar year to any one country.

(d) Except as provided in paragraph (e) of this section, a general license is issued to any person to export uranium–230, uranium–232, thorium–227, or thorium–228 in individual shipments of 10 kilograms or less to any country listed in § 110.30, not to exceed 1,000 kilograms per calendar year to any one country or 500 kilograms per calendar year to any one country when the uranium or thorium is Canadian-obligated.

(e) Paragraphs (a), (b), (c), and (d) of this section do not authorize the export under general license of source material in radioactive waste.

[75 FR 44088, July 28, 2010, as amended at 77 FR 27114, May 9, 2012]

§ 110.23 General license for the export of byproduct material.

(a) A general license is issued to any person to export byproduct material (see Appendix L to this part) to any country not listed in § 110.28 and subject to the following limitations:

(1) The general license in this section does not authorize the export of byproduct material in the form of radioactive waste.

(2) The general license in this section does not authorize the export of the following radionuclides:

Americium–242m
Californium–249
Californium–251
Curium–245
Curium–247

(3) For byproduct materials listed in Table 1 of Appendix P to this part, individual shipments under a general license for export must be less than the terabecquerel (TBq) values specified in Category 2 of Table 1 unless a more restrictive requirement applies.

(4) The general license authorizes exports of the following radionuclides when contained in a device, or a source for use in a device, in quantities less than 3.7×10^{-3} TBq (100 millicuries) of alpha activity per device or source, unless the export is to a country listed in § 110.30:

Actinium–225
Actinium–227
Californium–248
Californium–250
Californium–252
Californium–253
Californium–254
Curium–240
Curium–241
Curium–242
Curium–243
Curium–244
Einsteinium–252
Einsteinium–253
Einsteinium–254
Einsteinium–255
Fermium–257
Gadolinium–148
Mendelevium–258
Neptunium–235
Polonium–208
Polonium–209
Polonium–210
Radium–223

(5)(i) For americium–241, exports under the general license to a country listed in § 110.29 must not exceed 3.7×10^{-2} TBq (one curie) per shipment.

(ii) For americium–241, exports under the general license to a country listed in § 110.29 that exceed 3.7×10^{-2} TBq (one curie) per shipment, must be contained in industrial process control equipment or petroleum exploration equipment in quantities not exceeding 0.60 TBq (16 curies) per device and not exceeding 7.4 TBq/calendar year (200 curies/calendar year) to any one country.

(iii) All exports of americium are subject to the reporting requirements listed in § 110.54(b).

(6) For neptunium–235 and –237, exports under the general license must not exceed one gram for individual

shipment and must not exceed a cumulative total of 10 grams per calendar year to any one country. All exports of neptunium are subject to the reporting requirements listed in § 110.54(b).

(7) For polonium–210, exports under the general license, when contained in static eliminators, must not exceed 3.7 TBq (100 curies) per individual shipment.

(8)(i) For tritium in any dispersed form (e.g., luminescent light sources and paint, accelerator targets, calibration standards, labeled compounds), exports under the general license must not exceed 0.37 TBq (10 curies (1.03 milligrams)) per item, not to exceed 37 TBq (1,000 curies (103 milligrams)) per shipment, or 370 TBq (10,000 curies (1.03 grams)) per calendar year to any one country.

(ii) For tritium in any dispersed form (e.g., luminescent light sources and paint, accelerator targets, calibration standards, labeled compounds), exports under the general license to the countries listed in § 110.30 must not exceed the quantity of 1.48 TBq (40 curies (4.12 milligrams)) per item, not to exceed 37 TBq (1,000 curies (103 milligrams)) per shipment or 370 TBq (10,000 curies (1.03 grams)) per calendar year to any one country.

(iii) For tritium in luminescent safety devices installed in an aircraft, exports under the general license must not exceed 1.48 TBq (40 curies (4.12 milligrams)) per light source.

(iv) The general license in this section does not authorize the export of tritium for recovery or recycle purposes.

(b) [Reserved]

[75 FR 44088, July 28, 2010, as amended at 82 FR 52826, Nov. 15, 2017]

§ 110.24 General license for the export of deuterium for nuclear end use.

(a) A general license is issued to any person to export to any country not listed in § 110.28 or § 110.29:

(1) Deuterium and deuterium compounds (other than heavy water) for nuclear end use in individual shipments of 10 kilograms or less, not to exceed 200 kilograms per calendar year to any one country; and

(2) Heavy water for nuclear end use in individual shipments of 50 kilograms or less, not to exceed 1,000 kilograms per calendar year to any one country.

(b) A general license is issued to any person to export to any country listed in § 110.29:

(1) Deuterium and deuterium compounds (other than heavy water) for nuclear end use in individual shipments of 1 kilogram or less, not to exceed 5 kilograms per calendar year to any one country listed in § 110.29; and

(2) Heavy water for nuclear end use in individual shipment of 5 kilograms or less, not to exceed 25 kilograms per calendar year to any one country listed in § 110.29.

[86 FR 55479, Oct. 6, 2021]

§ 110.25 [Reserved]

§ 110.26 General license for the export of nuclear reactor components.

(a) A general license is issued to any person to export to a destination listed in paragraph (b) of this section any nuclear reactor component of U.S. origin described in paragraphs (5) through (11) of appendix A to this part if—

(1) The component will be used in a light or heavy water-moderated power or research reactor; or

(2) The component is in semi-fabricated form and will be undergoing final fabrication or repair in those countries for either subsequent return to the United States for use in a nuclear power or research reactor in the United States or in one of the destinations listed in paragraph (b) of this section.

(b) The export of nuclear reactor components under the general license established in paragraph (a) of this section is approved to the following destinations:

Austria	Ireland
Belgium	Italy
Bulgaria	Japan
Canada	Latvia
Cyprus	Lithuania
Czech Republic	Luxembourg
Denmark	Malta
Estonia	Netherlands
Finland	New Zealand
France	Philippines
Germany	Poland
Greece	Portugal
Hungary	Republic of Korea
Indonesia	Romania

Slovak Republic	Switzerland
Slovenia	Taiwan
Spain	United Kingdom
Sweden	

(c) This general license does not authorize the export of components, in final or semi-fabricated form, for research reactors capable of continuous operation above 5 MW thermal.

(d) This general license does not authorize the export of essentially complete reactors through piecemeal exports of facility components. When individual exports of components would amount in the aggregate to export of an essentially complete nuclear reactor, a facility export license is required.

(e) All exports under paragraph (a) of this section are subject to the reporting requirements in § 110.54(c).

NOTE TO § 110.26: U.S. Origin includes components produced or finished in the United States, even with non-U.S. content unless the foreign content is obligated by supplier government conditions, such as a prior consent for retransfer condition.

[75 FR 44089, July 28, 2010, as amended at 79 FR 39291, July 10, 2014]

§ 110.27 General license for imports.

(a) Except as provided in paragraphs (b) and (c) of this section, a general license is issued to any person to import byproduct, source, or special nuclear material if the U.S. consignee is authorized to receive and possess the material under the relevant NRC or Agreement State regulations.

(b) The general license in paragraph (a) of this section does not authorize the import of more than 100 kilograms per shipment of source and/or special nuclear material in the form of irradiated fuel.

(c) Paragraph (a) of this section does not authorize the import under a general license of radioactive waste.

(d) A person importing formula quantities of strategic special nuclear material (as defined in § 73.2 of this chapter) under this general license shall provide the notifications required by § 73.27 and § 73.72 of this chapter.

(e) A general license is issued to any person to import the major components of a utilization facility as defined in § 110.2 for end-use at a utilization facility licensed by the Commission.

(f) Importers of radioactive material listed in appendix P to this part must provide the notifications required by § 110.50.

[51 FR 47208, Dec. 31, 1986, as amended at 56 FR 38336, Aug. 13, 1991; 58 FR 13003, Mar. 9, 1993; 60 FR 37564, July 21, 1995; 61 FR 35602, July 8, 1996; 65 FR 70291, Nov. 22, 2000; 68 FR 31589, May 28, 2003; 70 FR 37991, July 1, 2005; 75 FR 44089, July 28, 2010; 77 FR 27114, May 9, 2012]

§ 110.28 Embargoed destinations.

Cuba	North Korea
Iran	Syria
Iraq	Sudan

[58 FR 13003, Mar. 9, 1993, as amended at 61 FR 35602, July 8, 1996; 65 FR 70291, Nov. 22, 2000; 70 FR 29936, May 25, 2005; 72 FR 1427, Jan. 12, 2007]

§ 110.29 Restricted destinations.

Afghanistan	India
Andorra	Israel
Angola	Libya
Burma (Myanmar)	Pakistan
Djibouti	South Sudan

[58 FR 13003, Mar. 9, 1993, as amended at 59 FR 48998, Sept. 26, 1994; 61 FR 35602, July 8, 1996; 70 FR 29936, May 25, 2005; 72 FR 1427, Jan. 12, 2007; 77 FR 11385, Feb. 27, 2012; 78 FR 8361, Feb. 6, 2013]

§ 110.30 Members of the Nuclear Suppliers Group.

Argentina	Latvia
Australia	Lithuania
Austria	Luxembourg
Belarus	Malta
Belgium	Mexico
Brazil	Netherlands
Bulgaria	New Zealand
Canada	Norway
China	Poland
Croatia	Portugal
Cyprus	Republic of Korea
Czech Republic	Romania
Denmark	Russia
Estonia	Serbia
Finland	Slovak Republic
France	Slovenia
Germany	South Africa
Greece	Spain
Hungary	Sweden
Iceland	Switzerland
Ireland	Turkey
Italy	Ukraine
Japan	United Kingdom
Kazakhstan	

[59 FR 48998, Sept. 26, 1994, as amended at 61 FR 35602, July 8, 1996; 65 FR 70291, Nov. 22, 2000; 75 FR 44089, July 28, 2010; 79 FR 39291, July 10, 2014]

§ 110.31 Application for a specific license.

(a) A person shall file an application for a specific license to export or import with the Deputy Director of the NRC's Office of International Programs, using an appropriate method listed in § 110.4.

(b) Applications for an export, import, amendment or renewal licenses or a request for an exemption from a licensing requirement under this part shall be filed on NRC Form 7.

(c) An application for a specific license to export or import or a request for an exemption from a licensing requirement must be accompanied by the appropriate fee in accordance with the fee schedules in § 170.21 and § 170.31 of this chapter. A license application will not be processed unless the specified fee is received.

(d) Each application on NRC Form 7 shall be signed by the applicant or licensee or a person duly authorized to act for and on behalf of the applicant or licensee.

(e) Each person shall provide in the license application, as appropriate, the information specified in § 110.32. The Commission also may require the submission of additional information if necessary to complete its review.

(f) An application may cover multiple shipments and destinations.

(g) The applicant shall withdraw an application when it is no longer needed. The Commission's official files retain all documents related to a withdrawn application.

[75 FR 44089, July 28, 2010]

§ 110.32 Information required in an application for a specific license/NRC Form 7.

(a) Name and address of applicant.

(b) Name and address of any other party, including the supplier of equipment or material, if different from the applicant.

(c) Country of origin of equipment or material, and any other countries that have processed the material prior to its import into the U.S.

NOTE: This is meant to include all obligations attached to the material, according to the definition of *obligations* in § 110.2. Licensees must keep records of obligations attached to material which they own or is in their possession.

(d) Names and addresses of all intermediate and ultimate consignees, other than intermediate consignees performing shipping services only.

(e) Dates of proposed first and last shipments.

(f) Description of the equipment or material including, as appropriate, the following:

(1) Maximum quantity of material in grams or kilograms (terabecquerels or TBq for byproduct material) and its chemical and physical form.

(2) For enriched uranium, the maximum weight percentage of enrichment and maximum weight of contained uranium-235.

(3) For nuclear equipment, the name of the facility and its total dollar value.

(4) For nuclear reactors, the name of the facility, its design power level and its total dollar value.

(5) For proposed exports or imports of radioactive waste, the volume, physical and chemical characteristics, route of transit of shipment, classification (as defined in § 61.55 of this chapter) if imported or exported for direct disposal at part 61 or equivalent Agreement State licensed facility, and ultimate disposition (including forms of management or treatment) of the waste.

(6) For proposed imports of radioactive waste, the industrial or other process responsible for generation of the waste, and the status of the arrangements for disposition, including pertinent documentation of these arrangements.

(7) Description of end use by all consignees in sufficient detail to permit accurate evaluation of the justification for the proposed export or import, including the need for shipment by the dates specified.

(g)(1) For proposed exports of Category 1 quantities of material listed in Table 1 of appendix P to this part, pertinent documentation that the recipient of the material has the necessary authorization under the laws and regulations of the importing country to receive and possess the material.

(2) For proposed exports of Category 2 quantities of material listed in Table 1 of appendix P to this part, pertinent documentation that the recipient of the material has the necessary authorization under the laws and regulations of the importing country to receive and possess the material. This documentation must be provided to the NRC at least 24 hours prior to the shipment.

(3) Pertinent documentation shall consist of a copy of the recipient's authorization to receive and possess the material to be exported or a confirmation from the government of the importing country that the recipient is so authorized. The recipient authorization shall include the following information:

(i) Name of the recipient;

(ii) Recipient location and legal address or principal place of business;

(iii) Relevant radionuclides and radioactivity being imported or that the recipient is authorized to receive and possess;

(iv) Uses, if appropriate; and

(v) The expiration date of the recipient's authorization (if any).

[75 FR 44089, July 28, 2010, as amended at 82 FR 52826, Nov. 15, 2017]

Subpart D—Review of License Applications

§ 110.40 Commission review.

(a) Immediately after receipt of a license application for an export or import requiring a specific license under this part, the Commission will initiate its licensing review and, to the maximum extent feasible, will expeditiously process the application concurrently with any applicable review by the Executive Branch.

(b) The Commissioners shall review a license application for export of the following:

(1) A production or utilization facility.

(2) More than 5 effective kilograms of high-enriched uranium, plutonium or uranium-233.

(3) An export involving assistance to end uses related to isotope separation, chemical reprocessing, heavy water production, advanced reactors, or the fabrication of nuclear fuel containing plutonium, except for exports of source material or low-enriched uranium to EURATOM, the United Kingdom, or Japan for enrichment up to 5 percent in the isotope uranium–235, and those categories of exports which the Commission has approved in advance as constituting permitted incidental assistance.

(4) The initial export to a country since March 10, 1978 of source or special nuclear material for nuclear end use.

(5) An initial export to any country listed in § 110.28 or § 110.29 involving over:

(i) 10 grams of plutonium, uranium-233 or high-enriched uranium;

(ii) 1 effective kilogram of low-enriched uranium;

(iii) 250 kilograms of source material;

(iv) 250 kilograms of heavy water for nuclear end use; or

(v) 37 TBq (1,000 curies) of tritium.

(6) The export of radioactive material listed in Table 1 of Appendix P of this part involving:

(i) Exceptional circumstances in § 110.42(e); or

(ii) Category 1 quantities of material to any country listed in § 110.28.

(c) The Commission will review export and import license applications raising significant policy issues.

(d) If the Commission has not completed action on a license application within 60 days after receipt of the Executive Branch judgment, as provided for in § 110.41, or the license application when an Executive Branch judgment is not required, it will inform the applicant in writing of the reason for delay and, as appropriate, provide follow-up reports.

[75 FR 44090, July 28, 2010, as amended at 85 FR 86795, Dec. 31, 2020; 86 FR 55479, Oct. 6, 2021]

§ 110.41 Executive Branch review.

(a) An application for a license to export the following will be promptly forwarded to the Executive Branch for review:

(1) A production or utilization facility.

(2) More than one effective kilogram of high-enriched uranium or 10 grams of plutonium or uranium–233.

(3) Nuclear grade graphite for nuclear end use.

(4) More than 3.7 TBq (100 Curies) of tritium;

(5) Deuterium for nuclear end use, other than exports of deuterium to Canada;

(6) One kilogram or more of source or special nuclear material to be exported under the US-IAEA Agreement for Cooperation.

(7) An export involving assistance to end uses related to isotope separation, chemical reprocessing, heavy water production, advanced reactors, or the fabrication of nuclear fuel containing plutonium, except for exports of source material or low-enriched uranium to EURATOM, the United Kingdom, or Japan for enrichment up to 5 percent in the isotope uranium–235, and those categories of exports approved in advance by the Executive Branch as constituting permitted incidental assistance.

(8) The initial export of nuclear material or equipment to a foreign reactor.

(9) An export involving radioactive waste.

(10) An export to any country listed in § 110.28 or § 110.29.

(11) An export raising significant policy issues or subject to special limitations as determined by the Commission or the Executive Branch, including exports of radioactive material listed in Table 1 of appendix P to this part involving exceptional circumstances in § 110.42(e).

(b) The Executive Branch will be requested to:

(1) Provide its judgment as to whether the proposed export would be inimical to the common defense and security, along with supporting rationale and information.

(2) Where applicable, confirm that the proposed export would be under the terms of an agreement for cooperation; and

(3) Address the extent to which the export criteria in § 110.42 are met, if applicable, and the extent to which the recipient country or group of countries has adhered to the provisions of any applicable agreement for cooperation.

(c) The Commission may request the Executive Branch to address specific concerns and provide additional data and recommendations as necessary.

[43 FR 21641, May 19, 1978, as amended at 49 FR 47200, Dec. 3, 1984; 58 FR 13004, Mar. 9, 1993; 60 FR 37564, July 21, 1995; 61 FR 35602, July 8, 1996; 70 FR 41939, July 21, 2005; 70 FR 37992, July 1, 2005; 70 FR 46066, Aug. 9, 2005; 75 FR 44090, July 28, 2010; 85 FR 86795, Dec. 31, 2020; 86 FR 55479, Oct. 6, 2021]

§ 110.42 Export licensing criteria.

(a) The review of license applications for export for peaceful nuclear uses of production or utilization facilities[1] or for export for peaceful nuclear uses of special nuclear or source material requiring a specific license under this part is governed by the following criteria:

(1) IAEA safeguards as required by Article III (2) of the NPT will be applied with respect to any such facilities or material proposed to be exported, to any such material or facilities previously exported and subject to the applicable agreement for cooperation, and to any special nuclear material used in or produced through the use thereof.

(2) No such material or facilities proposed to be exported or previously exported and subject to the applicable agreement for cooperation, and no special nuclear material produced through the use of such material or facilities, will be used for any nuclear explosive device or for research on or development of any nuclear explosive device.

(3) Adequate physical security measures will be maintained with respect to such material or facilities proposed to be exported and to any special nuclear material used in or produced through the use thereof. Physical security measures will be deemed adequate if

[1] Export of nuclear reactors, reactor pressure vessels, reactor primary coolant pumps and circulators, ''on-line'' reactor fuel charging and discharging machines, and complete reactor control rod systems, as specified in paragraphs (1) through (4) of appendix A to this part, are subject to the export licensing criteria in § 110.42(a). Exports of nuclear reactor components, as specified in paragraphs (5) through (11) of appendix A to this part, when exported separately from the items described in paragraphs (1) through (4) of appendix A to this part, are subject to the export licensing criteria in § 110.42(b).

such measures provide a level of protection equivalent to that set forth in § 110.44.

(4) No such material or facilities proposed to be exported, and no special nuclear material produced through the use of such material, will be retransferred to the jurisdiction of any other country or group of countries unless the prior approval of the United States is obtained for such retransfer.

(5) No such material proposed to be exported and no special nuclear material produced through the use of such material will be reprocessed, and no irradiated fuel elements containing such material removed from a reactor will be altered in form or content, unless the prior approval of the United States is obtained for such reprocessing or alteration.

(6) With respect to exports of such material or facilities to nonnuclear weapon states, IAEA safeguards will be maintained with respect to all peaceful activities in, under the jurisdiction of, or carried out under the control of such state at the time of export. This criterion will not be applied if the Commission has been notified by the President in writing that failure to approve an export because this criterion has not been met would be seriously prejudicial to the achievement of United States nonproliferation objectives or otherwise jeopardize the common defense and security, in which case the provisions of section 128 of the Atomic Energy Act regarding Congressional review will apply.

(7) The proposed export of a facility or of more than 0.003 effective kilograms of special nuclear material, other than plutonium containing 80 percent or more by weight of plutonium-238, would be under the terms of an agreement for cooperation.

(8) The proposed export is not inimical to the common defense and security and, in the case of facility exports, does not constitute an unreasonable risk to the public health and safety in the United States.

(9)(i) Except as provided in paragraph (a)(9)(ii) of this section, with respect to exports of high-enriched uranium to be used as a fuel or target in a nuclear research or test reactor, the Commission determines that:

(A) There is no alternative nuclear reactor fuel or target enriched to less than 20 percent in the isotope U–235 that can be used in that reactor;

(B) The proposed recipient of the uranium has provided assurances that, whenever an alternative nuclear reactor fuel or target can be used in that reactor, it will use that alternative fuel or target in lieu of highly-enriched uranium; and

(C) The United States Government is actively developing an alternative nuclear reactor fuel or target that can be used in that reactor.

(ii) With regard to a Recipient Country, the Commission may issue a license authorizing the export of high-enriched uranium for medical isotope production, including shipment to and use at intermediate and ultimate consignees, if the Commission determines that:

(A) The Recipient Country that supplies an assurance letter to the United States Government in connection with the consideration by the Commission of the export license application has informed the United States Government that any intermediate consignees and the ultimate consignee specified in the export license application are required to use the high-enriched uranium solely for the production of medical isotopes; and

(B) The high-enriched uranium will be irradiated only in a reactor in the Recipient Country that—

(*1*) Uses an alternative nuclear fuel; or

(*2*) Is the subject of an agreement with the United States Government to convert to an alternative nuclear reactor fuel when alternative nuclear reactor fuel can be used in the reactor.

(iii) A fuel or target ''can be used'' in a nuclear research or test reactor if—

(A) The fuel or target has been qualified by the Reduced Enrichment Research and Test Reactor Program of the Department of Energy; and

(B) Use of the fuel or target will permit the large majority of ongoing and planned experiments and isotope production to be conducted in the reactor without a large percentage increase in the total cost of operating the reactor.

(b) The review of license applications for the export of nuclear equipment,

other than a production or utilization facility, and for deuterium for nuclear end use and nuclear grade graphite for nuclear end use is governed by the following criteria:

(1) IAEA safeguards as required by Article III (2) of the NPT will be applied with respect to such equipment or material.

(2) No such equipment or material will be used for any nuclear explosive device or for research on or development of any nuclear explosive device.

(3) No such equipment or material will be retransferred to the jurisdiction of any other country or group of countries without the prior consent of the United States.

(4) The proposed export is not inimical to the common defense and security.

(c) Except where paragraph (d) is applicable, the review of license applications for export of byproduct material or for export of source material for non-nuclear end uses requiring a specific license under this part is governed by the criterion that the proposed export is not inimical to the common defense and security.

(d) The review of license applications for the export of radioactive waste requiring a specific license under this part is governed by the following criteria:

(1) The proposed export is not inimical to the common defense and security.

(2) The receiving country, after being advised of the information required by § 110.32(f)(5), finds that it has the administrative and technical capacity and regulatory structure to manage and dispose of the waste and consents to the receipt of the radioactive waste. In the case of radioactive waste containing a nuclear material to which paragraph (a) or (b) of this section is applicable, the criteria in this paragraph (d) shall be in addition to the criteria provided in paragraph (a) or (b) of this section.

(e) In making its findings under paragraphs (a)(8) and (c) of this section for proposed exports of radioactive material listed in Appendix P to this part, the NRC shall consider:

(1) Whether the foreign recipient is authorized based on the authorization or confirmation required by § 110.32(g) to receive and possess the material under the laws and regulations of the importing country;

(2) Whether the importing country has the appropriate technical and administrative capability, resources and regulatory structure to manage the material in a safe and secure manner;

(3) For proposed exports of Category 1 amounts of radioactive material listed in Table 1 of Appendix P to this part, whether the government of the importing country provides consent to the United States Government for the import of the material;

(4) In cases where the importing country does not have the technical and administrative capability described in paragraph (e)(2) of this section, and in cases where there is insufficient evidence of the recipient's authorization to receive and possess the material to be exported, described in paragraph (e)(1) of this section, whether exceptional circumstances exist, and if so, whether the export should be licensed in light of those exceptional circumstances and the risks, if any, to the common defense and security of the proposed export;

(5) For proposed exports under exceptional circumstances of Category 1 or Category 2 amounts of radioactive material listed in Table 1 of Appendix P to this part, whether the government of the importing country provides consent to the United States Government for the import of the material;

(6) For proposed exports of radioactive material listed in Table 1 of Appendix P to this part under the exceptional circumstance in which there is a considerable health or medical need as acknowledged by the U.S. Government and the importing country, whether the United States and the importing country have, to the extent practicable, made arrangements for the safe and secure management of the radioactive sources during and at the end of their useful life;

(7) Based upon the available information, whether the foreign recipient has engaged in clandestine or illegal procurement of radioactive material listed in Table 1 of Appendix P to the part;

(8) Based upon available information, whether an import or export authorization for radioactive material listed in Table 1 of Appendix P to this part has been denied to the recipient or importing country, or whether the recipient or importing country has diverted any import or export of radioactive material previously authorized; and

(9) Based upon available information, whether there is a risk of diversion or malicious acts involving radioactive material in Table 1 of Appendix P to this part.

[49 FR 47200, Dec. 3, 1984, as amended at 55 FR 34519, Aug. 23, 1990; 58 FR 13004, Mar. 9, 1993; 58 FR 57964, Oct. 28, 1993; 60 FR 37564, July 21, 1995; 70 FR 37992, July 1, 2005; 70 FR 41939, July 21, 2005; 70 FR 46066, Aug. 9, 2005; 71 FR 20339, Apr. 20, 2006; 71 FR 40003, July 14, 2006; 79 FR 39291, July 10, 2014; 84 FR 63569, Nov. 18, 2019; 86 FR 55479, Oct. 6, 2021]

§ 110.43 Import licensing criteria.

The review of license applications for imports requiring a specific license under this part is governed by the following criteria:

(a) The proposed import is not inimical to the common defense and security.

(b) The proposed import does not constitute an unreasonable risk to the public health and safety.

(c) Any applicable requirements of subpart A of part 51 of this chapter are satisfied.

(d) With respect to the import of radioactive waste, an appropriate facility has agreed to accept and is authorized to possess the waste for management or disposal as confirmed by NRC consultations with, as applicable, the Agreement State in which the facility is located and low-level waste compact commission(s).

[60 FR 37565, July 21, 1995, as amended at 70 FR 37992, July 1, 2005; 75 FR 44090, July 28, 2010]

§ 110.44 Physical security standards.

(a) Physical security measures in recipient countries must provide protection at least comparable to the recommendations in the current version of IAEA publication, ''Nuclear Security Recommendations on Physical Protection of Nuclear Material and Nuclear Facilities'' (INFCIRC/225/Revision 5), January 2011, which is incorporated by reference in this part. This incorporation by reference was approved by the Director of the Office of the Federal Register in accordance with 5 U.S.C. 552(a) and 1 CFR part 51. Notice of any changes made to the material incorporated by reference will be published in the FEDERAL REGISTER. Copies of INFCIRC/225/Revision 5 may be obtained from the Marketing and Sales Unit, Publishing Section, IAEA, Vienna International Centre, P.O. Box 100, 1400 Vienna Austria; Fax: 43 1 2600 29302; telephone: 43 1 2600 22417; email: *sales.publications@iaea.org*; Web site: *http://www.iaea.org/books*. You may inspect a copy at the NRC Library, 11545 Rockville Pike, Rockville, Maryland 20852–2738, telephone: 301–415–4737 or 1–800–397–4209, between 8:30 a.m. and 4:15 p.m.; or at the National Archives and Records Administration (NARA). For information on the availability of this material at NARA, call 202–741–6030, or go to: *http://www.archives.gov/federal-register/cfr/ibr-locations.html*.

(b) Commission determinations on the adequacy of physical security measures are based on:

(1) Receipt by the appropriate U.S. Executive Branch Agency of written assurances from the relevant recipient country government that physical security measures providing protection at least comparable to the recommendations set forth in INFCIRC/225/Revision 5.

(2) Information obtained through country visits, information exchanges, or other sources. Determinations are made on a country-wide basis and are subject to continuing review. Appendix M to this part describes the different categories of nuclear material to which physical security measures are applied.

[75 FR 44090, July 28, 2010, as amended at 79 FR 39291, July 10, 2014]

§ 110.45 Issuance or denial of licenses.

(a) The Commission will issue an export license if it has been notified by the State Department that it is the judgment of the Executive Branch that the proposed export will not be inimical to the common defense and security, and:

(1) Finds, based upon a reasonable judgment of the assurances provided

and other information available to the Federal government, that the applicable criteria in § 110.42, or their equivalent, are met.

(2) Finds that there are no material changed circumstances associated with an export license application (except for byproduct material applications) from those existing at the time of issuance of a prior license to export to the same country, if the prior license was issued under the provisions of paragraph (a)(1) of this section.

(b) The Commission will issue an import license if it finds that:

(1) The proposed import will not be inimical to the common defense and security;

(2) The proposed import will not constitute an unreasonable risk to the public health and safety;

(3) The requirements of subpart A of part 51 of this chapter (to the extent applicable to the proposed import) have been satisfied; and

(4) With respect to a proposed import of radioactive waste, an appropriate facility has agreed to accept and is authorized to posses the waste for management or disposal as confirmed by NRC consultations with, as applicable, the Agreement State(s) in which the facility is located and the low-level waste compact commission(s).

(c) With respect to a proposed import of radioactive material listed in Table 1 of Appendix P to this part:

(1) If the Commission authorizes a proposed import of Category 1 or Category 2 amounts of radioactive material, it will take appropriate steps to ensure that a copy of the recipient authorization, or confirmation by the U.S. Government that the recipient is authorized to receive and possess the source or sources to be exported, is provided to the Government of the exporting country or to the exporting facility.

(2) If the Commission authorizes a proposed import of Category 1 amounts of radioactive material, it will take appropriate steps to ensure that a copy of the consent of the United States Government to the import is provided to the government of the exporting country in cases where it is requested by such government.

(d) If, after receiving the Executive Branch judgment that the issuance of a proposed export license will not be inimical to the common defense and security, the Commission does not issue the proposed license on a timely basis because it is unable to make the statutory determinations required under the Atomic Energy Act, the Commission will publicly issue a decision to that effect and will submit the license application to the President. The Commission's decision will include an explanation of the basis for the decision and any dissenting or separate views. The provisions in this paragraph do not apply to Commission decisions regarding applications for specific licenses to export byproduct material, including radioactive material listed in Table 1 of appendix P to this part, or radioactive waste.

(e) The Commission will deny: (1) Any export license application for which the Executive Branch judgment does not recommend approval; (2) any byproduct material export license application for which the Commission is unable to make the finding in paragraph (a)(1) of this section; or (3) any import license application for which the Commission is unable to make the finding in paragraph (b) of this section. The applicant will be notified in writing of the reason for denial.

[49 FR 47201, Dec. 3, 1984. Redesignated and amended at 60 FR 37565, July 21, 1995; 70 FR 37992, July 1, 2005; 75 FR 44091, July 28, 2010]

§ 110.46 Conduct resulting in termination of nuclear exports.

(a) Except as provided in paragraph (c) of this section, no license will be issued to export nuclear equipment or material, other than byproduct material, to any non-nuclear weapon state that is found by the President to have, after March 10, 1978:

(1) Detonated a nuclear explosive device;

(2) Terminated or abrogated IAEA safeguards;

(3) Materially violated an IAEA safeguards agreement; or

(4) Engaged in activities involving source or special nuclear material and having direct significance for the manufacture or acquisition of nuclear explosive devices, and failed to take steps

which represent sufficient progress toward terminating such activities.

(b) Except as provided in paragraph (c) of this section, no license will be issued to export nuclear equipment or material, other than byproduct material, to any country or group of countries that is found by the President to have, after March 10, 1978:

(1) Materially violated an agreement for cooperation with the United States or the terms of any other agreement under which nuclear equipment or material has been exported;

(2) Assisted, encouraged or induced any non-nuclear weapon state to engage in activities involving source or special nuclear material and having direct significance for the manufacture or acquistion of nuclear explosive devices, and failed to take steps which represent sufficient progress toward terminating such assistance, encouragement or inducement; or

(3) Entered into an agreement for the transfer of reprocessing equipment, materials or technology to the sovereign control of a non-nuclear weapon state, except in connection with an international fuel cycle evaluation in which the United States is a participant or pursuant to an international agreement or understanding to which the United States subscribes.

(c) Under section 129 of the Atomic Energy Act, the President may waive the requirement for the termination of exports to a country described in paragraph (a) or (b) of this section after determining in writing that the cessation of exports would seriously prejudice the achievement of United States nonproliferation objectives or otherwise jeopardize the common defense and security. If the President makes this determination, the Commission will issue licenses to export to that country, if other applicable statutory provisions are met.

[43 FR 21641, May 19, 1978, as amended at 49 FR 47202, Dec. 3, 1984. Redesignated at 60 FR 37565, July 21, 1995]

Subpart E—License Terms and Related Provisions

§ 110.50 Terms.

(a) *General and specific licenses.* (1) Each license is subject to all applicable provisions of the Atomic Energy Act and other applicable law and to all applicable rules, regulations, decisions and orders of the Commission.

(2) Each license is subject to amendment, suspension, revocation or incorporation of separate conditions when required by amendments of the Atomic Energy Act or other applicable law, or by other rules, regulations, decisions or orders issued in accordance with the terms of the Atomic Energy Act or other applicable law.

(3) A licensee authorized to export or import nuclear material is responsible for compliance with applicable requirements of this chapter, unless a domestic licensee of the Commission has assumed that responsibility and the Commission has been so notified.

(4) Each license authorizes export or import only and does not authorize any person to receive title to, acquire, receive, possess, deliver, use, transport or transfer any nuclear equipment or material subject to this part.

(5) Each license issued by the NRC for the export or import of nuclear material authorizes only the export or import of that nuclear material and accompanying packaging, fuel element, hardware, or other associated devices or products.

(6) No nuclear equipment license confers authority to export or import nuclear material.

(7) Each nuclear equipment export license authorizes the export of only those items required for use in the foreign nuclear installation for which the items are intended.

(8) A licensee shall not proceed to export or import and shall notify the Commission promptly if he knows or has reason to believe that the packaging requirements of part 71 of this chapter have not been met.

(b) *Specific licenses.* (1) Each specific license will have an expiration date.

(2) A licensee may export or import only for the purpose(s) and/or end-use(s) stated in the specific export or import license issued by NRC.

(3) Unless a license specifically authorizes the export of certain foreign-obligated nuclear material or equipment, a licensee may not ship such material or equipment until:

(i) The licensee has requested and the Commission has issued an amendment to the license authorizing such shipment; or

(ii) The licensee has given at least 40 days advance notice of the intended shipment in writing to the Deputy Director, Office of International Programs (OIP); and

(iii) The Deputy Director, OIP has:

(A) Obtained confirmation, through either the Department of Energy or State, that the foreign government in question has given its consent to the intended shipment pursuant to its agreement for cooperation with the United States; and

(B) Communicated this in writing to the licensee.

(c) *Advanced notification.* (1) A licensee authorized to export or import the radioactive material listed in Appendix P to this part is responsible for notifying NRC and, in cases of exports, the government of the importing country in advance of each shipment. A list of points of contact in importing countries is available at NRC's Office of International Programs Web site, accessible on the NRC Public Web site at *http://www.nrc.gov*.

(2) The NRC's office responsible for receiving advance notifications for all export and import shipments is the NRC Headquarters Operations Center. Notifications to the NRC Headquarters Operations Center are to be submitted by email (preferred method) or faxed using the contact information specified in appendix A to 10 CFR part 73 of this chapter. In the subject line of the email or on the fax cover page include ''10 CFR 110.50(c) Notification.'' To contact the NRC Operations Center, use the same email address or call the telephone number in appendix A to 10 CFR part 73. For questions or concerns on submitting these advance notifications to the NRC, please contact the Office of International Programs at 301–287–9056.

(3) Notifications may be electronic or in writing on business stationery, and must contain or be accompanied by the information which follows.

(i) For export notifications:

(A) 10 CFR part 110 export license number and expiration date;

(B) Name of the individual and licensee making the notification, address, and telephone number;

(C) Foreign recipient name, address, and end use location(s) (if different than recipient's address);

(D) Radionuclides and activity level in TBq, both for single and aggregate shipments;

(E) Make, model and serial number, for any Category 1 and 2 sealed sources, if available;

(F) End use in the importing country, if known;

(G) Shipment date; and

(H) A copy of the foreign recipient's authorization or confirmation of that authorization from the government of the importing country as required by §110.32(g) unless the authorization has already been provided to the NRC.

(ii) For import notifications:

(A) Name of individual and licensee making the notification, address, and telephone number;

(B) Recipient name, location, and address (if different than above);

(C) Name, location, address, contact name and telephone number for exporting facility;

(D) Radionuclides and activity level in TBq, both for single and aggregate shipments;

(E) Make, model and serial number, radionuclide, and activity level for any Category 1 and 2 sealed sources, if available;

(F) End use in the U.S.;

(G) Shipment date from exporting facility and estimated arrival date at the end use location; and

(H) NRC or Agreement State license number to possess the import in the U.S. and expiration date.

(4) Export notifications must be received by the NRC at least 7 days in advance of each shipment, to the extent practical, but in no case less than 24 hours in advance of each shipment. Import notifications must be received by the NRC at least 7 days in advance of each shipment.

(5) Advance notifications containing the above information must be controlled, handled, and transmitted in accordance with §2.390 of this chapter and other applicable NRC requirements governing protection of sensitive information.

(d) A specific license may be transferred, disposed of or assigned to another person only with the approval of the Commission by license amendment.

[75 FR 44091, July 28, 2010, as amended at 85 FR 65664, Oct. 16, 2020; 86 FR 43404, Aug. 9, 2021]

§ 110.51 Amendment and renewal of licenses.

(a) *Amendments.* (1) Applications for amendment of a specific license shall be filed on NRC Form 7 in accordance with §§ 110.31 and 110.32 and shall specify the respects in which the licensee desires the license to be amended and the grounds for such amendment.

(2) An amendment is not required for:

(i) Changes in monetary value (but not amount or quantity);

(ii) Changes in the names and/or mailing addresses within the same countries of the intermediate or ultimate consignees listed on the license; or

(iii) The addition of intermediate consignees in any of the importing countries specified in the license (for a nuclear equipment license only).

(b) *Renewals.* (1) Applications for renewal of a specific license shall be filed on NRC Form 7 in accordance with §§ 110.31 and 110.32.

(2) If an application to renew a license is submitted 30 days or more before the license expires, the license remains valid until the Commission acts on the renewal application. An expired license is not renewable.

(c) *General.* In considering an application by a licensee to renew or amend a license, the Commission will apply, as appropriate, the same procedures and criteria it uses for initial license applications.

[75 FR 44092, July 28, 2010]

§ 110.52 Revocation, suspension, and modification.

(a) A license may be revoked, suspended, or modified for a condition which would warrant denial of the original license application.

(b) The Commission may require further information from a licensee to determine whether a license should be revoked, suspended, or modified.

(c) Except when the common defense and security or public health and safety requires otherwise, no license will be revoked, suspended, or modified before the licensee is informed in writing of the grounds for such action and afforded the opportunity to reply and be heard under procedures patterned on those in subpart I.

[43 FR 21641, May 19, 1978, as amended at 62 FR 59277, Nov. 3, 1997]

§ 110.53 United States address, records, and inspections.

(a) Each licensee (general or specific) shall have an office in the United States where papers may be served and where records required by the Commission will be maintained.

(b)(1) Each license applicant or licensee (general or specific) shall maintain records concerning his exports or imports. The licensee shall retain these records for five years after each export or import except that byproduct material records must be retained for three years after the date of each export or import shipment.

(2) Records which must be maintained pursuant to this part may be the original or a reproduced copy or microform if such reproduced copy or microform is duly authenticated by authorized personnel and the microform is capable of producing a clear and legible copy after storage for the period specified by Commission regulations. The record may also be stored in electronic media with the capability for producing legible, accurate, and complete records during the required retention period. Records such as letters, drawings, specifications, must include all pertinent information such as stamps, initials, and signatures. The licensee shall maintain adequate safeguards against tampering with and loss of records.

(c) Each licensee shall permit the Commission to inspect his records, premises, and activities pertaining to his exports and imports when necessary to fulfill the requirements of the Atomic Energy Act.

[43 FR 21641, May 19, 1978, as amended at 53 FR 19263, May 27, 1988; 75 FR 44092, July 28, 2010]

§ 110.54 Reporting requirements.

(a)(1) Reports of exports of nuclear facilities and equipment, nuclear grade

graphite for nuclear end use, and deuterium for nuclear end use shipped during the previous quarter must be submitted by licensees making exports under the general license or specific license of this part by January 15, April 15, July 15, and October 15 of each year on DOC/NRC Forms AP–M or AP–13, and associated forms. The reports must contain information on all nuclear facilities, equipment, and non-nuclear materials (nuclear grade graphite for nuclear end use and deuterium for nuclear end use) listed in Annex II of the Additional Protocol.

(2) These required reports must be sent via facsimile to (202) 482–1731, emailed to *aprp@bis.doc.gov*, or hand-delivered or submitted by courier to the Bureau of Industry and Security, in hard copy, to the following address: Treaty Compliance Division, Bureau of Industry and Security, U.S. Department of Commerce, Attn: AP Reports, 14th Street and Pennsylvania Avenue, NW., Room 4515, Washington, DC 20230. Telephone: (202) 482–1001.

(b) Persons making exports under the general license established by § 110.23(a) or under a specific license shall submit by February 1 of each year one copy of a report of all americium and neptunium shipments during the previous calendar year. This report shall be submitted to the Deputy Director, Office of International Programs at the address provided in § 110.4. The report must include:

(1) A description of the material, including quantity in TBq and gram;

(2) Approximate shipment dates; and

(3) A list of recipient countries, end users, and intended use keyed to the items shipped.

(c) Persons making exports under the general license established by § 110.26(a) shall submit by February 1 of each year one copy of a report of all components shipped during the previous calendar year. This report shall be submitted to the Deputy Director, Office of International Programs at the address provided in § 110.4. This report must include:

(1) A description of the components keyed to the categories listed in appendix A to this part.

(2) Approximate shipment dates.

(3) A list of recipient countries and end users keyed to the items shipped.

[75 FR 44092, July 28, 2010, as amended at 77 FR 27114, May 9, 2012; 86 FR 55479, Oct. 6, 2021]

Subpart F—Violations and Enforcement

§ 110.60 Violations.

(a) The Commission may obtain an injunction or other court order to prevent a violation of the provisions of—

(1) The Atomic Energy Act;

(2) Title II of the Energy Reorganization Act of 1974; or

(3) A regulation or order pursuant to those Acts.

(b) The Commission may obtain a court order for the payment of a civil penalty imposed under section 234 of the Atomic Energy Act:

(1) For violations of:

(i) Sections 53, 57, 62, 63, 81, 82, 101, 103, 104, 107, or 109 of the Atomic Energy Act;

(ii) Section 206 of the Energy Reorganization Act;

(iii) Any rule, regulation, or order issued pursuant to the sections specified in paragraph (b)(1)(i) of this section;

(iv) Any term, condition, or limitation of any license issued under the sections specified in paragraph (b)(1)(i) of this section.

(2) For any violation for which a license may be revoked under section 186 of the Atomic Energy Act.

[75 FR 44092, July 28, 2010]

§ 110.61 Notice of violation.

(a) Before instituting any enforcement action the Commission will serve on the licensee written notice of violation, except as provided in paragraph (d).

(b) The notice will state the alleged violation; require the licensee to respond in writing, within 20 days or other specified time; and may also require the licensee to state the corrective steps taken or to be taken and the date when full compliance will be achieved.

(c) The notice may provide that, if an adequate and timely reply is not received, an order to show cause may be

issued pursuant to § 110.62 or a proceeding instituted to impose a civil penalty pursuant to § 110.64.

(d) The notice may be omitted and an order to show cause issued when the Commission determines that the violation is willful or that the public health, safety, or interest so requires.

§ 110.62 Order to show cause.

(a) In response to an alleged violation, described in § 110.60, the Commission may institute a proceeding to revoke, suspend, or modify a license by issuing an order to show cause:

(1) Stating the alleged violation and proposed enforcement action; and

(2) Informing the licensee of his right, within 20 days or other specified time, to file a written answer and demand a hearing.

(b) An answer consenting to the proposed enforcement action shall constitute a waiver by the licensee of a hearing and of all rights to seek further Commission or judicial review.

(c) The order to show cause may be omitted and an order issued to revoke, suspend, or modify the license in cases where the Commission determines that the violation is willful or that the public health, safety, or interest so requires.

§ 110.63 Order for revocation, suspension, or modification.

(a) In response to an alleged violation described in § 110.60, the Commission may revoke, suspend, or modify a license by issuing an order:

(1) Stating the violation and the effective date of the proposed enforcement action; and

(2) Informing the licensee of his right, within 20 days or other specified time, to file a written answer and demand a hearing.

(b) If an answer is not filed within the time specified, the enforcement action will become effective and permanent as proposed.

(c) If a timely answer is filed, the Commission, after considering the answer, will issue an order dismissing the proceeding, staying the effectiveness of the order or taking other appropriate action.

(d) The order may be made effective immediately, with reasons stated, pending further hearing and order, when the Commission determines that the violation is willful or that the public health, safety, or interest so requires.

§ 110.64 Civil penalty.

(a) In response to a violation, the Commission may institute a proceeding to impose a civil penalty under section 234 of the Atomic Energy Act by issuing a notice to the licensee:

(1) Stating the alleged violation and the amount of the proposed penalty;

(2) Informing the licensee of his right, within 20 days or other specified time, to file a written answer; and

(3) Advising that a delinquent payment for a subsequently imposed penalty may be referred to the Attorney General for collection pursuant to section 234c. of the Atomic Energy Act.

(b) If an answer is not filed within the time specified, the Commission will issue an order imposing the proposed penalty.

(c) If a timely answer is filed, the Commission, after considering the answer, will issue an order dismissing the proceeding or imposing a penalty subject to any required hearing.

(d) If an order imposing a civil penalty is issued, the licensee may request a hearing within 20 days or other specified time.

(e) Except when the matter has been referred to the Attorney General for collection, payment of penalties shall be made by check, draft, or money order payable to the Treasurer of the United States, and mailed to the Secretary, U.S. Nuclear Regulatory Commission, Washington, DC 20555–0001.

(f) An enforcement action to impose a civil penalty will not itself revoke, modify, or suspend any license under this part.

[43 FR 21641, May 19, 1978, as amended at 62 FR 27495, May 20, 1997]

§ 110.65 Settlement and compromise.

At any time after issuance of an order for any enforcement action under this subpart, an agreement may be entered into for settlement of the proceeding or compromise of a penalty. Upon approval by the Commission, or presiding officer if a hearing has been requested, the terms of the settlement

or compromise will be embodied in the order disposing of the enforcement action.

§ 110.66 Enforcement hearing.

(a) If the licensee demands a hearing, the Commission will issue an order specifying the time and place.

(b) A hearing pursuant to this subpart will be conducted under the procedures in subpart G of part 2 of this chapter.

[43 FR 21641, May 19, 1978, as amended at 75 FR 44093, July 28, 2010]

§ 110.67 Criminal penalties.

(a) Section 223 of the Atomic Energy Act provides for criminal sanctions for willful violation of, attempted violation of, or conspiracy to violate, any regulation issued under sections 161b., 161i., or 161o. of the Atomic Energy Act. For purposes of section 223, all the regulations in 10 CFR part 110 are issued under one or more of sections 161b, 161i, or 161o, except for the sections listed in paragraph (b) of this section.

(b) The regulations in part 110 that are not issued under sections 161b, 161i, or 161o for the purposes of section 223 are as follows: §§ 110.1, 110.2, 110.3, 110.4, 110.7, 110.10, 110.11, 110.30, 110.31, 110.32, 110.40, 110.41, 110.42, 110.43, 110.44, 110.45, 110.46, 110.51, 110.52, 110.60, 110.61, 110.62, 110.63, 110.64, 110.65, 110.66, 110.67, 110.70, 110.71, 110.72, 110.73, 110.80, 110.81, 110.82, 110.83, 110.84, 110.85, 110.86, 110.87, 110.88, 110.89, 110.90, 110.91, 110.100, 110.101, 110.102, 110.103, 110.104, 110.105, 110.106, 110.107, 110.108, 110.109, 110.110, 110.111, 110.112, 110.113, 110.120, 110.122, 110.124, 110.130, 110.131, 110.132, 110.133, 110.134, and 110.135.

[57 FR 55080, Nov. 24, 1992; 57 FR 62605, Dec. 31, 1992, as amended at 60 FR 37565, July 21, 1995; 75 FR 44093, July 28, 2010]

Subpart G—Public Notification and Availability of Documents and Records

§ 110.70 Public notice of receipt of an application.

(a) The Commission will notice the receipt of each license application, including applications for amendment or renewal, for an export or import for which a specific license is required by making a copy available at the NRC Web site, *http://www.nrc.gov*.

(b) The Commission will also publish in the FEDERAL REGISTER a notice of receipt of each license application, including applications for amendment or renewal, to export the following:

(1) A production or utilization facility.

(2) Five effective kilograms or more of plutonium, high-enriched uranium or uranium-233.

(3) 10,000 kilograms or more of heavy water for nuclear end use. (Note: Does not apply to exports of heavy water to Canada for nuclear end use.)

(4) Nuclear grade graphite for nuclear end use.

(5) Radioactive waste.

(c) The Commission will also publish in the FEDERAL REGISTER a notice of receipt of a license application, including applications for amendment or renewal, for an import of radioactive waste for which a specific license is required.

[75 FR 44093, July 28, 2010, as amended at 86 FR 55479, Oct. 6, 2021]

§ 110.71 Notice of withdrawal of an application.

The Commission will notice the withdrawal of an application by making a copy available at the NRC Web site, *http://www.nrc.gov*.

[64 FR 48955, Sept. 9, 1999]

§ 110.72 Public availability of documents.

Unless exempt from disclosure under part 9 of this chapter, the following documents pertaining to each license and license application for an import or export requiring a specific license under this part will be made available at the NRC Web site, *http://www.nrc.gov*, and/or at the NRC Public Document Room:

(a) The license application and any requests for amendments;

(b) Commission correspondence with the applicant or licensee;

(c) FEDERAL REGISTER notices;

(d) The Commission letter requesting Executive Branch views;

(e) Correspondence from the State Department with Executive Branch views;

(f) Correspondence from foreign governments and international organizations;

(g) Filings pursuant to subpart I and Commission and Executive Branch responses, if any;

(h) If a hearing is held, the hearing record and decision;

(i) A statement of staff conclusions; and

(j) The license, requests for license amendments and amendments.

[43 FR 21641, May 19, 1978, as amended at 60 FR 37565, July 21, 1995; 64 FR 48955, Sept. 9, 1999]

§ 110.73 Availability of NRC records.

(a) Commission records under this part will be made available to the public only in accordance with part 9 of this chapter.

(b) Proprietary information provided under this part may be protected under Part 9 and § 2.390(b), (c), and (d) of this chapter.

[43 FR 21641, May 19, 1978, as amended at 69 FR 2281, Jan. 14, 2004]

Subpart H—Public Participation Procedures Concerning License Applications

§ 110.80 Basis for hearings.

The procedures in this part will constitute the exclusive basis for hearings on export and import license applications.

[75 FR 44093, July 28, 2010]

§ 110.81 Written comments.

(a) The Commission encourages written comments from the public regarding export and import license applications. The Commission will consider and, if appropriate, respond to these comments.

(b) These comments should be submitted within 30 days after public notice of receipt of the application on the NRC Web site or in the FEDERAL REGISTER and addressed to the Secretary, U.S. Nuclear Regulatory Commission, Washington, DC 20555–0001, Attention: Rulemakings and Adjudications Staff.

(c) The Commission will provide the applicant with a copy of the comments and, if appropriate, a reasonable opportunity for response.

[43 FR 21641, May 19, 1978, as amended at 62 FR 27495, May 20, 1997; 75 FR 44093, July 28, 2010]

§ 110.82 Hearing request or intervention petition.

(a) A person may request a hearing or petition for leave to intervene on a license application for an import or export requiring a specific license.

(b) Hearing requests and intervention petitions must:

(1) State the name, address and telephone number of the requestor or petitioner;

(2) Set forth the issues sought to be raised;

(3) Explain why a hearing or an intervention would be in the public interest and how a hearing or intervention would assist the Commission in making the determinations required by § 110.45.

(4) Specify, when a person asserts that his interest may be affected, both the facts pertaining to his interest and how it may be affected, with particular reference to the factors in § 110.84.

(c) Hearing requests and intervention petitions will be considered timely only if filed not later than:

(1) 30 days after notice of receipt in the FEDERAL REGISTER, for those applications published in the FEDERAL REGISTER;

(2) 30 days after publication of notice on the NRC Web site at *http://www.nrc.gov;*

(3) 30 days after notice of receipt in the Public Document Room; or

(4) Such other time as may be provided by the Commission.

[43 FR 21641, May 19, 1978, as amended at 49 FR 47202, Dec. 3, 1984; 60 FR 37565, July 21, 1995; 60 FR 55183, Oct. 30, 1995; 65 FR 70291, Nov. 22, 2000; 75 FR 44093, July 28, 2010]

§ 110.83 Answers and replies.

(a) Unless otherwise specified by the Commission, an answer to a hearing request or intervention petition may be filed within 30 days after the request or petition has been served.

(b) Unless otherwise specified by the Commission, a reply to an answer may be filed within 10 days after all timely answers have been filed.

(c) Answers and replies should address the factors in § 110.84.

[43 FR 21641, May 19, 1978, as amended at 49 FR 47203, Dec. 3, 1984]

§ 110.84 Commission action on a hearing request or intervention petition.

(a) In an export licensing proceeding, or in an import licensing proceeding in which a hearing request or intervention petition does not assert or establish an interest which may be affected, the Commission will consider:

(1) Whether a hearing would be in the public interest; and

(2) Whether a hearing would assist the Commission in making the statutory determinations required by the Atomic Energy Act.

(b) If a hearing request or intervention petition asserts an interest which may be affected, the Commission will consider:

(1) The nature of the alleged interest;

(2) How that interest relates to issuance or denial; and

(3) The possible effect of any order on that interest, including whether the relief requested is within the Commission's authority, and, if so, whether granting relief would redress the alleged injury.

(c) Untimely hearing requests or intervention petitions may be denied unless good cause for failure to file on time is established. In reviewing untimely requests or petitions, the Commission will also consider:

(1) The availability of other means by which the requestor's or petitioner's interest, if any, will be protected or represented by other participants in a hearing; and

(2) The extent to which the issues will be broadened or action on the application delayed.

(d) Before granting or denying a hearing request or intervention petition, the Commission will review the Executive Branch's views on the license application and may request further information from the petitioner, requester, the Commission staff, the Executive Branch or others.

(e) The Commission will deny a request or petition that pertains solely to matters outside its jurisdiction.

(f) If an issue has been adequately explored in a previous licensing hearing conducted pursuant to this part, a request for a new hearing in connection with that issue will be denied unless:

(1) A hearing request or intervention petition establishes that an interest may be affected; or

(2) The Commission determines that changed circumstances or new information warrant a new hearing.

(g) After consideration of the factors covered by paragraphs (a) through (f), the Commission will issue a notice or order granting or denying a hearing request or intervention petition. Upon the affirmative vote of two Commissioners a hearing will be ordered. A notice granting a hearing will be published in the FEDERAL REGISTER and will specify whether the hearing will be oral or consist of written comments. A denial notice will set forth the reasons for denial.

[43 FR 21641, May 19, 1978, as amended at 49 FR 47203, Dec. 3, 1984]

§ 110.85 Notice of hearing consisting of written comments.

(a) A notice of hearing consisting of written comments will:

(1) State the issues to be considered;

(2) Provide the names and addresses of participants;

(3) Specify the time limits for participants and others to submit written views and respond to any written comments; and

(4) State any other instructions the Commission deems appropriate.

(b) The Secretary will give notice of any hearing under this section and § 110.86 to any person who so requests.

§ 110.86 Notice of oral hearing.

(a) A notice of oral hearing will:

(1) State the time, place and issues to be considered;

(2) Provide names and addresses of participants;

(3) Designate the presiding officer;

(4) Specify the time limit for participants and others to indicate whether they wish to present views; and

(5) State any other instructions the Commission deems appropriate.

(b) If the Commission is not the presiding officer, the notice of oral hearing will also state:

(1) When the jurisdiction of the presiding officer commences and terminates;

(2) The powers of the presiding officer; and

(3) Instructions to the presiding officer to certify promptly the completed hearing record to the Commission without preliminary decision or findings, unless the Commission directs otherwise.

§ 110.87 Conditions in a notice or order.

(a) A notice or order granting a hearing or permitting intervention may restrict irrelevant or duplicative testimony, or require common interests to be represented by a single spokesman.

(b) If a participant's interests do not extend to all the issues in the hearing, the notice or order may limit his participation accordingly.

(c) Unless authorized by the Commission, the granting of participation will not broaden the hearing issues.

§ 110.88 Authority of the Secretary.

The Secretary is authorized to prescribe time schedules and other procedural arrangements, when not covered by this part, and rule on related procedural requests.

§ 110.89 Filing and service.

(a) Hearing requests, intervention petitions, answers, replies and accompanying documents must be filed with the Commission by delivery or by mail to the Secretary, U.S. Nuclear Regulatory Commission, Washington, DC 20555–0001, Attention: Rulemakings and Adjudications Staff or via the E-Filing system, following the procedure set forth in 10 CFR 2.302. Filing by mail is complete upon deposit in the mail. Filing via the E-Filing system is completed by following the requirements described in 10 CFR 2.302(d).

(b) All filing and Commission notices and orders must be served upon the applicant; the General Counsel, U.S. Nuclear Regulatory Commission, Washington, DC 20555; the Executive Secretary, Department of State, Washington, DC 20520; and participants if any. Hearing requests, intervention petitions, and answers and replies must be served by the person filing those pleadings.

(c) Service is completed by:

(1) Delivering the paper to the person; or leaving it in his office with someone in charge; or, if there is no one in charge, leaving it in a conspicuous place in the office; or, if he has no office or it is closed, leaving it at his usual place of residence with some occupant of suitable age and discretion;

(2) Following the requirements for E-Filing in 10 CFR 2.305;

(3) Depositing it in the United States mail, express mail, or expedited delivery service, properly stamped and addressed; or

(4) Any other manner authorized by law, when service cannot be made as provided in paragraphs (c)(1) through (3) of this section.

(d) Proof of service, stating the name and address of the person served and the manner and date of service, shall be shown, and may be made by:

(1) Written acknowledgment of the person served or an authorized representative;

(2) The certificate or affidavit of the person making the service; or

(3) Following the requirements for E-Filing in 10 CFR 2.305.

(e) The Commission may make special provisions for service when circumstances warrant.

[72 FR 49154, Aug. 28, 2007]

§ 110.90 Computation of time.

(a) In computing any period of time, the day of the act, event, or default after which the designated period of time begins to run is not included. The last day of the period so computed is included unless it is a Saturday or Sunday, a Federal legal holiday at the place where the action or event is to occur, or a day upon which, because of an emergency closure of the Federal government in Washington, DC, NRC Headquarters does not open for business, in which event the period runs until the end of the next day that is not a Saturday, Sunday, holiday, or emergency closure.

(b) In time periods of less than seven (7) days, intermediate Saturdays, Sundays, Federal legal holidays, and emergency closures are not counted.

(c) Whenever an action is required within a prescribed period by a document served under § 110.89 of this part, no additional time is added to the prescribed period except as set forth in 10 CFR 2.306(b).

(d) To be considered timely, a document must be served:

(1) By 5 p.m. Eastern Time for a document served in person or by expedited service; and

(2) By 11:59 p.m. Eastern Time for a document served by the E-Filing system.

[72 FR 49154, Aug. 28, 2007]

§ 110.91 Commission consultations.

The Commission may consult at any time on a license application with the staff, the Executive Branch or other persons.

[49 FR 47203, Dec. 3, 1984]

Subpart I—Hearings

§ 110.100 Public hearings.

Hearings under this part will be public unless the Commission directs otherwise.

§ 110.101 Filing and service.

Filing and service of hearing documents shall be pursuant to § 110.89.

§ 110.102 Hearing docket.

For each hearing, the Secretary will maintain a docket which will include the hearing transcript, exhibits and all papers filed or issued pursuant to the hearing.

§ 110.103 Acceptance of hearing documents.

(a) Each document filed or issued must be clearly legible and bear the docket number, license application number, and hearing title.

(b) Each document shall be filed in one original and signed by the participant or their authorized representative, with their address and date of signature indicated. The signature is a representation that the document is submitted with full authority, the signer knows its contents, and that, to the best of his knowledge, the statements made in it are true.

(c) Filings submitted using the E-filing system must follow the requirements outlined in 10 CFR 2.304.

(d) A document not meeting the requirements of this section may be returned with an explanation for nonacceptance and, if so, will not be docketed.

[72 FR 49154, Aug. 28, 2007]

§ 110.104 Presiding officer.

(a) The full Commission will ordinarily be the presiding officer at a hearing under this part. However, the Commission may provide in a hearing notice that one or more Commissioners, or any other person as provided by law, will preside.

(b) A participant may submit a written motion for the disqualification of any person presiding. The motion shall be supported by affidavit setting forth the alleged grounds for disqualification. If the presiding officer does not grant the motion or the person does not disqualify himself, the Commission will decide the matter.

(c) If any presiding officer designated by the Commission deems himself disqualified, he shall withdraw by notice on the record after notifying the Commission.

(d) If a presiding officer becomes unavailable, the Commission will designate a replacement.

(e) Any motion concerning the designation of a replacement presiding officer shall be made within 5 days after the designation.

(f) Unless otherwise ordered by the Commission, the jurisdiction of a presiding officer other than the Commission commences as designated in the hearing notice and terminates upon certification of the hearing record to the Commission, or when the presiding officer is disqualified.

§ 110.105 Responsibility and power of the presiding officer in an oral hearing.

(a) The presiding officer in any oral hearing shall conduct a fair hearing, develop a record that will contribute to informed decisionmaking, and, within the framework of the Commission's orders, have the power necessary to achieve these ends, including the power to:

(1) Take action to avoid unnecessary delay and maintain order;

(2) Dispose of procedural requests;

(3) Question participants and witnesses, and entertain suggestions as to questions which may be asked of participants and witnessess;

(4) Order consolidation of participants;

(5) Establish the order of presentation;

(6) Hold conferences before or during the hearing;

(7) Establish reasonable time limits;

(8) Limit the number of witnesses; and

(9) Strike or reject duplicative or irrelevant presentations.

(b) Where the Commission itself does not preside:

(1) The presiding officer may certify questions or refer rulings to the Commission for decision;

(2) Any hearing order may be modified by the Commission; and

(3) The presiding officer will certify the completed hearing record to the Commission, which may then issue its opinion on the hearing or provide that additional testimony be presented.

§ 110.106 Participation in a hearing.

(a) Unless otherwise limited by this part or by the Commission, participants in a hearing may submit:

(1) Initial and concluding written statements of position on the issues;

(2) Written questions to the presiding officer; and

(3) Written responses and rebuttal testimony to the statements of other participants.

(b) Participants in an oral hearing may also submit oral statements, questions, responses and rebuttal testimony.

(c) A participant in an import licensing hearing establishing that his interest may be affected, may be accorded additional procedural rights under subpart G of part 2 with respect to resolution of domestic factual issues regarding the public health, safety and environment of the United States, and the protection of the United States public against domestic theft, diversion or sabotage, to the extent that such issues are separable from the non-domestic issues associated with the license application.

§ 110.107 Presentation of testimony in an oral hearing.

(a) All direct testimony in an oral hearing shall be filed no later than 7 days before the hearing or as otherwise ordered or allowed.

(b) Written testimony will be received into evidence in exhibit form.

(c) Unless proscribed under § 110.87, members of groups which are designated as participants may testify in their individual capacities.

(d) Participants may present their own witnesses.

(e) Testimony by the Commission and the Executive Branch will be presented only by persons officially designated for that purpose.

(f) Participants and witnesses will be questioned orally or in writing and only by the presiding officer. Questions may be addressed to individuals or to panels of participants or witnesses.

(g) The presiding officer may accept written testimony from a person unable to appear at the hearing, and may request him to respond to questions.

(h) No subpoenas will be granted at the request of participants for attendance and testimony of participants or witnesses or the production of evidence.

§ 110.108 Appearance in an oral hearing.

(a) A participant may appear in a hearing on his own behalf or be represented by an authorized representative.

(b) A person appearing shall file a written notice stating his name, address and telephone number, and if an authorized representative, the basis of his eligibility and the name and address of the participant on whose behalf he appears.

(c) A person may be excluded from a hearing for disorderly, dilatory or contemptuous conduct, provided he is informed of the grounds and given an opportunity to respond.

§ 110.109 Motions and requests.

(a) Motions and requests shall be addressed to the presiding officer, and, if

written, also filed with the Secretary and served on other participants.

(b) Other participants may respond to the motion or request. Responses to written motions or requests shall be filed within 5 days after service.

(c) When the Commission does not preside, in response to a motion or request, the presiding officer may refer a ruling or certify a question to the Commission for decision and notify the participants.

(d) Unless otherwise ordered by the Commission, a motion or request, or the certification of a question or referral of a ruling, shall not stay or extend any aspect of the hearing.

§ 110.110 Default.

When a participant fails to act within a specified time, the presiding officer may consider him in default, issue an appropriate ruling and proceed without further notice to the defaulting participant.

§ 110.111 Waiver of a rule or regulation.

(a) A participant may petition that a Commission rule or regulation be waived with respect to the license application under consideration.

(b) The sole ground for a waiver shall be that, because of special circumstances concerning the subject of the hearing, application of a rule or regulation would not serve the purposes for which it was adopted.

(c) Waiver petition shall specify why application of the rule or regulation would not serve the purposes for which it was adopted.

(d) Other participants may, within 10 days, file a response to a waiver petition.

(e) When the Commission does not preside, the presiding officer will certify the waiver petition to the Commission, which, in response, will grant or deny the waiver or direct any further proceedings.

(f) Regardless of whether a waiver is granted or denied, a separate petition for rulemaking may be filed pursuant to subpart K of this part.

[43 FR 21641, May 19, 1978, as amended at 62 FR 59277, Nov. 3, 1997]

§ 110.112 Reporter and transcript for an oral hearing.

(a) A reporter designated by the Commission will record an oral hearing and prepare the official hearing transcript.

(b) Except for any portions containing classified information, Restricted Data, Safeguards Information, proprietary information, or other sensitive unclassified information, transcripts will be made available at the NRC Web site, *http://www.nrc.gov*, and/or at the NRC Public Document Room.

(c) Corrections of the official transcript may be made only as specified by the Secretary.

[43 FR 21641, May 19, 1978, as amended at 64 FR 48955, Sept. 9, 1999; 75 FR 44093, July 28, 2010]

§ 110.113 Commission action.

(a) Upon completion of a hearing, the Commission will issue a written opinion including its decision on the license application, the reasons for the decision and any dissenting views.

(b) While the Commission will consider fully the hearing record, the licensing decision will be based on all relevant information, including information which might go beyond that in the hearing record.

(c) If the Commission considers information not in the hearing record in reaching its licensing decision, the hearing participants will be informed and, if not classified or otherwise privileged, the information will be made available at the NRC Web site, *http://www.nrc.gov*, and furnished to the participants.

(d) The Commission may issue a license before completion of a hearing if it finds that:

(1) Prompt issuance is required in the public interest, particularly the common defense and security; and

(2) A participant establishing that his interest may be affected has been provided a fair opportunity to present his views.

(e) The Commission may:

(1) Defer any hearing;

(2) Consolidate applications for hearing;

(3) Narrow or broaden the hearing issues; and

(4) Take other action, as appropriate.

[43 FR 21641, May 19, 1978, as amended at 64 FR 48955, Sept. 9, 1999]

Subpart J—Special Procedures for Classified Information in Hearings

§ 110.120 Purpose and scope.

(a) This subpart contains special procedures concerning access to, and introduction of, classified information into hearings under this part.

(b) These procedures do not in any way apply to classified information exchanged between the Executive Branch and the Commission not introduced into a hearing. Such information will be declassified to the maximum extent feasible. The public statements of the Commission staff and Executive Branch will, to the extent consistent with classification requirements, reflect consideration of any such classified information.

§ 110.121 Security clearances and access to classified information.

(a) No person without a security clearance will have access to classified information.

(b) Only the Commission will act upon an application for access to classified information.

(c) To the extent practicable, applications for access to classified information shall describe the information to which access is desired and its level of classification (confidential, secret or other); the reasons for requesting access; the names of individuals for whom access is requested; and the reasons why access is requested for those individuals.

(d) The Commission will consider requests for appropriate security clearances in reasonable numbers; conduct its review and grant or deny these in accordance with part 10 of this chapter; and make a reasonable charge to cover costs.

(e) The Commission will not grant security clearances for access to classified information, unless it determines that the available unclassified information is inadequate on the subject matter involved.

(f) When an application demonstrates that access to classified information not introduced into a hearing may be needed to prepare a participant's position on the hearing issues, the Commission may issue an order granting access to this information to the participant, his authorized representative or other persons. Access will be subject to the conditions in paragraphs (e) and (j) and will not be granted unless required security clearances have been obtained.

(g) Once classified information has been introduced into a hearing, the Commission will grant access to a participant, his authorized representative or such other persons as the Commission determines may be needed by the participant to prepare his position on the hearing issues. Access will be subject to the conditions in paragraphs (e) and (j) of this section and will not be granted unless required security clearances have been obtained.

(h) For good cause, the Commission may postpone action upon an application for access to classified information.

(i) The Commission will grant access to classified information only up to the level for which the persons described in paragraphs (f) and (g) of this section are cleared and only upon an adequate commitment by them not to disclose such information subject to penalties as provided by law.

(j) The Commission will not in any circumstances grant access to classified information:

(1) Unless it determines that the grant is not inimical to the common defense and security; and

(2) Which it has received from another Government agency, without the prior consent of the originating agency.

(k) Upon completion of a hearing, the Commission will terminate all security clearances granted pursuant to the hearing and may require the disposal of classified information to which access has been granted or the observance of other procedures to safeguard this information.

§ 110.122 Classification assistance.

On the request of any hearing participant or the presiding officer (if other than the Commission), the Commission

will designate a representative to advise and assist the presiding officer or the participants with respect to security classification of information and the protective requirements to be observed.

§ 110.123 Notice of intent to introduce classified information.

(a) A participant shall seek the required security clearances, where necessary, and file with the Secretary a notice of intent to introduce classified information into a hearing at the earliest possible time after the notice of hearing.

(b) If a participant has not filed a notice of intent in accordance with this section, he may introduce classified information only if he gives to the other participants and the Commission prompt written notice of intent and only as permitted by the Commission when it determines that the public interest will not be prejudiced.

(c) The notice of intent shall be unclassified and, to the extent consistent with classification requirements, state:

(1) The subject matter of the classified information, which it is anticipated will be involved;

(2) The highest level of classification of the information (confidential, secret or other);

(3) When it is anticipated that the information would be introduced; and

(4) The relevance and materiality of the information to the hearing issues.

§ 110.124 Rearrangement or suspension of a hearing.

When a participant gives notice of intent to introduce classified information and other participants do not have the required security clearances, subject to § 110.121, the Commission may:

(a) Suspend or rearrange the normal order of the hearing to give other participants an opportunity to obtain the required security clearances with minimum delay in the conduct of the hearing; or

(b) Take such other action as it determines to be in the public interest.

§ 110.125 Unclassified statements required.

(a) It is the obligation of hearing participants to introduce information in unclassified form wherever possible, and to declassify, to the maximum extent feasible, any classified information introduced into the hearing. This obligation rests on each participant whether or not any other participant has the required security clearances.

(b) When classified information is offered for introduction into a hearing:

(1) The participant offering it shall, to the extent consistent with classification requirements, submit to the presiding officer and other participants an unclassified statement describing the substance of the classified information as accurately and completely as possible;

(2) In accordance with procedures agreed upon by the participants or prescribed by the presiding officer, and after notice to all participants and opportunity to be heard on the notice, the presiding officer will determine whether an unclassified statement may be substituted for the classified information in the hearing record without prejudice to the interest of any participant or the public;

(3) If the Commission determines that the unclassified statement (together with such unclassified modifications as it finds are necessary or appropriate to protect the interest of other participants and the public) adequately sets forth information in the classified matter which is relevant and material to the issues in the hearing, it will direct that the classified matter be excluded from the record of the hearing; and

(4) The Commission may postpone any of the procedures in this section until all other evidence has been received. However, a participant shall not postpone service of any unclassified statement required in this section.

§ 110.126 Protection of classified information.

Nothing in this subpart shall relieve any person from safeguarding classified information as required by law and rules, regulations or orders of any Government agency.

Subpart K—Rulemaking

§ 110.130 Initiation of rulemaking.

The Commission may initiate action to amend the regulations in this part on its own initiative or in response to a petition.

§ 110.131 Petition for rulemaking.

(a) A petition for rulemaking should be addressed to the Secretary of the Commission, for the attention of the Secretary's Rulemakings and Adjudications Staff. The petition should be sent using an appropriate method listed in § 110.4.

(b) The petition shall state the basis for the requested amendment.

(c) The petition may request the Commission to suspend all or part of any licensing proceeding under this part pending disposition of the petition.

(d) The Secretary will assign a docket number to the petition, place a copy in the Public Document Room and notice its receipt in the FEDERAL REGISTER.

(e) Publication may be limited by order of the Commission to the extent required by section 181 of the Atomic Energy Act.

[43 FR 21641, May 19, 1978, as amended at 63 FR 15744, Apr. 1, 1998; 68 FR 58824, Oct. 10, 2003]

§ 110.132 Commission action on a petition.

(a) The Commission may grant or deny the petition in whole or in part.

(b) If the petition is granted, a notice of proposed rulemaking or a notice of rulemaking will be published in the FEDERAL REGISTER.

(c) If the petition is denied, the petitioner will be informed of the grounds.

(d) Commission action on a petition will normally follow, whenever appropriate, receipt and evaluation of Executive Branch views.

(e) The Commission, in exercising the discretion authorized by section 4(a)(1) of the Administrative Procedure Act (5 U.S.C. 553(a)(1)), will decide what, if any, public rulemaking procedures will be followed.

§ 110.133 Notice of proposed rulemaking.

(a) When the Commission proposes to amend the regulations in this part, it will normally publish a notice of proposed rulemaking in the FEDERAL REGISTER.

(b) A notice of proposed rulemaking will include:

(1) The authority for the proposed rule;

(2) The substance and purpose of the proposed rule;

(3) Directions for public participation;

(4) The time and place of any public hearing; and

(5) If a hearing is to be held by other than the Commission, designating of a presiding officer and instructions for the conduct of the hearing.

(c) A notice of proposed rulemaking will be published not less than 15 days before any hearing, unless the Commission for good cause provides otherwise in the notice.

§ 110.134 Public participation.

(a) The Commission may hold an oral hearing on a proposed rule or permit any person to participate in a rulemaking proceeding through the submission of written comments.

(b) When it is in the public interest and is authorized by law, public rulemaking procedures may be omitted and a notice of rulemaking published pursuant to § 110.135.

§ 110.135 Notice of rulemaking.

(a) Upon approval of an amendment, the Commission will publish in the FEDERAL REGISTER a notice of rulemaking which includes a statement of its basis and purpose, effective date and, where appropriate, any significant variations from the amendment as proposed in any notice of proposed rulemaking.

(b) The effective date of an amendment will normally be no earlier than 30 days after publication of the notice of rulemaking, unless the Commission for good cause provides otherwise in the notice.

APPENDIX A TO PART 110—ILLUSTRATIVE LIST OF NUCLEAR REACTOR EQUIPMENT UNDER NRC EXPORT LICENSING AUTHORITY

NOTE: A nuclear reactor basically includes the items within or attached directly to the reactor vessel, the equipment which controls the level of power in the core, and the components which normally contain or come in direct contact with or control the primary coolant of the reactor core.

(1) Reactor pressure vessels, *i.e.*, metal vessels, as complete units or major shop-fabricated parts, especially designed or prepared to contain the core of a nuclear reactor and capable of withstanding the operating pressure of the primary coolant.

(2) On-line (e.g., CANDU) reactor fuel charging and discharging machines, *i.e.*, manipulative equipment especially designed for inserting or removing fuel in an operating nuclear reactor.

(3) Complete reactor control rod system, *i.e.*, rods especially designed or prepared for the control of the reaction rate in a nuclear reactor, including the neutron absorbing part and the support or suspension structures therefor.

(4) Reactor primary coolant pumps or circulators, *i.e.*, pumps or circulators especially designed or prepared for circulating the primary coolant in a nuclear reactor.

(5) Reactor pressure tubes, *i.e.*, tubes especially designed or prepared to contain both fuel elements and the primary coolant in a nuclear reactor.

(6) Zirconium tubes, *i.e.*, zirconium metal and alloys in the form of tubes or assemblies of tubes especially designed or prepared for use as fuel cladding in a nuclear reactor.

(7) Reactor internals, e.g., core support structures, control and rod guide tubes, fuel channels, calandria tubes, thermal shields, baffles, core grid plates, and diffuser plates especially designed or prepared for use in a nuclear reactor.

(8) Reactor control rod drive mechanisms, including detection and measuring equipment to determine neutron flux levels within the core of a nuclear reactor.

(9) Heat exchangers, e.g., steam generators especially designed or prepared for the primary, or intermediate, coolant circuit of a nuclear reactor or heat exchangers especially designed or prepared for use in the primary coolant circuit of a nuclear reactor.

(10) External thermal shields especially designed or prepared for use in a nuclear reactor for reduction of heat loss and also for containment vessel protection.

(11) Any other components especially designed or prepared for use in a nuclear reactor or in any of the components described in this appendix.

[79 FR 39291, July 10, 2014]

APPENDIX B TO PART 110—ILLUSTRATIVE LIST OF GAS CENTRIFUGE ENRICHMENT PLANT COMPONENTS UNDER NRC'S EXPORT LICENSING AUTHORITY

1. *Assemblies and components especially designed or prepared for use in gas centrifuges.*

NOTE: The gas centrifuge normally consists of a thin-walled cylinder(s) of between 75 mm and 650 mm diameter contained in a vacuum environment and spun at high peripheral speed (of the order of 300 m/per second and more) with the central axis vertical. In order to achieve high speed, the materials of construction for the rotating rotor assembly, and hence its individual components, have to be manufactured to very close tolerances in order to minimize the unbalance. In contrast to other centrifuges, the gas centrifuge for uranium enrichment is characterized by having within the rotor chamber a rotating disc-shaped baffle(s) and a stationary tube arrangement for feeding and extracting uranium hexafluoride (UF_6) gas and featuring at least three separate channels of which two are connected to scoops extending from the rotor axis towards the periphery of the rotor chamber. Also contained within the vacuum environment are a number of critical items which do not rotate and which, although they are especially designed, are not difficult to fabricate nor are they fabricated out of unique materials. A centrifuge facility, however, requires a large number of these components so that quantities can provide an important indication of end use.

1.1 Rotating Components

(a) Complete Rotor Assemblies: Thin-walled cylinders, or a number of interconnected thin-walled cylinders, manufactured from one of the high strength-to-density ratio materials described in the footnote to this section.

If interconnected, the cylinders are joined together by flexible bellows or rings as described in §1.1(c) of this appendix. The rotor is fitted with an internal baffle(s) and end caps, as described in §1.1(d) and (e) of this appendix, if in final form. However, the complete assembly may be delivered only partly assembled.

(b) Rotor Tubes: Especially designed or prepared thin-walled cylinders with thickness of 12 mm or less, a diameter of between 75 mm and 650 mm, and manufactured from one of the high strength-to-density ratio materials described in the footnote to this section.

(c) Rings or Bellows: Components especially designed or prepared to give localized support to the rotor tube or to join together a number of rotor tubes. The bellows in a short cylinder of wall thickness 3 mm or less, a diameter of between 75 mm and 650

mm, having a convolute, and manufactured from one of the high strength-to-density ratio materials described in the footnote to this section.

(d) Baffles: Disc shaped components of between 75 mm and 650 mm diameter especially designed or prepared to be mounted inside the centrifuge rotor tube, in order to isolate the take-off chamber from the main separation chamber and, in some cases, to assist the UF_6 gas circulation within the main separation chamber of the rotor tube, and manufactured from one of the high strength-to-density ratio materials described in the footnote to this section.

(e) Top Caps/Bottom Caps: Disc shaped components of between 75 mm and 650 mm diameter especially designed or prepared to fit to the ends of the rotor tube, and so contain the UF_6 within the rotor tube, and in some cases to support, retain or contain as an integrated part, an element of the upper bearing (top cap) or to carry the rotating elements of the motor and lower bearing (bottom cap), and manufactured from one of the high strength-to-density ratio materials described in the footnote to this section.

Footnote

The materials used for centrifuge rotating components include the following:

(a) Maraging steel capable of an ultimate tensile strength of 1.95 GPa or more.

(b) Aluminum alloys capable of an ultimate tensile strength of 0.46 GPa or more.

(c) Filamentary materials suitable for use in composite structures and having a specific modulus of 3.18×10^6 m or greater and a specific ultimate tensile strength of 7.62×10^4 m or greater.

(''Specific Modulus'' is the Young's modulus in N/m^2 divided by the specific weight inN/m^3 when measured at a temperature of 23 ±20 °C and a relative humidity of 50 ±5 percent. ''Specific tensile strength'' is the ultimate tensile strength in N/m^2 divided by the specific weight in N/m^3 when measured at a temperature of 23 ±20 °C and a relative humidity of 50 ±5 percent.)

1.2 Static Components

(a) Magnetic Suspension Bearings: 1. Especially designed or prepared bearing assemblies consisting of an annular magnet suspended within a housing containing a damping medium. The housing will be manufactured from a UF_6 resistant material (see footnote to §2 of this appendix). The magnet couples with a pole piece or a second magnet fitted to the top cap described in §1.1(e) of this appendix. The magnet may be ring-shaped with a relation between outer and inner diameter smaller or equal to 1.6:1. The magnet may be in a form having an initial permeability of 0.15 Henry/meter or more, or a remanence of 98.5 percent or more, or an energy product of greater than 80,000 joules/m^3. In addition to the usual material properties, it is a prerequisite that the deviation of the magnetic axes from the geometrical axes is limited to very small tolerances (lower than 0.1 mm) or that homogeneity of the material of the magnet is specially called for.

2. Active magnetic bearings especially designed or prepared for use with gas centrifuges. These bearings usually have the following characteristics:

(i) Designed to keep centred a rotor spinning at 600 Hz or more; and

(ii) Associated to a reliable electrical power supply and/or to an uninterruptible power supply (UPS) unit in order to function for more than 1 hour.

(b) Bearings/Dampers: Especially designed or prepared bearings comprising a pivot/cup assembly mounted on a damper. The pivot is normally a hardened steel shaft polished into a hemisphere at one end with a means of attachment to the bottom cap described in §1.1(e) of this appendix at the other. The shaft may, however, have a hydrodynamic bearing attached. The cup is pellet-shaped with hemispherical indentation in one surface. These components are often supplied separately to the damper.

(c) Molecular Pumps: Especially designed or prepared cylinders having internally machined or extruded helical grooves and internally machined bores. Typical dimensions are as follows: 75 mm to 650 mm internal diameter, 10 mm or more wall thickness, with a length equal to or greater than the diameter. The grooves are typically rectangular in cross-section and 2 mm or more in depth.

(d) Motor Stators: Especially designed or prepared ring shaped stators for high speed multi-phase alternating current (AC) hysteresis (or reluctance) motors for synchronous operation within a vacuum at a frequency of 600 Hz or greater and a power of 40 volts amps or greater. The stators may consist of multi-phase windings on a laminated low loss iron core comprised of thin layers typically 2.0 mm thick or less.

(e) Centrifuge housing/recipients: Components especially designed or prepared to contain the rotor tube assembly of a gas centrifuge. The housing consists of a rigid cylinder of wall thickness up to 30 mm with precision machined ends to locate the bearings and with one or more flanges for mounting. The machined ends are parallel to each other and perpendicular to the cylinder's longitudinal axis to within 0.05 degrees or less. The housing may also be a honeycomb type structure to accommodate several rotor tubes.

(f) Scoops: Especially designed or prepared tubes for the extraction of UF_6 gas from within the rotor tube by a Pitot tube action (that is, with an aperture facing into the circumferential gas flow within the rotor tube,

for example by bending the end of a radially disposed tube) and capable of being fixed to the central gas extraction system.

2. *Especially designed or prepared auxiliary systems, equipment, and components for gas centrifuge enrichment plants.*

NOTE: The auxiliary systems, equipment, and components for a gas centrifuge enrichment plant are the systems of the plant needed to feed UF_6 to the centrifuges to link the individual centrifuges to each other to form cascades (or stages) to allow for progressively higher enrichments and to extract the product and tails of UF_6 from the centrifuges, together with the equipment required to drive the centrifuges or to control the plant.

Normally UF_6 is evaporated from the solid using heated autoclaves and is distributed in gaseous form to the centrifuges by way of cascade header pipework. The ''product'' and ''tails'' of UF_6 gaseous streams flowing from the centrifuges are also passed by way of cascade header pipework to cold traps (operating at about 203 K (−70 °C)) where they are condensed prior to onward transfer into suitable containers for transportation or storage. Because an enrichment plant consists of many thousands of centrifuges arranged in cascades, there are many kilometers of cascade header pipework incorporating thousands of welds with a substantial amount of repetition of layout. The equipment, component and piping systems are fabricated to very high vacuum and cleanliness standards.

Some of the items listed below either come into direct contact with the UF_6 process gas or directly control the centrifuges and the passage of the gas from centrifuge to centrifuge and cascade to cascade. Materials resistant to corrosion by UF_6 include copper, copper alloys, stainless steel, aluminum, aluminum oxide, aluminum alloys, nickel or alloys containing 60 percent or more nickel, and fluorinated hydrocarbon polymers.

(a) Feed Systems/Product and Tails Withdrawal Systems: Especially designed or prepared process systems or equipment for enrichment plants made of or protected by materials resistant to corrosion by UF_6 including:

1. Feed autoclaves, ovens, or systems used for passing UF_6 to the enrichment process.

2. Desublimers, cold traps, or pumps used to remove UF_6 from the enrichment process for subsequent transfer upon heating.

3. Solidification or liquefaction stations used to remove UF_6 from the enrichment process by compressing and converting UF_6 to a liquid or solid form.

4. ''Product'' and ''tails'' stations used for transferring UF_6 into containers.

(b) Machine Header Piping Systems: Especially designed or prepared piping systems and header systems for handling UF_6 within the centrifuge cascades.

This piping network is normally of the ''triple'' header system with each centrifuge connected to each of the headers. There is therefore a substantial amount of repetition in its form. It is wholly made of or protected by UF_6 resistant materials (see Note to this section) and is fabricated to very high vacuum and cleanliness standards.

(c) Special shut-off and control valves:

1. Shut-off valves especially designed or prepared to act on the feed, ''product'' or ''tails'' UF_6 gaseous streams of an individual gas centrifuge.

2. Bellows-sealed valves, manual or automated, shut-off or control, made of or protected by materials resistant to corrosion by UF_6, with an inside diameter of 10 to 160 mm, especially designed or prepared for use in main or auxiliary systems of gas centrifuge enrichment plants.

Typical especially designed or prepared valves include bellow-sealed valves, fast acting closure-types, fast acting valves, and others.

(d) UF_6 Mass Spectrometers/Ion Sources: Especially designed or prepared mass spectrometers capable of taking on-line samples from UF_6 gas streams and having all of the following:

1. Capable of measuring ions of 320 atomic mass units or greater and having a resolution of better than 1 part in 320.

2. Ion sources constructed of or protected by nickel, nickel-copper alloys with a nickel content of 60 percent or more by weight, or nickel-chrome alloys.

3. Electron bombardment ionization sources.

4. Having a collector system suitable for isotope analysis.

(e) Frequency Changers: Frequency changers (also known as converters or inverters) especially designed or prepared to supply motor stators as defined under §1.2(d) of this appendix, or parts, components, and subassemblies of such frequency changers having all of the following characteristics:

1. A multiphase output of 600 Hz or greater; and

2. High stability (with frequency control better than 0.2 percent).

(f) Any other components especially designed or prepared for use in a gas centrifuge enrichment plant or in any of the components described in this appendix.

[79 FR 39291, July 10, 2014]

APPENDIX C TO PART 110—ILLUSTRATIVE LIST OF GASEOUS DIFFUSION ENRICHMENT PLANT ASSEMBLIES AND COMPONENTS UNDER NRC EXPORT LICENSING AUTHORITY

NOTE: In the gaseous diffusion method of uranium isotope separation, the main technological assembly is a special porous gaseous diffusion barrier, heat exchanger for cooling the gas (which is heated by the process of compression), seal valves and control valves, and pipelines. Inasmuch as gaseous diffusion technology uses uranium hexafluoride (UF_6), all equipment, pipeline and instrumentation surfaces (that come in contact with the gas) must be made of materials that remain stable in contact with UF_6. A gaseous diffusion facility requires a number of these assemblies, so that quantities can provide an important indication of end use.

The auxiliary systems, equipment, and components for gaseous diffusion enrichment plants are the systems of plant needed to feed UF_6 to the gaseous diffusion assembly to link the individual assemblies to each other to form cascades (or stages) to allow for progressively higher enrichments and to extract the ''product'' and ''tails'' UF_6 from the diffusion cascades. Because of the high inertial properties of diffusion cascades, any interruption in their operation, and especially their shut-down, leads to serious consequences. Therefore, a strict and constant maintenance of vacuum in all technological systems, automatic protection for accidents, and precise automated regulation of the gas flow is of importance in a gaseous diffusion plant. All this leads to a need to equip the plant with a large number of special measuring, regulating, and controlling systems.

Normally UF_6 is evaporated from cylinders placed within autoclaves and is distributed in gaseous form to the entry point by way of cascade header pipework. The ''product'' and ''tails'' UF_6 gaseous streams flowing from exit points are passed by way of cascade header pipework to either cold traps or to compression stations where the UF_6 gas is liquified prior to onward transfer into suitable containers for transportation or storage. Because a gaseous diffusion enrichment plant consists of a large number of gaseous diffusion assemblies arranged in cascades, there are many kilometers of cascade header pipework, incorporating thousands of welds with substantial amounts of repetition of layout. The equipment, components, and piping systems are fabricated to very high vacuum and cleanliness standards.

The items listed below either come into direct contact with the UF_6 process gas or directly control the flow within the cascade. All surfaces which come into contact with the process gas are wholly made of, or lined with, UF_6-resistant materials. For the purposes of this appendix, the materials resistant to corrosion by UF_6 include copper, copper alloys, stainless steel, aluminum, aluminum oxide, aluminum alloys, nickel or alloys containing 60 percent or more nickel and fluorinated hydrocarbon polymers.

1. Assemblies and components especially designed or prepared for use in gaseous diffusion enrichment.

1.1 Gaseous Diffusion Barriers and Barrier Materials

(a) Especially designed or prepared thin, porous filters, with a pore size of 10–100 nm, a thickness of 5 mm or less, and for tubular forms, a diameter of 25 mm or less, made of metallic, polymer or ceramic materials resistant to corrosion by UF_6 (See Note in §2 of this appendix).

(b) Especially prepared compounds or powders for the manufacture of such filters. Such compounds and powders include nickel or alloys containing 60 percent or more nickel, aluminum oxide, or UF_6-resistant fully fluorinated hydrocarbon polymers having a purity of 99.9 percent by weight or more, a particle size less than 10 μm, and a high degree of particle size uniformity, which are especially prepared for the manufacture of gaseous diffusion barriers.

1.2 Diffuser Housings

Especially designed or prepared hermetically sealed vessels for containing the gaseous diffusion barrier, made of or protected by UF_6-resistant materials (See Note in §2 of this appendix).

1.3 Compressors and Gas Blowers

Especially designed or prepared compressors or gas blowers with a suction volume capacity of 1 m^3 per minute or more of UF_6, and with a discharge pressure of up to 500 kPa, designed for long-term operation in the UF_6 environment, as well as separate assemblies of such compressors and gas blowers. These compressors and gas blowers have a pressure ratio of 10:1 or less and are made of, or protected by, materials resistant to UF_6 (See Note in §2 of this appendix).

1.4 Rotary Shaft Seals

Especially designed or prepared vacuum seals, with seal feed and seal exhaust connections, for sealing the shaft connecting the compressor or the gas blower rotor with the driver motor so as to ensure a reliable seal against in-leaking of air into the inner chamber of the compressor or gas blower which is filled with UF_6. Such seals are normally designed for a buffer gas in-leakage rate of less than 1000 cm^3 per minute.

1.5 Heat Exchangers for Cooling UF_6

Especially designed or prepared heat exchangers made of or protected by UF_6 resistant materials (see Note to §2 of this appendix) and intended for a leakage pressure change rate of less than 10 Pa per hour under a pressure difference of 100 kPa.

2. Auxiliary systems, equipment, and components especially designed or prepared for use in gaseous diffusion enrichment.

NOTE: The items listed below either come into direct contact with the UF_6 process gas or directly control the flow within the cascade. Materials resistant to corrosion by UF_6 include copper, copper alloys, stainless steel, aluminum, aluminum oxide, aluminum alloys, nickel or alloys containing 60 percent or more nickel, and fluorinated hydrocarbon polymers.

2.1 Feed Systems/Product and Tails Withdrawal Systems

Especially designed or prepared process systems or equipment for enrichment plants made of, or protected by, materials resistant to corrosion by UF_6, including:

(1) Feed autoclaves, ovens, or systems used for passing UF_6 to the enrichment process;

(2) Desublimers, cold traps, or pumps used to remove UF_6 from the enrichment process for subsequent transfer upon heating;

(3) Solidification or liquefaction stations used to remove UF_6 from the enrichment process by compressing and converting UF_6 to a liquid or solid form;

(4) ''Product'' or ''tails'' stations used for transferring UF_6 into containers.

2.2 Header Piping Systems

Especially designed or prepared piping systems and header systems for handling UF_6 within the gaseous diffusion cascades. This piping network is normally of the ''double'' header system with each cell connected to each of the headers.

2.3 Vacuum Systems

(a) Especially designed or prepared vacuum manifolds, vacuum headers and vacuum pumps having a suction capacity of 5 m^3 per minute or more.

(b) Vacuum pumps especially designed for service in UF_6-bearing atmospheres made of, or protected by, materials resistant to corrosion by UF_6 (See Note to this section). These pumps may be either rotary or positive displacement, may have fluorocarbon seals, and may have special working fluids present.

2.4 Special Shut-Off and Control Valves

Especially designed or prepared bellows-sealed valves, manual or automated, shut-off or control valves, made of, or protected by, materials resistant to corrosion by UF_6, for installation in main and auxiliary systems of gaseous diffusion enrichment plants.

2.5 UF_6 Mass Spectrometers/Ion Sources

Especially designed or prepared mass spectrometers capable of taking on-line samples from UF_6 gas streams and having all of the following:

(a) Capable of measuring ions of 320 atomic mass units or greater and having a resolution of better than 1 part in 320;

(b) ion sources constructed of or protected by nickel, nickel-copper alloys with a nickel content of 60 percent or more by weight, or nickel-chrome alloys;

(c) electron bombardment ionization sources; and

(d) having a collector system suitable for isotopic analysis.

3. Any other components especially designed or prepared for use in a gaseous diffusion enrichment plant or in any of the components described in this appendix.

[79 FR 39293, July 10, 2014]

APPENDIX D TO PART 110—ILLUSTRATIVE LIST OF AERODYNAMIC ENRICHMENT PLANT EQUIPMENT AND COMPONENTS UNDER NRC EXPORT LICENSING AUTHORITY

NOTE: In aerodynamic enrichment processes, a mixture of gaseous UF_6 and light gas (hydrogen or helium) is compressed and then passed through separating elements wherein isotopic separation is accomplished by the generation of high centrifugal forces over a curved-wall geometry. Two processes of this type have been successfully developed: The separation nozzle process and the vortex tube process. For both processes, the main components of a separation stage included cylindrical vessels housing the special separation elements (nozzles or vortex tubes), gas compressors, and heat exchangers to remove the heat of compression. An aerodynamic plant requires a number of these stages, so that quantities can provide an important indication of end use. Because aerodynamic processes use UF_6, all equipment, pipeline and instrumentation surfaces (that come in contact with the gas) must be made of, or protected by, materials that remain stable in contact with UF_6. All surfaces which come into contact with the process gas are made of, or protected by, UF_6-resistant materials; including copper, copper alloys, stainless steel, aluminum, aluminum oxide, aluminum alloys, nickel or alloys containing 60 percent or more nickel by weight, and fluorinated hydrocarbon polymers.

The following items either come into direct contact with the UF_6 process gas or directly control the flow within the cascade:

(1) Separation nozzles and assemblies.

Especially designed or prepared separation nozzles and assemblies thereof. The separation nozzles consist of slit-shaped, curved channels having a radius of curvature less than 1 mm, resistant to corrosion by UF_6 and having a knife-edge within the nozzle that separates the gas flowing through the nozzle into two fractions.

(2) Vortex tubes and assemblies.

Especially designed or prepared vortex tubes and assemblies thereof. The vortex tubes are cylindrical or tapered, made of, or protected by, materials resistant to corrosion by UF_6, and with one or more tangential inlets. The tubes may be equipped with nozzle-type appendages at either or both ends.

The feed gas enters the vortex tube tangentially at one end or through swirl vanes or at numerous tangential positions along the periphery of the tube.

(3) Compressors and gas blowers.

Especially designed or prepared compressors or gas blowers made of, or protected by, materials resistant to corrosion by the UF_6/carrier gas (hydrogen or helium) mixture.

(4) Rotary shaft seals.

Especially designed or prepared rotary shaft seals, with seal feed and seal exhaust connections, for sealing the shaft connecting the compressor rotor or the gas blower rotor with the driver motor to ensure a reliable seal against out-leakage of process gas or in-leakage of air or seal gas into the inner chamber of the compressor or gas blower which is filled with a UF_6/carrier gas mixture.

(5) Heat exchangers for gas cooling.

Especially designed or prepared heat exchangers, made of, or protected by, materials resistant to corrosion by UF_6.

(6) Separation element housings.

Especially designed or prepared separation element housings, made of, or protected by, materials resistant to corrosion by UF_6, for containing vortex tubes or separation nozzles.

(7) Feed systems/product and tails withdrawal systems.

Especially designed or prepared process systems or equipment for enrichment plants made of, or protected by, materials resistant to corrosion by UF_6, including:

(i) Feed autoclaves, ovens, or systems used for passing UF_6 to the enrichment process;

(ii) Desublimers (or cold traps) used to remove UF_6 from the enrichment process for subsequent transfer upon heating;

(iii) Solidification or liquefaction stations used to remove UF_6 from the enrichment process by compressing and converting UF_6 to a liquid or solid form; and

(iv) ''Product'' or ''tails'' stations used for transferring UF_6 into containers.

(8) Header piping systems.

Especially designed or prepared header piping systems, made of or protected by materials resistant to corrosion by UF_6, for handling UF_6 within the aerodynamic cascades. The piping network is normally of the ''double'' header design with each stage or group of stages connected to each of the headers.

(9) Vacuum systems and pumps.

(i) Especially designed or prepared vacuum systems consisting of vacuum manifolds, vacuum headers and vacuum pumps, and designed for service in UF_6-bearing atmospheres.

(ii) Especially designed or prepared vacuum pumps for service in UF_6-bearing atmospheres and made of, or protected by, materials resistant to corrosion by UF_6. These pumps may use fluorocarbon seals and special working fluids.

(10) Special shut-off and control valves.

Especially designed or prepared bellows-sealed valves, manual or automated, shut-off or control valves made of, or protected by, materials resistant to corrosion by UF_6 with a diameter of 40 mm or greater for installation in main and auxiliary systems of aerodynamic enrichment plants.

(11) UF_6 mass spectrometers/ion sources.

Especially designed or prepared mass spectrometers capable of taking on-line samples from UF_6 gas streams and having all of the following:

(i) Capable of measuring ions of 320 atomic mass units or greater and having a resolution of better than 1 part in 320;

(ii) Ion sources constructed of or protected by nickel, nickel-copper alloys with a nickel content of 60 percent or more by weight, or nickel-chrome alloys;

(iii) Electron bombardment ionization sources; and

(iv) Collector system suitable for isotopic analysis.

(12) UF_6/carrier gas separation systems.

Especially designed or prepared process systems for separating UF_6 from carrier gas (hydrogen or helium).

These systems are designed to reduce the UF_6 content in the carrier gas to 1 ppm or less and may incorporate equipment such as:

(i) Cryogenic heat exchangers and cryoseparators capable of temperatures of 153 K (–120 °C) or less;

(ii) Cryogenic refrigeration units capable of temperatures of 153 K (–120 °C) or less;

(iii) Separation nozzle or vortex tube units for the separation of UF_6 from carrier gas; or

(iv) UF6 cold traps capable of freezing out UF_6.

(13) Any other components especially designed or prepared for use in an aerodynamic enrichment plant or in any of the components described in this appendix.

[79 FR 39294, July 10, 2014]

APPENDIX E TO PART 110—ILLUSTRATIVE LIST OF CHEMICAL EXCHANGE OR ION EXCHANGE ENRICHMENT PLANT EQUIPMENT AND COMPONENTS UNDER NRC EXPORT LICENSING AUTHORITY

NOTE: The slight difference in mass between the isotopes of uranium causes small changes in chemical reaction equilibria that can be used as a basis for separation of the isotopes. Two processes have been successfully developed: Liquid-liquid chemical exchange and solid-liquid ion exchange.

A. In the liquid-liquid chemical exchange process, immiscible liquid phases (aqueous and organic) are countercurrently contacted to give the cascading effect of thousands of separation stages. The aqueous phase consists of uranium chloride in hydrochloric acid solution; the organic phase consists of an extractant containing uranium chloride in an organic solvent. The contactors employed in the separation cascade can be liquid-liquid exchange columns (such as pulsed columns with sieve plates) or liquid centrifugal contactors. Chemical conversions (oxidation and reduction) are required at both ends of the separation cascade in order to provide for the reflux requirements at each end. A major design concern is to avoid contamination of the process streams with certain metal ions. Plastic, plastic-lined (including use of fluorocarbon polymers) and/or glass-lined columns and piping are therefore used.

(1) Liquid-liquid exchange columns.

Countercurrent liquid-liquid exchange columns having mechanical power input especially designed or prepared for uranium enrichment using the chemical exchange process. For corrosion resistance to concentrated hydrochloric acid solutions, these columns and their internals are normally made of, or protected by, suitable plastic materials (such as fluorinated hydrocarbon polymers) or glass. The stage residence time of the columns is normally designed to be 30 seconds or less.

(2) Liquid-liquid centrifugal contactors.

Especially designed or prepared for uranium enrichment using the chemical exchange process. These contactors use rotation to achieve dispersion of the organic and aqueous streams and then centrifugal force to separate the phases. For corrosion resistance to concentrated hydrochloric acid solutions, the contactors are normally made of, or protected by, suitable plastic materials (such as fluorinated hydrocarbon polymers) or glass. The stage residence time of the centrifugal contactors is designed to be short (30 seconds or less).

(3) Uranium reduction systems and equipment.

(i) Especially designed or prepared electrochemical reduction cells to reduce uranium from one valence state to another for uranium enrichment using the chemical exchange process. The cell materials in contact with process solutions must be corrosion resistant to concentrated hydrochloric acid solutions.

The cell cathodic compartment must be designed to prevent re-oxidation of uranium to its higher valence state. To keep the uranium in the cathodic compartment, the cell may have an impervious diaphragm membrane constructed of special cation exchange material. The cathode consists of a suitable solid conductor such as graphite.

These systems consist of solvent extraction equipment for stripping the U^{+4} from the organic stream into an aqueous solution, evaporation and/or other equipment to accomplish solution pH adjustment and control, and pumps or other transfer devices for feeding to the electrochemical reduction cells. A major design concern is to avoid contamination of the aqueous stream with certain metal ions. For those parts in contact with the process stream, the system is constructed of equipment made of, or protected by, materials such as glass, fluorocarbon polymers, polyphenyl sulfate, polyether sulfone, and resin-impregnated graphite.

(ii) Especially designed or prepared systems at the product end of the cascade for taking the U^{+4} out of the organic stream, adjusting the acid concentration, and feeding to the electrochemical reduction cells.

These systems consist of solvent extraction equipment for stripping the U^{+4} from the organic stream into an aqueous solution, evaporation and/or other equipment to accomplish solution pH adjustment and control, and pumps or other transfer devices for feeding to the electrochemical reduction cells. A major design concern is to avoid contamination of the aqueous stream with certain metal ions. For those parts in contact with the process stream, the system is constructed of equipment made of, or protected by, materials such as glass, fluorocarbon polymers, polyphenyl sulfate, polyether sulfone, and resin-impregnated graphite.

(4) Feed preparation systems.

Especially designed or prepared systems for producing high-purity uranium chloride feed solutions for chemical exchange uranium isotope separation plants.

These systems consist of dissolution, solvent extraction and/or ion exchange equipment for purification and electrolytic cells for reducing the uranium U^{+6} or U^{+4} to U^{+3}. These systems produce uranium chloride solutions having only a few parts per million of metallic impurities such as chromium, iron, vanadium, molybdenum, and other bivalent or higher multi-valent cations. Materials of construction for portions of the system processing high-purity U^{+3} include glass, fluorinated hydrocarbon polymers,

polyphenyl sulfate or polyether sulfone plastic-lined and resin-impregnated graphite.

(5) Uranium oxidation systems.

Especially designed or prepared systems for oxidation of U^{+3} to U^{+4} for return to the uranium isotope separation cascade in the chemical exchange enrichment process.

These systems may incorporate equipment such as:

(i) Equipment for contacting chlorine and oxygen with the aqueous effluent from the isotope separation equipment and extracting the resultant U^{+4} into the stripped organic stream returning from the product end of the cascade; and

(ii) Equipment that separates water from hydrochloric acid so that the water and the concentrated hydrochloric acid may be reintroduced to the process at the proper locations.

B. In the solid-liquid ion-exchange process, enrichment is accomplished by uranium adsorption/desorption on a special, fast-acting, ion-exchange resin or adsorbent. A solution of uranium in hydrochloric acid and other chemical agents is passed through cylindrical enrichment columns containing packed beds of the adsorbent. For a continuous process, a reflux system is necessary to release the uranium from the adsorbent back in the liquid flow so that ''product'' and ''tails'' can be collected. This is accomplished with the use of suitable reduction/oxidation chemical agents that are fully regenerated in separate external circuits and that may be partially regenerated within the isotopic separation columns themselves. The presence of hot concentrated hydrochloric acid solutions in the process requires that the equipment be made of, or protected by, special corrosion-resistant materials.

(1) Fast reacting ion exchange resins/adsorbents.

Especially designed or prepared for uranium enrichment using the ion exchange process, including porous macroreticular resins, and/or pellicular structures in which the active chemical exchange groups are limited to a coating on the surface of an inactive porous support structure, and other composite structures in any suitable form including particles or fibers. These ion exchange resins/adsorbents have diameters of 0.2 mm or less and must be chemically resistant to concentrated hydrochloric acid solutions as well as physically strong enough so as not to degrade in the exchange columns. The resins/adsorbents are especially designed to achieve very fast uranium isotope exchange kinetics (exchange rate half-time of less than 10 seconds) and are capable of operating at a temperature in the range of 373 K (100 °C) to 473 K (200 °C).

(2) Ion exchange columns.

Cylindrical columns greater than 1000 mm in diameter for containing and supporting packed beds of ion exchange resin/adsorbent, especially designed or prepared for uranium enrichment using the ion exchange process. These columns are made of, or protected by, materials (such as titanium or fluorocarbon plastics) resistant to corrosion by concentrated hydrochloric acid solutions and are capable of operating at a temperature in the range of 373 K (100 °C) to 473 K (200 °C) and pressures above 0.7 MPa.

(3) Ion exchange reflux systems.

(i) Especially designed or prepared chemical or electrochemical reduction systems for regeneration of the chemical reducing agent(s) used in ion exchange uranium enrichment cascades.

The ion exchange enrichment process may use, for example, trivalent titanium (Ti^{+3}) as a reducing cation in which case the reduction system would regenerate Ti^{+3} by reducing Ti^{+4}.

(ii) Especially designed or prepared chemical or electrochemical oxidation systems for regeneration of the chemical oxidizing agent(s) used in ion exchange uranium enrichment cascades.

The ion exchange enrichment process may use, for example, trivalent iron (Fe^{+3}) as an oxidant in which case the oxidation system would regenerate Fe^{+3} by oxidizing Fe^{+2}.

C. Any other components especially designed or prepared for use in a chemical exchange or ion exchange enrichment plant or in any of the components described in this appendix.

[79 FR 39295, July 10, 2014]

Appendix F to Part 110—Illustrative List of Laser-Based Enrichment Plant Equipment and Components Under NRC Export Licensing Authority

NOTE: Present systems for enrichment processes using lasers fall into two categories: The process medium is atomic uranium vapor and the process medium is the vapor of a uranium compound, sometimes mixed with another gas or gases. Common nomenclature for these processes include: First category-atomic vapor laser isotope separation; and second category-molecular laser isotope separation including chemical reaction by isotope selective laser activation. The systems, equipment, and components for laser enrichment plants include: (a) Devices to feed uranium-metal vapor for selective photo-ionization or devices to feed the vapor of a uranium compound (for selective photo-dissociation or selective excitation/activation); (b) devices to collect enriched and depleted uranium metal as ''product'' and ''tails'' in the first category, and devices to collect enriched and depleted uranium compounds as ''product'' and ''tails'' in the second category; (c) process

laser systems to selectively excite the uranium-235 species; and (d) feed preparation and product conversion equipment. The complexity of the spectroscopy of uranium atoms and compounds may require incorporation of a number of available laser and laser optics technologies.

All surfaces that come into direct contact with the uranium or UF_6 are wholly made of, or protected by, corrosion-resistant materials. For laser-based enrichment items, the materials resistant to corrosion by the vapor or liquid of uranium metal or uranium alloys include yttria-coated graphite and tantalum; and the materials resistant to corrosion by UF_6 include copper, copper alloys, stainless steel, aluminum, aluminum oxide, aluminum alloys, nickel or alloys containing 60 percent or more nickel by weight, and fluorinated hydrocarbon polymers. Many of the following items come into direct contact with uranium metal vapor or liquid or with process gas consisting of UF_6 or a mixture of UF_6 and other gases:

(1) Uranium vaporization systems (atomic vapor based methods).

Especially designed or prepared uranium metal vaporization systems for use in laser enrichment.

These systems may contain electron beam guns and are designed to achieve a delivered power (1 kW or greater) on the target sufficient to generate uranium metal vapour at a rate required for the laser enrichment function.

(2) Liquid or vapor uranium metal handling systems and components (atomic vapor based methods).

Especially designed or prepared systems for handling molten uranium, molten uranium alloys, or uranium metal vapor.

The liquid uranium metal handling systems may consist of crucibles and cooling equipment for the crucibles. The crucibles and other system parts that come into contact with molten uranium, molten uranium alloys, or uranium metal vapor are made of, or protected by, materials of suitable corrosion and heat resistance, such as tantalum, yttria-coated graphite, graphite coated with other rare earth oxides, or mixtures thereof.

(3) Uranium metal ''product'' and ''tails'' collector assemblies (atomic vapor based methods).

Especially designed or prepared ''product'' and ''tails'' collector assemblies for uranium metal in liquid or solid form.

Components for these assemblies are made of or protected by materials resistant to the heat and corrosion of uranium metal vapor or liquid, such as yttria-coated graphite or tantalum, and may include pipes, valves, fittings, ''gutters,'' feed-throughs, heat exchangers and collector plates for magnetic, electrostatic, or other separation methods.

(4) Separator module housings (atomic vapor based methods).

Especially designed or prepared cylindrical or rectangular vessels for containing the uranium metal vapor source, the electron beam gun, and the ''product'' and ''tails'' collectors. These housings have multiplicity of ports for electrical and water feed-throughs, laser beam windows, vacuum pump connections, and instrumentation diagnostics and monitoring with opening and closure provisions to allow refurbishment of internal components.

(5) Supersonic expansion nozzles (molecular based methods).

Especially designed or prepared supersonic expansion nozzles for cooling mixtures of UF_6 and carrier gas to 150 K (−123 °C) or less which are corrosion resistant to UF_6.

(6) ''Product'' or ''tails'' collectors (molecular based methods).

Especially designed or prepared components or devices for collecting uranium product material or uranium tails material following illumination with laser light.

In one example of molecular laser isotope separation, the product collectors serve to collect enriched uranium pentafluoride (UF_5) solid material. The product collectors may consist of filter, impact, or cyclone-type collectors, or combinations thereof, and must be corrosion resistant to the UF_5/UF_6 environment.

(7) UF_6/carrier gas compressors (molecular based methods).

Especially designed or prepared compressors for UF_6/carrier gas mixtures, designed for long term operation in a UF_6 environment. Components of these compressors that come into contact with process gas are made of, or protected by, materials resistant to UF_6 corrosion.

(8) Rotary shaft seals (molecular based methods).

Especially designed or prepared rotary shaft seals, with seal feed and seal exhaust connections, for sealing the shaft connecting the compressor rotor with the driver motor to ensure a reliable seal against out-leakage of process gas or in-leakage of air or seal gas into the inner chamber of the compressor which is filled with a UF_6/carrier gas mixture.

(9) Fluorination systems (molecular based methods).

Especially designed or prepared systems for fluorinating UF_5 (solid) to UF_6 (gas).

These systems are designed to fluorinate the collected UF_5 powder to UF_6 for subsequent collection in product containers or for transfer as feed for additional enrichment. In one approach, the fluorination reaction may be accomplished within the isotope separation system to react and recover directly off the ''product'' collectors. In another approach, the UF_5 powder may be removed/transferred from the ''product'' collectors into a suitable reaction vessel (e.g., fluidized-bed reactor, screw reactor or flame

tower) for fluorination. In both approaches, equipment is used for storage and transfer of fluorine (or other suitable fluorinating agents) and for collection and transfer of UF_6.

(10) UF_6 mass spectrometers/ion sources (molecular based methods).

Especially designed or prepared mass spectrometers capable of taking on-line samples from UF_6 gas streams and having all of the following characteristics:

(i) Capable of measuring ions of 320 atomic mass units or greater and having a resolution of better than 1 part in 320;

(ii) Ion sources constructed of or protected by nickel, nickel-copper alloys with a nickel content of 60 percent or more by weight, or nickel-chrome alloys;

(iii) Electron bombardment ionization sources; and

(iv) Collector system suitable for isotopic analysis.

(11) Feed systems/product and tails withdrawal systems (molecular based methods).

Especially designed or prepared process systems or equipment for enrichment plants made of or protected by materials resistant to corrosion by UF_6, including:

(i) Feed autoclaves, ovens, or systems used for passing UF_6 to the enrichment process;

(ii) Desublimers (or cold traps) used to remove UF_6 from the enrichment process for subsequent transfer upon heating;

(iii) Solidification or liquefaction stations used to remove UF_6 from the enrichment process by compressing and converting UF_6 to a liquid or solid; and

(iv) ''Product'' or ''tails'' stations used to transfer UF_6 into containers.

(12) UF_6/carrier gas separation systems (molecular based methods).

Especially designed or prepared process systems for separating UF_6 from carrier gas.

These systems may incorporate equipment such as:

(i) Cryogenic heat exchangers or cryoseparators capable of temperatures of 153 K (-120 °C) or less;

(ii) Cryogenic refrigeration units capable of temperatures of 153 K (-120 °C) or less; or

(iii) UF_6 cold traps capable of freezing out UF_6.

(13) Lasers or Laser systems.

Especially designed or prepared for the separation of uranium isotopes.

The laser system typically contains both optical and electronic components for the management of the laser beam (or beams) and the transmission to the isotope separation chamber. The laser system for atomic vapor based methods usually consists of tunable dye lasers pumped by another type of laser (e.g., copper vapor lasers or certain solid-state lasers). The laser system for molecular based methods may consist of CO_2 lasers or excimer lasers and a multi-pass optical cell. Lasers or laser systems for both methods require spectrum frequency stabilization for operation over extended periods of time.

(14) Any other components especially designed or prepared for use in a laser-based enrichment plant or in any of the components described in this appendix.

[79 FR 39296, July 10, 2014]

Appendix G to Part 110—Illustrative List of Plasma Separation Enrichment Plant Equipment and Components Under NRC Export Licensing Authority

Note: In the plasma separation process, a plasma of uranium ions passes through an electric field tuned to the ^{235}U ion resonance frequency so that they preferentially absorb energy and increase the diameter of their corkscrew-like orbits. Ions with a large-diameter path are trapped to produce a product enriched in ^{235}U. The plasma, made by ionizing uranium vapor, is contained in a vacuum chamber with a high-strength magnetic field produced by a superconducting magnet. The main technological systems of the process include the uranium plasma generation system, the separator module with superconducting magnet, and metal removal systems for the collection of ''product'' and ''tails.''

(1) Microwave power sources and antennae.

Especially designed or prepared microwave power sources and antennae for producing or accelerating ions having the following characteristics: Greater than 30 GHz frequency and greater than 50 kW mean power output for ion production.

(2) Ion excitation coils.

Especially designed or prepared radio frequency ion excitation coils for frequencies of more than 100 kHz and capable of handling more than 40 kW mean power.

(3) Uranium plasma generation systems.

Especially designed or prepared systems for the generation of uranium plasma for use in plasma separation plants.

(4) Uranium metal ''product'' and ''tails'' collector assemblies.

Especially designed or prepared ''product'' and ''tails'' collector assemblies for uranium metal in solid form. These collector assemblies are made of, or protected by, materials resistant to the heat and corrosion of uranium metal vapor, such as yttria-coated graphite or tantalum.

(5) Separator module housings.

Especially designed or prepared cylindrical vessels for use in plasma separation enrichment plants for containing the uranium plasma source, radio-frequency drive coil, and the ''product'' and ''tails'' collectors.

These housings have a multiplicity of ports for electrical feed-throughs, diffusion pump connections, and instrumentation

diagnostics and monitoring. They have provisions for opening and closure to allow for refurbishment of internal components and are constructed of a suitable non-magnetic material such as stainless steel.

(6) Any other components especially designed or prepared for use in a plasma separation enrichment plant or in any of the components described in this appendix.

[79 FR 39297, July 10, 2014]

APPENDIX H TO PART 110—ILLUSTRATIVE LIST OF ELECTROMAGNETIC ENRICHMENT PLANT EQUIPMENT AND COMPONENTS UNDER NRC EXPORT LICENSING AUTHORITY

NOTE: In the electromagnetic process, uranium metal ions produced by ionization of a salt feed material (typically UCL4) are accelerated and passed through a magnetic field that has the effect of causing the ions of different isotopes to follow different paths. The major components of an electromagnetic isotope separator include: a magnetic field for ion-beam diversion/separation of the isotopes, an ion source with its acceleration system, and a collection system for the separated ions. Auxiliary systems for the process include the magnet power supply system, the ion source high-voltage power supply system, the vacuum system, and extensive chemical handling systems for recovery of product and cleaning/recycling of components.

(1) Electromagnetic isotope separators.

Especially designed or prepared for the separation of uranium isotopes, and equipment and components therefor, including:

(i) Ion Sources—especially designed or prepared single or multiple uranium ion sources consisting of a vapor source, ionizer, and beam accelerator, constructed of materials such as graphite, stainless steel, or copper, and capable of providing a total ion beam current of 50 mA or greater;

(ii) Ion collectors—collector plates consisting of two or more slits and pockets especially designed or prepared for collection of enriched and depleted uranium ion beams and constructed of materials such as graphite or stainless steel;

(iii) Vacuum housings—especially designed or prepared vacuum housings for uranium electromagnetic separators, constructed of suitable non-magnetic materials such as stainless steel and designed for operation at pressures of 0.1 Pa or lower.

The housings are specially designed to contain the ion sources, collector plates and water-cooled liners and have provision for diffusion pump connections and opening and closure for removal and reinstallation of these components; and

(iv) Magnet pole pieces—especially designed or prepared magnet pole pieces having a diameter greater than 2 m used to maintain a constant magnetic field within an electromagnetic isotope separator and to transfer the magnetic field between adjoining separators.

(2) High voltage power supplies.

Especially designed or prepared high-voltage power supplies for ion sources, having all of the following characteristics:

(i) Capable of continuous operation;

(ii) Output voltage of 20,000 V or greater;

(iii) Output current of 1 A or greater; and

(iv) Voltage regulation of better than 0.01% over an 8 hour time period.

(3) Magnet power supplies.

Especially designed or prepared high-power, direct current magnet power supplies having all of the following characteristics:

(i) Capable of continuously producing a current output of 500 A or greater at a voltage of 100 V or greater; and

(ii) A current or voltage regulation better than 0.01% over an 8 hour time period.

(4) Any other components especially designed or prepared for use in an electromagnetic enrichment plant or in any of the components described in this appendix.

[61 FR 35606, July 8, 1996, as amended at 79 FR 39297, July 10, 2014]

APPENDIX I TO PART 110—ILLUSTRATIVE LIST OF REPROCESSING PLANT COMPONENTS UNDER NRC EXPORT LICENSING AUTHORITY

NOTE: Reprocessing irradiated nuclear fuel separates plutonium and uranium from intensely radioactive fission products and other transuranic elements. Different technical processes can accomplish this separation. However, over the years Purex has become the most commonly used and accepted process. Purex involves the dissolution of irradiated nuclear fuel in nitric acid, followed by separation of the uranium, plutonium, and fission products by solvent extraction using a mixture of tributyl phosphate in an organic diluent.

Purex facilities have process functions similar to each other, including: Irradiated fuel element chopping, fuel dissolution, solvent extraction, and process liquor storage. There may also be equipment for thermal denitration of uranium nitrate, conversion of plutonium nitrate to oxide metal, and treatment of fission product waste liquor to a form suitable for long term storage or disposal. However, the specific type and configuration of the equipment performing these functions may differ between Purex facilities for several reasons, including the type and quantity of irradiated nuclear fuel to be reprocessed and the intended disposition of the recovered materials, and the safety and maintenance philosophy incorporated into the design of the facility. A plant for

the reprocessing of irradiated fuel elements includes the equipment and components which normally come in direct contact with and directly control the irradiated fuel and the major nuclear material and fission product processing streams.

(1) Irradiated fuel element decladding equipment and chopping machines.

Remotely operated equipment especially designed or prepared for use in a reprocessing plant and intended to expose or prepare the irradiated nuclear fuel assemblies, bundles, or rods for processing. This equipment cuts, chops, shears, or otherwise breaches the cladding of the fuel to expose the irradiated nuclear material for processing or prepares the fuel for processing. Especially designed cutting shears are most commonly employed, although advanced equipment, such as lasers, peeling machines, or other techniques, may be used. Decladding involves removing the cladding of the irradiated nuclear fuel prior to its dissolution.

(2) Dissolvers.

Dissolver vessels or dissolvers employing mechanical devices especially designed or prepared for use in a reprocessing plant, intended for dissolution of irradiated nuclear fuel and which are capable of withstanding hot, highly corrosive liquid, and which can be remotely loaded, operated and maintained.

Dissolvers normally receive the solid, irradiated nuclear fuel. Nuclear fuels with cladding made of material including zirconium, stainless steel, or alloys of such materials must be decladded and/or sheared or chopped prior to being charged to the dissolver to allow the acid to reach the fuel matrix. The irradiated nuclear fuel is typically dissolved in strong mineral acids, such as nitric acid, and any undissolved cladding removed. While certain design features, such as small diameter, annular, or slab tanks may be used to ensure criticality safety, they are not a necessity. Administrative controls, such as small batch size or low fissile material content, may be used instead. Dissolver vessels and dissolvers employing mechanical devices are normally fabricated of material such as low carbon stainless steel, titanium or zirconium, or other high-quality materials. Dissolvers may include systems for the removal of cladding or cladding waste and systems for the control and treatment of radioactive off-gases. These dissolvers may have features for remote placement since they are normally loaded, operated, and maintained behind thick shielding.

(3) Solvent extractors and solvent extraction equipment.

Especially designed or prepared solvent extractors such as packed or pulse columns, mixer settlers, or centrifugal contactors for use in a plant for the reprocessing of irradiated fuel. Solvent extractors must be resistant to the corrosive effect of nitric acid. Solvent extractors are normally fabricated to extremely high standards (including special welding and inspection and quality assurance and quality control techniques) out of low carbon stainless steels, titanium, zirconium, or other high quality materials.

Solvent extractors both receive the solution of irradiated fuel from the dissolvers and the organic solution which separates the uranium, plutonium, and fission products. Solvent extraction equipment is normally designed to meet strict operating parameters, such as long operating lifetimes with no maintenance requirements or adaptability to easy replacement, simplicity of operation and control, and flexibility for variations in process conditions.

(4) Chemical holding or storage vessels.

Especially designed or prepared holding or storage vessels for use in a plant for the reprocessing of irradiated fuel. The holding or storage vessels must be resistant to the corrosive effect of nitric acid. The holding or storage vessels are normally fabricated of materials such as low carbon stainless steels, titanium or zirconium, or other high quality materials. Holding or storage vessels may be designed for remote operation and maintenance and may have the following features for control of nuclear criticality:

(i) Walls or internal structures with a boron equivalent of at least 2 percent, or

(ii) A maximum diameter of 175 mm (7 in) for cylindrical vessels, or

(iii) A maximum width of 75 mm (3 in) for either a slab or annular vessel.

(5) Neutron measurement systems for process control.

Neutron measurement systems especially designed or prepared for integration and use with automated process control systems in a plant for the reprocessing of irradiated fuel elements. These systems involve the capability of active and passive neutron measurement and discrimination in order to determine the fissile material quantity and composition. The complete system is composed of a neutron generator, a neutron detector, amplifiers, and signal processing electronics.

The scope of this entry does not include neutron detection and measurement instruments that are designed for nuclear material accountancy and safeguarding or any other application not related to integration and use with automated process control systems in a plant for the reprocessing of irradiated fuel elements.

(6) Plutonium nitrate to plutonium oxide conversion systems. Complete systems especially designed or prepared for the conversion of plutonium nitrate to plutonium oxide, in particular adapted so as to avoid criticality and radiation effects and to minimize toxicity hazards.

(7) Plutonium metal production systems. Complete systems especially designed or prepared for the production of plutonium metal,

in particular adapted so as to avoid criticality and radiation effects and to minimize toxicity hazards.

(8) Process control instrumentation specially designed or prepared for monitoring or controlling the processing of material in a reprocessing plant.

(9) Any other components especially designed or prepared for use in a reprocessing plant or in any of the components described in this appendix.

[79 FR 39297, July 10, 2014, as amended at 86 FR 40142, July 27, 2021]

APPENDIX J TO PART 110—ILLUSTRATIVE LIST OF URANIUM CONVERSION PLANT EQUIPMENT AND PLUTONIUM CONVERSION PLANT EQUIPMENT UNDER NRC EXPORT LICENSING AUTHORITY

NOTE: Uranium conversion plants and systems may perform one or more transformations from one uranium chemical species to another, including: conversion of uranium ore concentrates to UO3, conversion of UO3 to UO2, conversion of uranium oxides to UF4 or UF6, conversion of UF4 to UF6, conversion of UF6 to UF4, conversion of UF4 to uranium metal, and conversion of uranium fluorides to UO2. Many key equipment items for uranium conversion plants are common to several segments of the chemical process industry, including furnaces, rotary kilns, fluidized bed reactors, flame tower reactors, liquid centrifuges, distillation columns and liquid-liquid extraction columns. However, few of the items are available ''off-the-shelf''; most would be prepared according to customer requirements and specifications. Some require special design and construction considerations to address the corrosive properties of the chemicals handled (HF, F2, CLF3, and uranium fluorides). In all of the uranium conversion processes, equipment which individually is not especially designed or prepared for uranium conversion can be assembled into systems which are especially designed or prepared for uranium conversion.

(a) Uranium Conversion Plant Equipment.

(1) Especially designed or prepared systems for the conversion of uranium ore concentrates to UO3.

Conversion of uranium ore concentrates to UO3 can be performed by first dissolving the ore in nitric acid and extracting purified uranyl nitrate using a solvent such as tributyl phosphate. Next, the uranyl nitrate is converted to UO3 either by concentration and denitration or by neutralization with gaseous ammonia to produce ammonium diuranate with subsequent filtering, drying, and calcining.

(2) Especially designed or prepared systems for the conversion of UO3 to UF6.

Conversion of UO3 to UF6 can be performed directly by fluorination. The process requires a source of fluorine gas or chlorine trifluoride.

(3) Especially Designed or Prepared Systems for the conversion of UO3 to UO2.

Conversion of UO3 to UO2 can be performed through reduction of UO3 with cracked ammonia gas or hydrogen.

(4) Especially Designed or Prepared Systems for the conversion of UO2 to UF4.

Conversion of UO2 to UF4 can be performed by reacting UO2 with hydrogen fluoride gas (HF) at 300–500 °C.

(5) Especially Designed or Prepared Systems for the conversion of UF4 to UF6.

Conversion of UF4 to UF6 is performed by exothermic reaction with fluorine in a tower reactor. UF6 is condensed from the hot effluent gases by passing the effluent stream through a cold trap cooled to −10 °C. The process requires a source of fluorine gas.

(6) Especially Designed or Prepared Systems for the conversion of UF4 to U metal.

Conversion of UF4 to U metal is performed by reduction with magnesium (large batches) or calcium (small batches). The reaction is carried out at temperatures above the melting point of uranium (1130 °C).

(7) Especially designed or prepared systems for the conversion of UF6 to UO2.

Conversion of UF6 to UO2 can be performed by one of three processes. In the first, UF6 is reduced and hydrolyzed to UO2 using hydrogen and steam. In the second, UF6 is hydrolyzed by solution in water, ammonia is added to precipitate ammonium diuranate, and the diuranate is reduced to UO2 with hydrogen at 820 °C. In the third process, gaseous UF6, CO2, and NH3 are combined in water, precipitating ammonium uranyl carbonate. The ammonium uranyl carbonate is combined with steam and hydrogen at 500–600 °C to yield UO2. UF6 to UO2 conversion is often performed as the first stage of a fuel fabrication plant.

(8) Especially Designed or Prepared Systems for the conversion of UF6 to UF4. Conversion of UF6 to UF4 is performed by reduction with hydrogen.

(9) Especially designed or prepared systems for the conversion of UO_2 to UCl_4 as feed for electromagnetic enrichment.

NOTE: Plutonium conversion plants and systems may perform one or more transformations from one plutonium chemical species to another, including: conversion of plutonium nitrate to PuO_2, conversion of PuO_2 to PuF_4 and conversion of PuF_4 to plutonium metal. Plutonium conversion plants are usually associated with reprocessing facilities, but may also be associated with plutonium fuel fabrication facilities. Many of the key equipment items for plutonium conversion plants are common to several segments of the chemical process industry. For example, the types of equipment employed in

these processes may include the following items: furnaces, rotary kilns, fluidized bed reactors, flame tower reactors, liquid centrifuges, distillation columns and liquid-liquid extraction columns. Hot cells, glove boxes and remote manipulators may also be required. However, few of the items are available off-the-shelf; most would be prepared according to the requirements and specifications of the customer. Particular care is essential in designing for the special radiological, toxicity and criticality hazards associated with plutonium. In some circumstances, special design and construction considerations are required to address the corrosive properties of some of the chemicals handled (e.g., HF). Finally, it should be noted that, for all plutonium conversion processes, items of equipment which individually are not especially designed or prepared for plutonium conversion can be assembled into systems that are especially designed or prepared for use in plutonium conversion.

(b) Plutonium Conversion Plant Equipment

(1) Especially designed or prepared systems for the conversion of plutonium nitrate to oxide.

The main functions involved in this process are: process feed storage and adjustment, precipitation and solid/liquor separation, calcination, product handling, ventilation, waste management, and process control. The process systems are particularly adapted so as to avoid criticality and radiation effects and to minimize toxicity hazards. In most reprocessing facilities, this process involves the conversion of plutonium nitrate to plutonium dioxide. Other processes can involve the precipitation of plutonium oxalate or plutonium peroxide.

(2) Especially designed or prepared systems for plutonium metal production.

This process usually involves the fluorination of plutonium dioxide, normally with highly corrosive hydrogen fluoride, to produce plutonium fluoride, which is subsequently reduced using high purity calcium metal to produce metallic plutonium and a calcium fluoride slag. The main functions involved in this process are the following: fluorination (e.g., involving equipment fabricated or lined with a precious metal), metal reduction (e.g., employing ceramic crucibles), slag recovery, product handling, ventilation, waste management and process control. The process systems are particularly adapted so as to avoid criticality and radiation effects and to minimize toxicity hazards. Other processes include the fluorination of plutonium oxalate or plutonium peroxide followed by reduction to metal.

(c) Any other components especially designed or prepared for use in a uranium conversion plant or plutonium conversion plant or in any of the components described in this appendix.

[61 FR 35606, July 8, 1996, as amended at 65 FR 70291, Nov. 22, 2000; 79 FR 39298, July 10, 2014]

APPENDIX K TO PART 110—ILLUSTRATIVE LIST OF EQUIPMENT AND COMPONENTS UNDER NRC EXPORT LICENSING AUTHORITY FOR USE IN A PLANT FOR THE PRODUCTION OF HEAVY WATER, DEUTERIUM AND DEUTERIUM COMPOUNDS

NOTE: Heavy water can be produced by a variety of processes. However, two processes have proven to be commercially viable: The water-hydrogen sulphide exchange process (GS process) and the ammonia-hydrogen exchange process.

A. The GS process is based upon the exchange of hydrogen and deuterium between water and hydrogen sulphide within a series of towers which are operated with the top section cold and the bottom section hot. Water flows down the towers while the hydrogen sulphide gas circulates from the bottom to the top of the towers. A series of perforated trays are used to promote mixing between the gas and the water. Deuterium migrates to the water at low temperatures and to the hydrogen sulphide at high temperatures. Gas or water, enriched in deuterium, is removed from the first stage towers at the junction of the hot and cold sections and the process is repeated in subsequent stage towers. The product of the last stage, water enriched up to 30 percent in deuterium, is sent to a distillation unit to produce reactor grade heavy water; *i.e.*, 99.75 percent deuterium oxide.

B. The ammonia-hydrogen exchange process can extract deuterium from synthesis gas through contact with liquid ammonia in the presence of a catalyst. The synthesis gas is fed into exchange towers and then to an ammonia converter. Inside the towers the gas flows from the bottom to the top while the liquid ammonia flows from the top to the bottom. The deuterium is stripped from the hydrogen in the synthesis gas and concentrated in the ammonia. The ammonia then flows into an ammonia cracker at the bottom of the tower while the gas flows into an ammonia converter at the top. Further enrichment takes place in subsequent stages and reactor-grade heavy water is produced through final distillation. The synthesis gas feed can be provided by an ammonia plant that can be constructed in association with a heavy water ammonia-hydrogen exchange plant. The ammonia-hydrogen exchange process can also use ordinary water as a feed source of deuterium.

C.1. Much of the key equipment for heavy water production plants using either the GS process or the ammonia-hydrogen exchange process are common to several segments of the chemical and petroleum industries; particularly in small plants using the GS process. However, few items are available ''off-the-shelf.'' Both processes require the handling of large quantities of flammable, corrosive, and toxic fluids at elevated pressures. Therefore, in establishing the design and operating standards for plants and equipment using these processes, careful attention to materials selection and specifications is required to ensure long service life with high safety and reliability factors. The choice is primarily a function of economics and need. Most equipment, therefore, is prepared to customer requirements.

In both processes, equipment which individually is not especially designed or prepared for heavy water production can be assembled into especially designed or prepared systems for producing heavy water. Examples of such systems are the catalyst production system used in the ammonia-hydrogen exchange process and the water distillation systems used for the final concentration of heavy water to reactor-grade in either process.

C.2. Equipment especially designed or prepared for the production of heavy water utilizing either the water-hydrogen sulphide exchange process or the ammonia-hydrogen exchange process:

(i) Water-hydrogen Sulphide Exchange Towers.

Exchange towers with diameters of 1.5 m or greater and capable of operating at pressures greater than or equal to 2 MPa (300 psi) especially designed or prepared for heavy water production utilizing the water-hydrogen sulphide exchange process.

(ii) Blowers and Compressors.

Single stage, low head (*i.e.*, 0.2 MPa or 30 psi) centrifugal blowers or compressors for hydrogen-sulphide gas circulation (*i.e.*, gas containing more than 70 percent H2S). The blowers or compressors have a throughput capacity greater than or equal to 56 m^3/second (120,000 standard cubic feet per minute) while operating at pressures greater than or equal to 1.8 MPa (260 psi) suction and have seals designed for wet H2S service.

(iii) Ammonia-Hydrogen Exchange Towers.

Ammonia-hydrogen exchange towers greater than or equal to 35 m (114.3 ft) in height with diameters of 1.5 m (4.9 ft) to 2.5 m (8.2 ft) capable of operating at pressures greater than 15 MPa (2225 psi). The towers have at least one flanged, axial opening of the same diameter as the cylindrical part through which the tower internals can be inserted or withdrawn.

(iv) Tower Internals and Stage Pumps Used in the Ammonia-hydrogen Exchange Process.

Tower internals include especially designed stage contactors which promote intimate gas/liquid contact. Stage pumps include especially designed submersible pumps for circulation of liquid ammonia within a contacting stage internal to the stage towers.

(v) Ammonia Crackers Utilizing the Ammonia-hydrogen Exchange Process.

Ammonia crackers with operating pressures greater than or equal to 3 MPa (450 psi) especially designed or prepared for heavy water production utilizing the ammonia-hydrogen exchange process.

(vi) Ammonia Synthesis Converters or Synthesis Units.

Ammonia synthesis converters or synthesis units especially designed or prepared for heavy water production utilizing the ammonia-hydrogen exchange process.

These converters or units take synthesis gas (nitrogen and hydrogen) from an ammonia/hydrogen high-pressure exchange column (or columns), and the synthesized ammonia is returned to the exchange column (or columns).

(vii) Infrared Absorption Analyzers.

Infrared absorption analyzers capable of ''on-line'' hydrogen/deuterium ratio analysis where deuterium concentrations are equal to or greater than 90 percent.

(viii) Catalytic Burners Used in the Ammonia-hydrogen Exchange Process.

Catalytic burners for the conversion of enriched deuterium gas into heavy water especially designed or prepared for heavy water production utilizing the ammonia-hydrogen exchange process.

(ix) Complete Heavy Water Upgrade Systems or Columns.

Complete heavy water upgrade systems or columns especially designed or prepared for the upgrade of heavy water to reactor-grade deuterium concentration. These systems, which usually employ water distillation to separate heavy water from light water, are especially designed or prepared to produce reactor-grade heavy water (*i.e.*, typically 99.75 percent deuterium oxide) from heavy water feedstock of lesser concentration.

D. Any other components especially designed or prepared for use in a plant for the production of heavy water, deuterium, and deuterium compounds or in any of the components described in this appendix.

[79 FR 39298, July 10, 2014]

APPENDIX L TO PART 110—ILLUSTRATIVE LIST OF BYPRODUCT MATERIALS UNDER NRC EXPORT/IMPORT LICENSING AUTHORITY [A]

[a] Any accelerator-produced material produced, extracted, or converted for use for a commercial, medical, or research activity.

Actinium 225 (Ac 225)
Actinium 227 (Ac 227)
Actinium 228 (Ac 228)
Americium 241 (Am 241)
Americium 242m (Am 242m)
Americium 242 (Am 242)
Americium 243 (Am 243)
Antimony 124 (Sb 124)
Antimony 125 (Sb 125)
Antimony 126 (Sb 126)
Arsenic 73 (As 73)
Arsenic 74 (As 74)
Arsenic 76 (As 76)
Arsenic 77 (As 77)
Barium 131 (Ba 131)
Barium 133 (Ba 133)
Barium 140 (Ba 140)
Bismuth 207 (Bi 207)
Bismuth 210 (Bi 210)
Bromine 82 (Br 82)
Cadmium 109 (Cd 109)
Cadmium 113 (Cd 113)
Cadmium 115m (Cd 115m)
Cadmium 115 (Cd 115)
Calcium 45 (Ca 45)
Calcium 47 (Ca 47)
Californium 248 (Cf 248)
Californium 249 (Cf 249)
Californium 250 (Cf 250)
Californium 251 (Cf 251)
Californium 252 (Cf 252)
Californium 253 (Cf 253)
Californium 254 (Cf 254)
Carbon 11 (C 11)
Carbon 14 (C 14)
Cerium 141 (Ce 141)
Cerium 143 (Ce 143)
Cerium 144 (Ce 144)
Cesium 129 (Cs 129)
Cesium 131 (Cs 131)
Cesium 134m (Cs 134m)
Cesium 134 (Cs 134)
Cesium 135 (Cs 135)
Cesium 136 (Cs 136)
Cesium 137 (Cs 137)
Chlorine 36 (Cl 36)
Chlorine 38 (Cl 38)
Chromium 51 (Cr 51)
Cobalt 57 (Co 57)
Cobalt 58m (Co 58m)
Cobalt 58 (Co 58)
Cobalt 60 (Co 60)
Copper 64 (Cu 64)
Curium 240 (Cm 240)
Curium 241 (Cm 241)
Curium 242 (Cm 242)
Curium 243 (Cm 243)
Curium 244 (Cm 244)
Curium 245 (Cm 245)
Curium 247 (Cm 247)
Dysprosium 165 (Dy 165)
Dysprosium 166 (Dy 166)
Einsteinium 252 (Es 252)
Einsteinium 253 (Es 253)
Einsteinium 254 (Es 254)
Einsteinium 255 (Es 255)
Erbium 169 (Er 169)
Erbium 171 (Er 171)
Europium 152 (Eu 152)
Europium 152 9.2 h (Eu 152 9.2 h)
Europium 152 13 yr (Eu 152 13 yr)
Europium 154 (Eu 154)
Europium 155 (Eu 155)
Fermium 257 (Fm 257)
Fluorine 18 (F 18)
Gadolinium 148 (Gd 148)
Gadolinium 153 (Gd 153)
Gadolinium 159 (Gd 159)
Gallium 67 (Ga 67)
Gallium 72 (Ga 72)
Germanium 68 (Ge 68)
Germanium 71 (Ge 71)
Gold 195 (Au 195)
Gold 198 (Au 198)
Gold 199 (Au 199)
Hafnium 172 (Hf 172)
Hafnium 181 (Hf 181)
Holmium 166m (Ho 166m)
Holmium 166 (Ho 166)
Hydrogen 3 (H 3)
Indium 111 (In 111)
Indium 113m (In 113m)
Indium 114m (In 114m)
Indium 115m (In 115m)
Indium 115 (In 115)
Iodine 123 (I 123)
Iodine 125 (I 125)
Iodine 126 (I 126)
Iodine 129 (I 129)
Iodine 131 (I 131)
Iodine 132 (I 132)
Iodine 133 (I 133)
Iodine 134 (I 134)
Iodine 135 (I 135)
Iridium 192 (Ir 192)
Iridium 194 (Ir 194)
Iron 52 (Fe 52)
Iron 55 (Fe 55)
Iron 59 (Fe 59)
Krypton 85 (Kr 85)
Krypton 87 (Kr 87)
Lanthanum 140 (La 140)
Lead 210 (Pb 210)
Lutetium 177 (Lu 177)
Manganese 52 (Mn 52)
Manganese 54 (Mn 54)
Manganese 56 (Mn 56)
Mendelevium 258 (Md 258)
Mercury 197m (Hg 197m)
Mercury 197 (Hg 197)
Mercury 203 (Hg 203)
Molybdenum 99 (Mo 99)
Neodymium 147 (Nd 147)
Neodymium 149 (Nd 149)
Neptunium 235 (Np 235)
Neptunium 237 (Np 237)
Nickel 59 (Ni 59)
Nickel 63 (Ni 63)
Nickel 65 (Ni 65)
Niobium 93m (Nb 93m)
Niobium 94 (Nb 94)
Niobium 95 (Nb 95)
Niobium 97 (Nb 97)
Nitrogen 13 (N 13)
Osmium 185 (Os 185)
Osmium 191m (Os 191m)
Osmium 191 (Os 191)
Osmium 193 (Os 193)
Oxygen 15 (O 15)
Palladium 103 (Pd 103)
Palladium 109 (Pd 109)
Phosphorus 32 (P 32)
Phosphorus 33 (P 33)
Platinum 191 (Pt 191)
Platinum 193m (Pt 193m)
Platinum 193 (Pt 193)
Platinum 197m (Pt 197m)
Platinum 197 (Pt 197)
Polonium 208 (Po 208)
Polonium 209 (Po 209)
Polonium 210 (Po 210)
Potassium 42 (K 42)
Potassium 43 (K 43)
Praseodymium 142 (Pr 142)
Praseodymium 143 (Pr 143)
Promethium 145 (Pm 145)
Promethium 147 (Pm 147)
Promethium 149 (Pm 149)
Radium 223 (Ra 223)
Radium 226 (Ra 226)[b]
Rhenium 186 (Re 186)
Rhenium 188 (Re 188)
Rhodium 103m (Rh 103m)
Rhodium 105 (Rh 105)
Rubidium 81 (Rb 81)
Rubidium 86 (Rb 86)
Rubidium 87 (Rb 87)
Ruthenium 97 (Ru 97)
Ruthenium 103 (Ru 103)
Ruthenium 105 (Ru 105)
Ruthenium 106 (Ru 106)
Samarium 151 (Sm 151)
Samarium 153 (Sm 153)
Scandium 46 (Sc 46)
Scandium 47 (Sc 47)
Scandium 48 (Sc 48)
Selenium 75 (Se 75)
Silicon 31 (Si 31)
Silver 105 (Ag 105)
Silver 110m (Ag 110m)
Silver 111 (Ag 111)
Sodium 22 (Na 22)
Sodium 24 (Na 24)
Strontium 85 (Sr 85)
Strontium 89 (Sr 89)
Strontium 90 (Sr 90)
Strontium 91 (Sr 91)
Strontium 92 (Sr 92)
Sulphur 35 (S 35)
Tantalum 182 (Ta 182)
Technetium 96 (Tc 96)
Technetium 97m (Tc 97m)
Technetium 97 (Tc 97)
Technetium 99m (Tc 99m)
Technetium 99 (Tc 99)
Tellurium 125m (Te 125m)
Tellurium 127m (Te 127m)
Tellurium 127 (Te 127)
Tellurium 129m (Te 129m)
Tellurium 129 (Te 129)
Tellurium 131m (Te 131m)
Tellurium 132 (Te 132)
Terbium 160 (Tb 160)
Thallium 200 (Tl 200)

Thallium 201 (Tl 201)
Thallium 202 (Tl 202)
Thallium 204 (Tl 204)
Thulium 170 (Tm 170)
Thulium 171 (Tm 171)
Tin 113 (Sn 113)
Tin 123 (Sn 123)
Tin 125 (Sn 125)
Tin 126 (Sn 126)
Titanium 44 (Ti 44)
Tritium (H3)
Tungsten 181 (W 181)
Tungsten 185 (W 185)
Tungsten 187 (W 187)
Vanadium 48 (V 48)
Xenon 131m (Xe 131m)
Xenon 133 (Xe 133)
Xenon 135 (Xe 135)
Ytterbium 175 (Yb 175)
Yttrium 87 (Y 87)
Yttrium 88 (Y 88)
Yttrium 90 (Y 90)
Yttrium 91 (Y 91)
Yttrium 92 (Y 92)
Yttrium 93 (Y 93)
Zinc 65 (Zn 65)
Zinc 69m (Zn 69m)
Zinc 69 (Zn 69)
Zirconium 93 (Zr 93)
Zirconium 95 (Zr 95)
Zirconium 97 (Zr 97)

[b] Discrete sources of radium-226 (Ra-226).

[58 FR 13005, Mar. 9, 1993, as amended at 59 FR 48998, Sept. 26, 1994. Redesignated and amended at 61 FR 35603, 35607, July 8, 1996; 65 FR 70292, Nov. 22, 2000; 71 FR 20339, Apr. 20, 2006; 75 FR 44093, July 28, 2010]

APPENDIX M TO PART 110—CATEGORIZATION OF NUCLEAR MATERIAL [D]

[From IAEA INFCIRC/225, Rev. 1]

Material	Form	Category		
		I	II	III [e]
1. Plutonium [a]	Unirradiated [b]	2 kg or more	Less than 2 kg but more than 500 g.	500 g or less.
2. Uranium-235 [c]	Unirradiated: [b].			
	Uranium enriched to 20 pct U^{235} or more.	5 kg or more	Less than 5 kg but more than 1 kg.	1 kg or less.
	Uranium enriched to 10 pct U^{235} but less than 20 pct.		10 kg or more	Less than 10 kg.
	Uranium enriched above natural, but less than 10 pct U^{235}.			10 kg or more.
3. Uranium-233	Unirradiated [b]	2 kg or more	Less than 2 kg but more than 500 g.	500 g or less.

[a] All plutonium except that with isotopic concentration exceeding 80 pct in plutonium-238.
[b] Material not irradiated in a reactor or material irradiated in a reactor but with a radiation level equal to or less than 100 rd/h at 1 m unshielded.
[c] Natural uranium, depleted uranium, thorium and quantities of uranium enriched to less than 10% not falling into Category III should be protected in accordance with prudent management practice.
[d] Irradiated fuel should be protected as category I, II, or III nuclear material depending on the category of the fresh fuel. However, fuel which by virtue of its original fissile material content is included as category I or II before irradiation should only be reduced one category level, while the radiation level from the fuel exceeds 100 rd/h at 1 m unshielded.
[e] Physical security determinations will not be required for 15 g or less of plutonium, uranium-233 or high-enriched uranium, or for 1 kg or less of uranium with an enrichment between 10 and 20 pct in uranium-235.

(Sec. 161, as amended, Pub. L. 83-703, 68 Stat. 948 (42 U.S.C. 2201); sec. 201, as amended, Pub. L. 93-438, 88 Stat. 1243 (42 U.S.C. 5841))

[43 FR 21641, May 19, 1978. Redesignated and amended at 49 FR 47204, Dec. 3, 1984. Further redesignated at 55 FR 30450, July 26, 1990; 58 FR 13005, Mar. 9, 1993; 61 FR 35603, July 8, 1996]

APPENDIX N TO PART 110—ILLUSTRATIVE LIST OF LITHIUM ISOTOPE SEPARATION FACILITIES, PLANTS AND EQUIPMENT UNDER NRC'S EXPORT LICENSING AUTHORITY

a. Facilities or plants for the separation of lithium isotopes.

b. Equipment for the separation of lithium isotopes, such as:

(1) Packed liquid-liquid exchange columns especially designed for lithium amalgams;

(2) Mercury and/or lithium amalgam pumps;

(3) Lithium amalgam electrolysis cells;

(4) Evaporators for concentrated lithium hydroxide solution.

c. Any other components especially designed or prepared for use in a reprocessing plant or in any of the components described in this appendix.

[65 FR 70292, Nov. 22, 2000, as amended at 79 FR 39299, July 10, 2014]

APPENDIX O TO PART 110—ILLUSTRATIVE LIST OF FUEL ELEMENT FABRICATION PLANT EQUIPMENT AND COMPONENTS UNDER NRC'S EXPORT LICENSING AUTHORITY

NOTE: Nuclear fuel elements are manufactured from source or special nuclear material. For oxide fuels, the most common type of fuel equipment for pressing pellets, sintering, grinding and grading will be present. Mixed oxide fuels are handled in glove boxes (or equivalent containment) until they are sealed in the cladding. In all cases, the fuel

is hermetically sealed inside a suitable cladding which is designed to be the primary envelope encasing the fuel so as to provide suitable performance and safety during reactor operation. Also, in all cases, precise control of processes, procedures and equipment to extremely high standards is necessary in order to ensure predictable and safe fuel performance.

(a) Items that are considered especially designed or prepared for the fabrication of fuel elements include equipment that:

(1) Normally comes in direct contact with, or directly processes or controls, the production flow of nuclear material;

(2) Seals the nuclear material within the cladding;

(3) Checks the integrity of the cladding or the seal;

(4) Checks the finished treatment of the sealed fuel; or

(5) Is used for assembling reactor fuel elements.

(b) This equipment or systems of equipment may include, for example:

(1) Fully automatic pellet inspection stations especially designed or prepared for checking final dimensions and surface defects of fuel pellets;

(2) Automatic welding machines especially designed or prepared for welding end caps onto the fuel pins (or rods);

(3) Automatic test and inspection stations especially designed or prepared for checking the integrity of completed fuel pins (or rods). This item typically includes equipment for:

(i) X-ray examination of pin (or rod) end cap welds;

(ii) Helium leak detection from pressurized pins (or rods); and

(iii) Gamma-ray scanning of the pins (or rods) to check for correct loading of the fuel pellets inside.

(4) Systems especially designed or prepared to manufacture nuclear fuel cladding.

(c) Any other components especially designed or prepared for use in a fuel element fabrication plant or in any of the components described in this appendix.

[79 FR 39299, July 10, 2014]

APPENDIX P TO PART 110—CATEGORY 1 AND 2 RADIOACTIVE MATERIAL

TABLE 1—IMPORT AND EXPORT THRESHOLD LIMITS

Radioactive material	Category 1		Category 2	
	Terabecquerels (TBq)	Curies (Ci) [1]	Terabecquerels (TBq)	Curies (Ci) [1]
Americium-241	60	1,600	0.6	16
Americium-241/Be	60	1,600	0.6	16
Californium-252	20	540	0.2	5.4
Curium-244	50	1,400	0.5	14
Cobalt-60	30	810	0.3	8.1
Cesium-137	100	2,700	1.0	27
Gadolinium-153	1,000	27,000	10.0	270
Iridium-192	80	2,200	0.8	22
Plutonium-238[2]	60	1,600	0.6	16
Plutonium-239/Be[2]	60	1,600	0.6	16
Promethium-147	40,000	1,100,000	400	11,000
Radium-226[a]	40	1,100	0.4	11
Selenium-75	200	5,400	2.0	54
Strontium-90 (Y–90)	1,000	27,000	10.0	270
Thulium-170	20,000	540,000	200	5,400
Ytterbium-169	300	8,100	3.0	81

[1] The values to be used to determine whether a license is required are given in TBq. Curie (Ci) values are provided for practical usefulness only and are rounded after conversion.

[2] The limits for Pu-238 and Pu-239/Be in this table apply for imports to the U.S. The limits for exports of Pu-238 and Pu-239/Be can be found in § 110.21.

[a] Discrete sources of radium-226.

Calculation of Shipments Containing Multiple Sources or Radionuclides

The ''sum of fractions'' methodology for evaluating combinations of radionuclides being transported, is to be used when import or export shipments contain multiple sources or multiple radionuclides. The threshold limit values used in a sum of the fractions calculation must be the metric values (*i.e.*, TBq).

I. If multiple sources and/or multiple radionuclides are present in an import or export shipment, the sum of the fractions of the activity of each radionuclides must be determined to verify the shipment is less than the Category 1 or 2 limits of Table 1, as appropriate. If the calculated sum of the fractions ratio, using the following equation,

is greater than or equal to 1.0, then the import or export shipment exceeds the threshold limits of Table 1 and the applicable security provisions of this part apply.

II. Use the equation below to calculate the sum of the fractions ratio by inserting the actual activity of the applicable radionuclides or of the individual sources (of the same radionuclides) in the numerator of the equation and the corresponding threshold activity limit from the Table 1 in the denominator of the equation. Ensure the numerator and denominator values are in the same units and all calculations must be performed using the TBq (*i.e.*, metric) values of Table 1.

R_1 = activity for radionuclides or source number 1

R_2 = activity for radionuclides or source number 2

R_N = activity for radionuclides or source number n

AR_1 = activity limit for radionuclides or source number 1

AR_2 = activity limit for radionuclides or source number 2

AR_N = activity limit for radionuclides or source number n

$$\frac{R_1}{AR_1} + \frac{R_2}{AR_2} + \cdots + \frac{R_n}{AR_n} \geq 1.0$$

[70 FR 37993, July 1, 2005, as amended at 71 FR 20339, Apr. 20, 2006; 82 FR 52826, Nov. 15, 2017; 86 FR 67843, Nov. 30, 2021]

PART 140—FINANCIAL PROTECTION REQUIREMENTS AND INDEMNITY AGREEMENTS

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140.2 Scope.
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140.4 Interpretations.
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140.8 Specific exemptions.
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Subpart F—Violations

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140.89 Criminal penalties.

APPENDIXES TO PART 140

140.91 Appendix A—Form of nuclear energy liability policy for facilities.
140.92 Appendix B—Form of indemnity agreement with licensees furnishing insurance policies as proof of financial protection.
140.93 Appendix C—Form of indemnity agreement with licensees furnishing proof of financial protection in the form of licensee's resources.
140.94 Appendix D—Form of indemnity agreement with Federal agencies.
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140.96 Appendix F—Indemnity locations.
140.107 Appendix G—Form of indemnity agreement with licensees processing plutonium for use in plutonium processing and fuel fabrication plants and furnishing insurance policies as proof of financial protection.
140.108 Appendix H—Form of indemnity agreement with licensees possessing plutonium for use in plutonium processing and fuel fabrication plants and furnishing proof of financial protection in the form of the licensee's resources.
140.109 Appendix I.

AUTHORITY: Atomic Energy Act of 1954, secs. 161, 170, 223, 234 (42 U.S.C. 2201, 2210, 2273, 2282); Energy Reorganization Act of 1974, secs. 201, 202 (42 U.S.C. 5841, 5842); 44 U.S.C. 3504 note.

SOURCE: 25 FR 2944, Apr. 7, 1960, unless otherwise noted.

Subpart A—General Provisions

§ 140.1 Purpose.

The regulations in this part are issued to provide appropriate procedures and requirements for determining:

(a) The financial protection required of licensees and for the indemnification and limitation of liability of certain licensees and other persons pursuant to section 170 of the Atomic Energy Act of 1954, as amended; and

(b) The liability insurance required of uranium enrichment facility licensees pursuant to section 193 of the Atomic Energy Act of 1954, as amended.

[57 FR 18394, Apr. 30, 1992]

§ 140.2 Scope.

(a) The regulations in this part apply:

(1) To each person who is an applicant for or holder of a license issued under 10 CFR parts 50, 52, or 54 to operate a nuclear reactor, and

(2) With respect to an extraordinary nuclear occurrence, to each person who is an applicant for or holder of a license to operate a production facility or a utilization facility (including an operating license issued under part 50 of this chapter and a combined license under part 52 of this chapter), and to other persons indemnified with respect to the involved facilities.

(3) To each person licensed pursuant to part 70 of this chapter to possess and use plutonium in a plutonium processing and fuel fabrication plant.

(4) To each person licensed pursuant to parts 40 and 70 of this chapter to construct and operate a uranium enrichment facility.

(b)(1) Subpart B of this part does not apply to any person subject to subparts C or D of this part. Subpart C of this part applies only to persons found by the Commission to be Federal agencies. Subpart D of this part applies only to persons found by the Commission to be nonprofit educational institutions with respect to licenses and applications for licenses for the conduct of educational activities.

(2) Any applicant or licensee subject to this part may apply for a finding that such applicant or licensee is subject to the provisions of subparts C or D of this part. The application should state the grounds for the requested finding. Any application for a finding pursuant to this paragraph may be included in an application for a license.

(c) Subpart E of this part sets forth the procedures the Commission will follow and the criteria the Commission will apply in making a determination as to whether or not there has been an extraordinary nuclear occurrence. The form of nuclear energy liability policy for facilities (appendix A) and the forms of indemnity agreements with licensees (appendices B, C, D, and E) include provisions requiring the waiver of certain defenses with respect to an extraordinary nuclear occurrence.

These provisions and subpart E are incorporated in this part pursuant to Pub. L. 89–645 (80 Stat. 891). They provide additional assurance of prompt compensation under available indemnity and underlying financial protection for injury or damage resulting from the hazardous properties of radioactive materials or radiation, and they in no way detract from the protection to the public otherwise provided under this part.

[25 FR 2944, Apr. 7, 1960, as amended at 33 FR 15998, Oct. 31, 1968; 42 FR 48, Jan. 3, 1977; 56 FR 64980, Dec. 13, 1991; 57 FR 18394, Apr. 30, 1992; 72 FR 49564, Aug. 28, 2007; 83 FR 30288, June 28, 2018]

§ 140.3 Definitions.

As used in this part:

Act means the Atomic Energy Act of 1954 (68 Stat. 919) including any amendments thereto.

Commission means the Nuclear Regulatory Commission or its duly authorized representatives.

Department means the Department of Energy established by the Department of Energy Organization Act (Pub. L. 95–91, 91 Stat. 565, 42 U.S.C. 7101 *et seq.*), to the extent that the Department, or its duly authorized representatives, exercises functions formerly vested in the U.S. Atomic Energy Commission, its Chairman, members, officers and components and transferred to the U.S. Energy Research and Development Administration and to the Administrator thereof pursuant to sections 104 (b), (c) and (d) of the Energy Reorganization Act of 1974 (Pub. L. 93–438, 88 Stat. 1233 at 1237, 42 U.S.C. 5814) and retransferred to the Secretary of Energy pursuant to section 301(a) of the Department of Energy Organization Act (Pub. L. 95–91, 91 Stat. 565 at 577–578, 42 U.S.C. 7151).

Federal agency means a Government agency such that any liability in tort based on the activities of such agency would be satisfied by funds appropriated by the Congress and paid out of the United States Treasury.

Financial protection means the ability to respond in damages for public liability and to meet the cost of investigating and defending claims and settling suits for such damages.

Government agency means any executive department, commission, independent establishment, corporation, wholly or partly owned by the United States of America which is an instrumentality of the United States, or any board, bureau, division, service, office, officer, authority, administration, or other establishment in the executive branch of the Government.

Nuclear reactor means any apparatus, other than an atomic weapon, designed or used to sustain nuclear fission in a self-supporting chain reaction.

Person means:

(1) Any individual, corporation, partnership, firm, association, trust, estate, public or private institution, group, Government agency other than the Commission or the Department, except that the Department shall be considered a person within the meaning of the regulations in this part to the extent that its facilities and activities are subject to the licensing and related regulatory authority of the Commission pursuant to section 202 of the Energy Reorganization Act of 1974 (88 Stat. 1244), any State or any political subdivision thereof, or any political entity within a State, any foreign government or nation or any political subdivision of any such government or nation, or other entity; and

(2) Any legal successor, representative, agent, or agency of the foregoing.

Plutonium processing and fuel fabrication plant means a plant in which the following operations or activities are conducted:

(1) Operations for manufacture of reactor fuel containing plutonium, where the license or licenses authorize the possession of either five or more kilograms of plutonium, excluding that contained in sealed sources and welded or otherwise sealed unirradiated or irradiated fuel rods, at the site of the plant or authorize the processing of one or more kilograms of plutonium, excluding that contained in sealed sources and welded or otherwise sealed unirradiated or irradiated fuel rods, at the plant, including any of the following processes:

(i) Preparation of fuel material;

(ii) Formation of fuel material into desired shapes;

(iii) Application of protective cladding;

(iv) Recovery of scrap material; and

(v) Storage associated with such operations; or

(2) Research and development activities involving any of the operations described in paragraph (1) of this definition, except for research and development activities where the operator is licensed to possess or use plutonium in amounts less than those specified in paragraph (1).

Source material means source material as defined in the regulations contained in part 40 of this chapter.

Special nuclear material means:

(1) Plutonium, uranium 233, uranium enriched in the isotope 233 or in the isotope 235, and any other material which the Commission, pursuant to the provisions of section 51 of the Act, determines to be special nuclear material, but does not include source material; or

(2) Any material artificially enriched by any of the foregoing, but does not include source material.

Testing reactor means a nuclear reactor which is of a type described in § 50.21(c) of this chapter and for which an application has been filed for a license authorizing operation at:

(1) A thermal power level in excess of 10 megawatts; or

(2) A thermal power level in excess of 1 megawatt, if the reactor is to contain:

(i) A circulating loop through the core in which the applicant proposes to conduct fuel experiments; or

(ii) A liquid fuel loading; or

(iii) An experimental facility in the core in excess of 16 square inches in cross-section.

Uranium enrichment facility means:

(1) Any facility used for separating the isotopes of uranium or enriching uranium in the isotope 235, except laboratory scale facilities designed or used for experimental or analytical purposes only; or

(2) Any equipment or device, or important component part especially designed for such equipment or device, capable of separating the isotopes of uranium or enriching uranium in the isotope 235.

[83 FR 30288, June 28, 2018]

§ 140.4 Interpretations.

Except as specifically authorized by the Commission in writing, no interpretations of the meaning of the regulations in this part by any officer or employee of the Commission other than a written interpretation by the General Counsel will be recognized to be binding upon the Commission.

§ 140.5 Communications.

Except where otherwise specified, all communications and reports concerning the regulations in this part and applications filed under them should be sent by mail addressed to: ATTN: Document Control Desk, Director, Office of Nuclear Reactor Regulation, or Director, Office of Nuclear Material Safety and Safeguards, as appropriate, U.S. Nuclear Regulatory Commission, Washington, DC 20555–0001; by hand delivery to the NRC's offices at 11555 Rockville Pike, Rockville, Maryland; or, where practicable, by electronic submission, for example, via Electronic Information Exchange, or CD–ROM. Electronic submissions must be made in a manner that enables the NRC to receive, read, authenticate, distribute, and archive the submission, and process and retrieve it a single page at a time. Detailed guidance on making electronic submissions can be obtained by visiting the NRC's Web site at *http://www.nrc.gov/site-help/e-submittals.html;* by e-mail to *MSHD.Resource@nrc.gov;* or by writing the Office of the Chief Information Officer, U.S. Nuclear Regulatory Commission, Washington, DC 20555–0001. The guidance discusses, among other topics, the formats the NRC can accept, the use of electronic signatures, and the treatment of nonpublic information.

[73 FR 5726, Jan. 31, 2008, as amended at 74 FR 62686, Dec. 1, 2009; 79 FR 75742, Dec. 19, 2014; 80 FR 74982, Dec. 1, 2015; 84 FR 65646, Nov. 29, 2019]

§ 140.6 Reports.

(a) In the event of bodily injury or property damage arising out of or in connection with the possession or use of the radioactive material at the location or in the course of transportation, or in the event any claim is made therefor, written notice containing

particulars sufficient to identify the licensee and reasonably obtainable information with respect to the time, place, and circumstances thereof, or to the nature of the claim, shall be furnished by or for the licensee to the Director, Office of Nuclear Reactor Regulation, or Director, Office of Nuclear Material Safety and Safeguards, as appropriate, using an appropriate method listed in § 140.5, but in any case as promptly as practicable. The terms the radioactive material, the location, and in the course of transportation as used in this section shall have the meanings defined in the applicable indemnity agreement between the licensee and the Commission.

(b) The Commission may require any person subject to this part to keep such records and furnish such reports to the Commission as the Commission deems necessary for the administration of the regulations in this part.

[25 FR 2944, Apr. 7, 1960, as amended at 41 FR 16447, Apr. 19, 1976; 42 FR 49, Jan. 3, 1977; 68 FR 58824, Oct. 10, 2003; 73 FR 5726, Jan. 31, 2008; 79 FR 75742, Dec. 19, 2014; 84 FR 65646, Nov. 29, 2019]

§ 140.7 Fees.

(a)(1) Each reactor licensee shall pay a fee to the Commission based on the following schedule:

(i) For indemnification from $500 million to $400 million inclusive, a fee of $30 per year per thousand kilowatts of thermal capacity authorized in the license;

(ii) For indemnification from $399 million to $300 million inclusive, a fee of $24 per year per thousand kilowatts of thermal capacity authorized in the license;

(iii) For indemnification from $299 million to $200 million inclusive, a fee of $18 per year per thousand kilowatts of thermal capacity authorized in the license;

(iv) For indemnification from $199 million to $100 million inclusive, a fee of $12 per year per thousand kilowatts of thermal capacity authorized in the license; and

(v) For indemnification from $99 million to $1 million inclusive, a fee of $6 per year per thousand kilowatts of thermal capacity authorized in the license.

(2) No fee will be less than $100 per annum for any nuclear reactor. This fee is for the period beginning with the date on which the applicable indemnity agreement is effective. The various levels of indemnity fees are set forth in the schedule in this paragraph. The amount of indemnification for determining indemnity fees will be computed by subtracting from the statutory limit of liability the amount of financial protection required of the licensee. In the case of licensees subject to the provision of § 140.11(a)(4), this total amount will be the amount, as determined by the Commission, of the financial protection available to licensees at the close of the calendar year preceding the one in which the fee becomes due. For those instances in which a certified financial statement is provided as a guarantee of payment of deferred premiums in accordance with § 140.21(e), a fee of $1,000 or the indemnity fee, whichever is greater, is required.

(b) Where a licensee manufactures a number of nuclear reactors each having a power level not exceeding 3⅓ megawatts, for sale to others and operates them at the licensee's location temporarily prior to delivery, the licensee shall report to the Commission the maximum number of such reactors to be operated at that location at any one time. In such cases, the fee shall equal $100 multiplied by the number of reactors reported by the licensee. In the event the number of reactors operated at any one time exceed the estimate so reported, the licensee shall report the additional number of reactors to the Commission and additional charges will be made. If experience shows that less than the estimated number of reactors have been operated, appropriate adjustment in subsequent bills will be made by the Commission.

(c) Each person licensed to possess and use plutonium in a plutonium processing and fuel fabrication plant shall pay to the Commission a fee of $5,000 per year for indemnification. This fee is for the period beginning with the date on which the applicable indemnity agreement is effective.

(d) Indemnity fee payments, made payable to the U.S. Nuclear Regulatory Commission, are to be made in U.S.

funds by check, draft, money order, credit card, or electronic funds transfer such as ACH (Automated Clearing House) using EDI (Electronic Data Interchange). Federal agencies may also make payments by the On-Line Payment and Collections System (OPAC's). Where specific payment instructions are provided on the invoices, payment should be made accordingly, e.g. invoices of $5,000 or more should be paid via ACH through NRC's Lockbox Bank at the address indicated on the invoice. Credit card payments should be made up to the limit established by the credit card bank, in accordance with specific instructions provided with the invoices, to the Lockbox Bank designated for credit card payments.

[25 FR 2944, Apr. 7, 1960, as amended at 42 FR 49, Jan. 3, 1977; 63 FR 31851, June 10, 1998]

§ 140.8 Specific exemptions.

The Commission may, upon application of any interested person or upon its own initiative, grant such exemptions from the requirements of the regulations in this part as it determines are authorized by law and are otherwise in the public interest.

[34 FR 19546, Dec. 11, 1969]

§ 140.9 Modification of indemnity agreements.

The Commission will publish in the FEDERAL REGISTER a notice of its intent to enter into an indemnity agreement, or agreement amending an indemnity agreement, which contains provisions different from the form of the applicable indemnity agreement set forth in the appendices to this part, as such appendices may be amended from time to time.

[48 FR 1030, Jan. 10, 1983]

§ 140.9a Information collection requirements: OMB approval.

(a) The Nuclear Regulatory Commission has submitted the information collection requirements contained in this part to the Office of Management and Budget (OMB) for approval as required by the Paperwork Reduction Act (44 U.S.C. 3501 *et seq.*). The NRC may not conduct or sponsor, and a person is not required to respond to, a collection of information unless it displays a currently valid OMB control number. OMB has approved the information collection requirements contained in this part under control number 3150–0039.

(b) The approved information collection requirements contained in this part appear in §§ 140.6, 140.7, 140.8, 140.13, 140.13a, 140.13b, 140.15, 140.17, 140.20, and 140.21.

[62 FR 52190, Oct. 6, 1997, as amended at 85 FR 65664, Oct. 16, 2020]

Subpart B—Provisions Applicable Only to Applicants and Licensees Other Than Federal Agencies and Nonprofit Educational Institutions

§ 140.10 Scope.

This subpart applies to each person who is an applicant for or holder of a license issued under 10 CFR parts 50 or 54 to operate a nuclear reactor, or is the applicant for or holder of a combined license issued under parts 52 or 54 of this chapter, except licenses held by persons found by the Commission to be Federal agencies or nonprofit educational institutions licensed to conduct educational activities. This subpart also applies to persons licensed to possess and use plutonium in a plutonium processing and fuel fabrication plant.

[72 FR 49564, Aug. 28, 2007]

§ 140.11 Amounts of financial protection for certain reactors.

(a) Each licensee is required to have and maintain financial protection:

(1) In the amount of $1,000,000 for each nuclear reactor he is authorized to operate at a thermal power level not exceeding ten kilowatts;

(2) In the amount of $1,500,000 for each nuclear reactor he is authorized to operate at a thermal power level in excess of ten kilowatts but not in excess of one megawatt;

(3) In the amount of $2,500,000 for each nuclear reactor other than a testing reactor or a reactor licensed under section 104b of the Act which he is authorized to operate at a thermal power level exceeding one megawatt but not in excess of ten megawatts; and

(4) In an amount equal to the sum of $450,000,000 and the amount available as secondary financial protection (in the form of private liability insurance available under an industry retrospective rating plan providing for deferred premium charges equal to the pro rata share of the aggregate public liability claims and costs, excluding costs payment of which is not authorized by section 170o.(1)(D) of the Act, in excess of that covered by primary financial protection) for each nuclear reactor which is licensed to operate and which is designed for the production of electrical energy and has a rated capacity of 100,000 electrical kilowatts or more: Provided, however, that under such a plan for deferred premium charges for each nuclear reactor that is licensed to operate, no more than $131,056,000 with respect to any nuclear incident (plus any surcharge assessed under subsection 170o.(1)(E) of the Act) and no more than $20,496,000 per incident within one calendar year shall be charged. *Except that*, where a person is authorized to operate a combination of 2 or more nuclear reactors located at a single site, each of which has a rated capacity of 100,000 or more electrical kilowatts but not more than 300,000 electrical kilowatts with a combined rated capacity of not more than 1,300,000 electrical kilowatts, each such combination of reactors shall be considered to be a single nuclear reactor for the sole purpose of assessing the applicable financial protection required under this section.

(b) In any case where a person is authorized under parts 50, 52, or 54 of this chapter to operate two or more nuclear reactors at the same location, the total primary financial protection required of the licensee for all such reactors is the highest amount which would otherwise be required for any one of those reactors; provided, that such primary financial protection covers all reactors at the location.

[25 FR 2944, Apr. 7, 1960]

EDITORIAL NOTE: For FEDERAL REGISTER citations affecting § 140.11, see the List of CFR Sections Affected, which appears in the Finding Aids section of the printed volume and at *www.govinfo.gov*.

§ 140.12 Amount of financial protection required for other reactors.

(a) Each licensee is required to have and maintain financial protection for each nuclear reactor for which the amount of financial protection is not determined in § 140.11, in an amount determined pursuant to the formula and other provisions of this section: *Provided*, That in no event shall the amount of financial protection required for any nuclear reactor under this section be less than $4,500,000 or more than $74,000,000.

(b)(1) The formula is:

x = B times P

(2) In the formula:

x = Amount of financial protection in dollars.
B = Base amount of financial protection.
P = Population factor.

(3) The base amount of financial protection is equal to $185 times the maximum power level, expressed in thermal kilowatts, as authorized by the applicable license.

(4) The population factor (P) shall be determined as follows:

(i) *Step 1.* The area to be considered includes all minor civil divisions (as shown in the 1950 Census of Population, Bureau of the Census, or later data available from the Bureau) which are wholly or partly within a circle with the facility at its center and having a radius in miles equal to the square root of the maximum authorized power level in thermal megawatts.

(ii) *Step 2.* Identify all minor civil divisions according to the same census which are in whole or in part within the circle determined in Step 1. Determine the population of each such minor civil division (according to the same census or later data available from the Bureau of the Census). For each minor civil division, divide its population by the square of the estimated distance to the nearest mile from the reactor to the geographic center of the minor civil division: *Provided*, That no such distance shall be deemed to be less than one mile. If the sum of the quotients thus obtained for all minor civil divisions wholly or partly within the circle is 1,000 or less, the population factor is 1. If the sum of these quotients is more than 1,000 but

not more than 3,000, the population factor is 1.2. If the sum of these quotients is more than 3,000 but not more than 5,000, the population factor is 1.4. If the sum of these quotients is more than 5,000 but not more than 7,000, the population factor is 1.6. If the sum of these quotients is more than 7,000 but not more than 9,000, the population factor is 1.8. If the sum of these quotients is more than 9,000 the population factor is 2.0.

(c) In any case where a person is authorized under parts 50, 52, or 54 of this chapter to operate two or more nuclear reactors at the same location, the total financial protection required of the licensee for all such reactors is the highest amount which would otherwise be required for any one of those reactors; provided, that such financial protection covers all reactors at the location.

(d) Except in cases where the amount of financial protection calculated under this section is a multiple of $100,000, amounts determined pursuant to this section shall be adjusted to the next highest multiple of $100,000.

[25 FR 2944, Apr. 7, 1960, as amended at 26 FR 1397, Feb. 17, 1961; 32 FR 8125, June 7, 1967; 72 FR 49565, Aug. 28, 2007]

§ 140.13 Amount of financial protection required of certain holders of construction permits and combined licenses under 10 CFR part 52.

Each holder of a part 50 construction permit, or a holder of a combined license under part 52 of this chapter before the date that the Commission had made the finding under 10 CFR 52.103(g), who also holds a license under part 70 of this chapter authorizing ownership, possession and storage only of special nuclear material at the site of the nuclear reactor for use as fuel in operation of the nuclear reactor after issuance of either an operating license under 10 CFR part 50 or combined license under 10 CFR part 52, shall, during the period before issuance of a license authorizing operation under 10 CFR part 50, or the period before the Commission makes the finding under § 52.103(g) of this chapter, as applicable, have and maintain financial protection in the amount of $1,000,000. Proof of financial protection shall be filed with the Commission in the manner specified in § 140.15 of this chapter before issuance of the license under part 70 of this chapter.

[72 FR 49565, Aug. 28, 2007]

§ 140.13a Amount of financial protection required for plutonium processing and fuel fabrication plants.

(a) Each holder of a license issued pursuant to part 70 of this chapter to possess and use plutonium at a plutonium processing and fuel fabrication plant is required to have and maintain financial protection in the form specified in § 140.14 in the amount of $200,000,000. Proof of financial protection shall be filed with the Commission in the manner specified in § 140.15 prior to issuance of the license under part 70 of this chapter.

(b) In any case, when a person is authorized pursuant to part 70 of this chapter to possess and use plutonium at two or more plutonium processing and fuel fabrication plants at the same location, the total financial protection required of the licensee for all such plants is the highest amount which would otherwise be required for any one of those plants: *Provided, however,* That such financial protection covers all such plants at the location.

[42 FR 49, Jan. 3, 1977, as amended at 42 FR 20140, Apr. 18, 1977; 44 FR 20632, Apr. 6, 1979; 54 FR 24158, June 6, 1989; 83 FR 30289, June 28, 2018]

§ 140.13b Amount of liability insurance required for uranium enrichment facilities.

Each holder of a license issued under Parts 40 or 70 of this chapter for a uranium enrichment facility that involves the use of source material or special nuclear material is required to have and maintain liability insurance. The liability insurance must be the type and in the amounts the Commission considers appropriate to cover liability claims arising out of any occurrence within the United States that causes, within or outside the United States, bodily injury, sickness, disease, death, loss of or damage to property, or loss of use of property arising out of or resulting from the radioactive, toxic, explosive, or other hazardous properties of chemical compounds containing source material or special nuclear material.

Proof of liability insurance must be filed with the Commission as required by § 140.15 before issuance of a license for a uranium enrichment facility under parts 40 and 70 of this chapter.

[57 FR 18394, Apr. 30, 1992]

§ 140.14 Types of financial protection.

(a) The amounts of financial protection required under this part may be furnished and maintained in the form of:

(1) An effective policy of liability insurance from private sources; or

(2) Adequate resources to provide the financial protection required by §§ 140.11, 140.12; 140.13 or § 140.13a; or

(3) Such other type of financial protection as the Commission may approve; or

(4) Any combination of the foregoing.

(b) In any case where the Commission has approved proof of financial protection filed by a licensee the licensee shall not substitute one type of financial protection for another type without first obtaining the written approval of the Commission.

[25 FR 2944, Apr. 7, 1960, as amended at 42 FR 49, Jan. 3, 1977]

§ 140.15 Proof of financial protection.

(a)(1) Licensees who maintain financial protection in whole or in part in the form of liability insurance shall provide proof of financial protection that consists of a copy of the liability policy (or policies) together with a certificate by the insurers issuing the policy stating that the copy is a true copy of the currently effective policy issued to the licensee. The licensee may furnish proof of financial protection in the form of the nuclear energy liability insurance policy set forth in § 140.91 or in any other form acceptable to the Commission.

(2) Such proof may alternatively, consist of a copy of the declarations page of a nuclear energy liability policy in the form set forth in § 140.91 and issued to the licensee: *Provided*, That such policy form has been filed by the insurers with the Commission. The declarations page shall be accompanied by a certificate by the insurers stating that said copy is a true copy of the declarations page of a currently effective policy and identifying the policy (including endorsements) by reference to the policy form which has been filed by them with the Commission.

(3) The Commission will accept any other form of nuclear energy liability insurance as proof of financial protection if it determines that the provisions of such insurance provide financial protection under the requirements of the Commission's regulations and the Act.

(b) Proof of financial protection in the case of licensees who maintain financial protection in whole or in part in the form specified in § 140.14(a)(2) shall consist of a showing that the licensee clearly has adequate resources to provide the financial protection required under this part. For this purpose the applicant or licensee shall file with the Commission:

(1) Annual financial statements for the three complete calendar or fiscal years preceding the date of filing, together with an opinion thereon by a certified public accountant. The financial statements shall include balance sheets, operating statements and such supporting schedules as may be needed for interpretation of the balance sheets and operating statements.

(2) If the most recent statements required under paragraph (b)(1) of this section have been prepared as of a date more than 90 days prior to the date of filing, similar financial statements, prepared as of a date not more than 90 days prior to the date of filing, should be included. These statements need not be reviewed by a certified public accountant.

(c) The Commission may require any licensee to file with the Commission such additional proof of financial protection or other financial information as the Commission determines to be appropriate for the purpose of determining whether the licensee is maintaining financial protection as required under this part.

(d) Proof of financial protection shall be subject to the approval of the Commission.

(e) The licensee shall promptly notify the Commission of any material change in proof of financial protection

or in other financial information filed with the Commission under this part.

[25 FR 2944, Apr. 7, 1960, as amended at 33 FR 15999, Oct. 31, 1968; 49 FR 11148, Mar. 26, 1984]

§ 140.16 Commission review of proof of financial protection.

The Commission will review proof of financial protection filed by any licensee or applicant for license. If the Commission finds that the licensee or applicant for license is maintaining financial protection in accordance with the requirements of this part, approval of the financial protection will be evidenced by incorporation of appropriate provision in the license.

§ 140.17 Special provisions applicable to licensees furnishing financial protection in whole or in part in the form of liability insurance.

In any case where a licensee undertakes to maintain financial protection in the form of liability insurance for all or part of the financial protection required by this part,

(a) The Commission may require proof that the organization or organizations which have issued such policies are legally authorized to issue them and do business in the United States and have clear ability to meet their obligations; and

(b) At least 30 days prior to the termination of any such policy, the licensee shall notify the Commission of the renewal of such policy or shall file other proof of financial protection.

§ 140.18 Special provisions applicable to licensees furnishing financial protection in whole or in part in the form of adequate resources.

In any case where a licensee undertakes to maintain financial protection in the form specified in § 140.14(a)(2) for all or part of the financial protection required by this part, the Commission may require such licensee to file with the Commission such financial information as the Commission determines to be appropriate for the purpose of determining whether the licensee is maintaining financial protection as required by this part.

[42 FR 43385, Aug. 29, 1977]

§ 140.19 Failure by licensees to maintain financial protection.

In any case where the Commission finds that the financial protection maintained by a licensee is not adequate to meet the requirements of this part, the Commission may suspend or revoke the license or may issue such order with respect to licensed activities as the Commission determines to be appropriate or necessary in order to carry out the provisions of this part and of section 170 of the Act.

§ 140.20 Indemnity agreements and liens.

(a) The Commission will execute and issue agreements of indemnity pursuant to the regulations in this part or such other regulations as may be issued by the Commission. Such agreements, as to any licensee, shall be effective on:

(1)(i) The effective date of the license (issued pursuant to part 50 of this chapter) authorizing the licensee to operate the nuclear reactor involved; or

(ii) The date that the Commission makes the finding under § 52.103(g) of this chapter; or

(iii) The effective date of the license (issued under part 70 of this chapter) authorizing the licensee to possess and store special nuclear material at the site of the nuclear reactor for use as fuel in operation of the nuclear reactor after issuance of an operating license for the reactor, whichever is earlier. No such agreement, however, shall be effective prior to September 26, 1957; or

(2) August 1, 1977 or the effective date of the license (issued pursuant to part 70 of this chapter) authorizing the licensee to possess and use plutonium at the site of the plutonium processing and fuel fabrication plant for processing in that plant, whichever date is later.

(b) If the licensee fails to pay assessed deferred premiums, the Commission reserves the right to pay those premiums on behalf of the licensee and to recover the amount of such premiums from the licensee.

(c) The Commission shall require the immediate submission of financial statements by those licensees who indicate, after an assessment of the retrospective premium by the insurance

pools, that they will not pay the assessment. Such financial statements shall include, as a minimum, exhibits indicating internally generated funds from operations and accumulated retained earnings. Subsequent submission of financial statements by such licensees may be requested by the Commission, as required.

(d) If premiums are paid by the Commission as provided in paragraph (b) of this section, payment by the Commission shall create a lien in the amount paid in favor of the United States upon all property and rights to property, whether real or personal, belonging to such licensee. The lien shall arise at the time payment is made by the Commission and shall continue until the liability for the amount (or a judgment against the licensee arising out of such liability) is satisfied or becomes unenforceable. The Commission will issue a certificate of release of any such lien if it finds that the liability for the amount has been fully satisfied or has become legally unenforceable.

(e) If the Commission determines that the licensee is financially able to reimburse the Commission for a deferred premium payment made in its behalf, and the licensee, after notice of such determination by the Commission fails to make such reimbursement within 120 days, the Commission will take appropriate steps to suspend the license for 30 days. The Commission may take such further action as is necessary if reimbursement is not made within the 30-day suspension period including but not limited to termination of the operating license.

(f)(1)(i) The general form of indemnity agreement to be entered into by the Commission with reactor licensees who furnish financial protection in the form of the nuclear energy liability insurance policy set forth in appendix A is contained in § 140.92, appendix B. The general form of indemnity agreement to be entered into by the Commission with reactor licensees who furnish financial protection in the form specified in § 140.14(a)(2) is set forth in § 140.93, appendix C.

(ii) The general form of indemnity agreement to be entered into by the Commission with persons licensed to possess and use plutonium in a plutonium processing and fuel fabrication plant and who furnish financial protection in the form of the nuclear energy liability insurance policy set forth in appendix A[2] is contained in § 140.107, appendix G. The general form of indemnity agreement to be entered into by the Commission with such licensees who furnish financial protection in the form specified in § 140.14(a)(2) is set forth in § 140.108, appendix H.

(2) The form of indemnity agreement to be entered into by the Commission with any particular licensee under this subpart shall contain such modifications of the applicable form in §§ 140.92, 140.93, 140.107 and 140.108, appendices A, B, C, G and H, as are provided for in applicable licenses, regulations or orders of the Commission.

(3) Each licensee who has executed an indemnity agreement under this subpart shall enter into such agreements amending such indemnity agreement as are required by applicable licenses, regulations, or orders of the Commission.

[42 FR 49, Jan. 3, 1977, as amended at 72 FR 49565, Aug. 28, 2007]

§ 140.21 Licensee guarantees of payment of deferred premiums.

Each licensee required to have and maintain financial protection for each nuclear reactor as determined in § 140.11(a)(4) shall at the issuance of the license and annually, on the anniversary of the date on which the indemnity agreement is effective, provide evidence to the Commission that it maintains one of the following types of guarantee of payment of deferred premium in the amount specified in § 140.11(a)(4) for each reactor it is licensed to operate:

(a) Surety bond,

(b) Letter of credit,

(c) Revolving credit/term loan arrangement,

(d) Maintenance of escrow deposits of government securities,

(e) Annual certified financial statement showing either that a cash flow (*i.e.*, cash available to a company after

[2] The form of the nuclear energy liability insurance policy for these licensees will be the subject of pertinent endorsements after discussion with the insurance pools.

all operating expenses, taxes, interest charges, and dividends have been paid) can be generated and would be available for payment of retrospective premiums within three (3) months after submission of the statement, or a cash reserve or a combination of cash flow and cash reserve, or

(f) Such other type of guarantee as may be approved by the Commission.

[42 FR 50, Jan. 3, 1977, as amended at 71 FR 15012, Mar. 27, 2006; 74 FR 62686, Dec. 1, 2009; 79 FR 38769, July 9, 2014]

§ 140.22 Commission guarantee and reimbursement agreements.

Each licensee required to have and maintain financial protection for each nuclear reactor as determined in § 140.11(a)(4) shall execute an indemnity agreement with the Commission that provides for the payment by the Commission of deferred premiums not paid by the licensee and reimbursement of the Commission by the licensee. The general forms of agreement to be entered into by the Commission and licensees are set forth in § 140.92, appendix B and § 140.93, appendix C.

[42 FR 50, Jan. 3, 1977, as amended at 83 FR 30289, June 28, 2018]

Subpart C—Provisions Applicable Only to Federal Agencies

§ 140.51 Scope.

This subpart applies only to persons found by the Commission to be Federal agencies, which have applied for or are holders of licenses issued pursuant to part 50 of this chapter authorizing operation of nuclear reactors.

NOTE: Federal agencies are not required to furnish financial protection.

§ 140.52 Indemnity agreements.

(a) The Commission will execute and issue agreements of indemnity with each Federal agency subject to this subpart pursuant to the regulations in this part or such other regulations as may be issued by the Commission. Such agreements, as to any licensee, shall be effective on:

(1) The effective date of the license (issued pursuant to part 50 of this chapter) authorizing the licensee to operate the nuclear reactor involved; or

(2) The effective date of the license (issued pursuant to part 70 of this chapter) authorizing the licensee to possess and store special nuclear material at the site of the nuclear reactor for use as fuel in operation of the nuclear reactor after issuance of an operating license for the reactor, whichever is earlier. No such agreement, however, shall be effective prior to September 26, 1957.

(b)(1) The general form of indemnity agreement to be entered into with licensees subject to this subpart is contained in § 140.94 appendix D.

(2) The form of indemnity agreement to be entered into by the Commission with any particular licensee under this subpart shall contain such modifications of the form in § 140.94, as are provided for in applicable licenses, regulations or orders of the Commission.

(3) Each licensee who has executed an indemnity agreement under this subpart shall enter into such agreements amending such indemnity agreement as are required by applicable licenses, regulations or orders of the Commission.

[27 FR 2885, Mar. 29, 1962, as amended at 33 FR 15999, Oct. 31, 1968]

Subpart D—Provisions Applicable Only to Nonprofit Educational Institutions

§ 140.71 Scope.

This subpart applies only to applicants for and holders of licenses issued for the conduct of educational activities to persons found by the Commission to be nonprofit educational institutions, except that this subpart does not apply to Federal agencies.

NOTE: Financial protection is not required with respect to licenses issued for the conduct of educational activities to persons found by the Commission to be non-profit educational institutions.

§ 140.72 Indemnity agreements.

(a) The Commission will execute and issue agreements of indemnity with each non-profit educational institution subject to this subpart pursuant to the regulations in this part or such other regulations as may be issued by the Commission. Such agreements, as to any licensee, shall be effective on:

(1) The effective date of the license (issued pursuant to part 50 of this chapter) authorizing the licensee to operate the nuclear reactor involved; or

(2) The effective date of the license (issued pursuant to part 70 of this chapter) authorizing the licensee to possess and store special nuclear material at the site of the nuclear reactor for use as fuel in operation of the nuclear reactor after issuance of an operating license for the reactor, whichever is earlier. No such agreement, however, shall be effective prior to September 26, 1957.

(b)(1) The general form of indemnity agreement to be entered into with licensees subject to this subpart is contained in § 140.95 appendix E.

(2) The form of indemnity agreement to be entered into by the Commission with any particular licensee under this subpart shall contain such modifications of the form in § 140.95 appendix E, as are provided for in applicable licenses, regulations or orders of the Commission.

(3) Each licensee who has executed an indemnity agreement under this subpart shall enter into such agreements amending such indemnity agreement as are required by applicable licenses, regulations or orders of the Commission.

[27 FR 2885, Mar. 29, 1962, as amended at 33 FR 15999, Oct. 31, 1968]

Subpart E—Extraordinary Nuclear Occurrences

§ 140.81 Scope and purpose.

(a) *Scope*. This subpart applies to applicants for and holders of licenses authorizing operation of production facilities and utilization facilities, including combined licenses under part 52 of this chapter, and to other persons indemnified with respect to such facilities.

(b) *Purpose*. One purpose of this subpart is to set forth the criteria which the Commission proposes to follow in order to determine whether there has been an ''extraordinary nuclear occurrence.'' The other purpose is to establish the conditions of the waivers of defenses proposed for incorporation in indemnity agreements and insurance policies or contracts furnished as proof of financial protection.

(1) The system is to come into effect only where the discharge or dispersal constitutes a substantial amount of source, special nuclear or byproduct material, or has caused substantial radiation levels offsite. The various limits in present NRC regulations are not appropriate for direct application in the determination of an ''extraordinary nuclear occurrence,'' for they were arrived at with other purposes in mind, and those limits have been set at a level which is conservatively arrived at by incorporating a significant safety factor. Thus, a discharge or dispersal which exceeds the limits in NRC regulations, or in license conditions, although possible cause for concern, is not one which would be expected to cause substantial injury or damage unless it exceeds by some significant multiple the appropriate regulatory limit. Accordingly, in arriving at the values in the criteria to be deemed ''substantial'' it is more appropriate to adopt values separate from NRC health and safety regulations, and, of course, the selection of these values will not in any way affect such regulations. A substantial discharge, for purposes of the criteria, represents a perturbation of the environment which is clearly above that which could be anticipated from the conduct of normal activities. The criteria are intended solely for the purposes of administration of the Commission's statutory responsibilities under Pub. L. 89–645, and are not intended to indicate a level of discharge or dispersal at which damage to persons or property necessarily will occur, or a level at which damage is likely to occur, or even a level at which some type of protective action is indicated. It should be clearly understood that the criteria in no way establish or indicate that there is a specific threshold of exposure at which biological damage from radiation will take place. It cannot be emphasized too frequently that the levels set to be used as criteria for the first part of the determination, that is, the criteria for amounts offsite or radiation levels offsite which are substantial, are not meant to indicate that, because such amounts or levels are determined to be substantial for

purposes of administration, they are ''substantial'' in terms of their propensity for causing injury or damage.

(2) It is the purpose of the second part of the determination that the Commission decide whether there have in fact been or will probably be substantial damages to persons offsite or property offsite. The criteria for substantial damages were formulated, and the numerical values selected, on a wholly different basis from that on which the criteria used for the first part of the determination with respect to substantial discharge were derived. The only interrelation between the values selected for the discharge criteria and the damage criteria is that the discharge values are set so low that it is extremely unlikely the damage criteria could be satisfied unless the discharge values have been exceeded.

(3) The first part of the test is designed so that the Commission can assure itself that something exceptional has occurred; that something untoward and unexpected has in fact taken place and that this event is of sufficient significance to raise the possibility that some damage to persons or property offsite has resulted or may result. If there appears to be no damage, the waivers will not apply because the Commission will be unable, under the second part of the test, to make a determination that ''substantial damages'' have resulted or will probably result. If damages have resulted or will probably result, they could vary from de minimis to serious, and the waivers will not apply until the damages, both actual and probable, are determined to be ''substantial'' within the second part of the test.

(4) The presence or absence of an extraordinary nuclear occurrence determination does not concomitantly determine whether or not a particular claimant will recover on his claim. In effect, it is intended primarily to determine whether certain potential obstacles to recovery are to be removed from the route the claimant would ordinarily follow to seek compensation for his injury or damage. If there has not been an extraordinary nuclear occurrence determination, the claimant must proceed (in the absence of settlement) with a tort action subject to whatever issues must be met, and whatever defenses are available to the defendant, under the law applicable in the relevant jurisdiction. If there has been an extraordinary nuclear occurrence determination, the claimant must still proceed (in the absence of settlement) with a tort action, but the claimant's burden is substantially eased by the elimination of certain issues which may be involved and certain defenses which may be available to the defendant. In either case the defendant may defend with respect to such of the following matters as are in issue in any given claim: The nature of the claimant's alleged damages, the causal relationship between the event and the alleged damages, and the amount of the alleged damages.

[33 FR 15999, Oct. 31, 1968, as amended at 40 FR 8793, Mar. 3, 1975; 72 FR 49565, Aug. 28, 2007]

§ 140.82 Procedures.

(a) The Commission may initiate, on its own motion, the making of a determination as to whether or not there has been an extraordinary nuclear occurrence. In the event the Commission does not so initiate the making of a determination, any affected person, or any licensee or person with whom an indemnity agreement is executed or a person providing financial protection may petition the Commission for a determination of whether or not there has been an extraordinary nuclear occurrence. If the Commission does not have, or does not expect to have, within 7 days after it has received notification of an alleged event, enough information available to make a determination that there has been an extraordinary nuclear occurrence, the Commission will publish a notice in the FEDERAL REGISTER setting forth the date and place of the alleged event and requesting any persons having knowledge thereof to submit their information to the Commission.

(b) When a procedure is initiated under paragraph (a) of this section, the Commission will designate members of the principal staff to begin immediately to assemble the relevant information and prepare a report on which

the Commission can make its determination.

[33 FR 15999, Oct. 31, 1968, as amended at 40 FR 8794, Mar. 3, 1975]

§ 140.83 Determination of extraordinary nuclear occurrence.

If the Commission determines that both of the criteria set forth in §§ 140.84 and 140.85 have been met, it will make the determination that there has been an extraordinary nuclear occurrence. If the Commission publishes a notice in the FEDERAL REGISTER in accordance with § 140.82(a) and does not make a determination within 90 days thereafter that there has been an extraordinary nuclear occurrence, the alleged event will be deemed not to be an extraordinary nuclear occurrence. The time for the making of a determination may be extended by the Commission by notice published in the FEDERAL REGISTER.

[33 FR 15999, Oct. 31, 1968]

§ 140.84 Criterion I—Substantial discharge of radioactive material or substantial radiation levels offsite.

The Commission will determine that there has been a substantial discharge or dispersal of radioactive material offsite, or that there have been substantial levels of radiation offsite, when, as a result of an event comprised of one or more related happenings, radioactive material is released from its intended place of confinement or radiation levels occur offsite and either of the following findings are also made:

(a) The Commission finds that one or more persons offsite were, could have been, or might be exposed to radiation or to radioactive material, resulting in a dose or in a projected dose in excess of one of the levels in the following table:

TOTAL PROJECTED RADIATION DOSES

Critical organ	Dose (rems)
Thyroid	30
Whole body	20
Bone marrow	20
Skin	60
Other organs or tissues	30

Exposures from the following types of sources of radiation shall be included:

(1) Radiation from sources external to the body;

(2) Radioactive material that may be taken into the body from its occurrence in air or water; and

(3) Radioactive material that may be taken into the body from its occurrence in food or on terrestrial surfaces.

(b) The Commission finds that:

(1) Surface contamination of at least a total of any 100 square meters of offsite property has occurred as the result of a release of radioactive material from a production or utilization facility and such contamination is characterized by levels of radiation in excess of one of the values listed in Column 1 or Column 2 of the following table, or

(2) Surface contamination of any offsite property has occurred as the result of a release of radioactive material in the course of transportation and such contamination is characterized by levels of radiation in excess of one of the values listed in column 2 of the following table:

TOTAL SURFACE CONTAMINATION LEVELS [1]

Type of emitter	Column 1 Offsite property, contiguous to site, owned or leased by person with whom an indemnity agreement is executed	Column 2 Other offsite property
Alpha emission from transuranic isotopes.	3.5 microcuries per square meter.	0.35 microcuries per square meter.
Alpha emission from isotopes other than transuranic isotopes.	35 microcuries per square meter.	3.5 microcuries per square meter.
Beta or gamma mission.	40 millirads/hour @ 1 cm.[2].	4 millirads/hour @ 1 cm.[2]

[1] The maximum levels (above background), observed or projected, 8 or more hours after initial deposition.

[2] Measured through not more than 7 milligrams per square centimeter of total absorber.

[33 FR 15999, Oct. 31, 1968, as amended at 40 FR 8794, Mar. 3, 1975]

§ 140.85 Criterion II—Substantial damages to persons offsite or property offsite.

(a) After the Commission has determined that an event has satisfied Criterion I, the Commission will determine that the event has resulted or will probably result in substantial damages to persons offsite or property offsite if any of the following findings are made:

(1) The Commission finds that such event has resulted in the death or hospitalization, within 30 days of the event, of five or more people located offsite showing objective clinical evidence of physical injury from exposure to the radioactive, toxic, explosive, or other hazardous properties of source, special nuclear, or byproduct material; or

(2) The Commission finds that $2,500,000 or more of damage offsite has been or will probably be sustained by any one person, or $5 million or more of such damage in the aggregate has been or will probably be sustained, as the result of such event; or

(3) The Commission finds that $5,000 or more of damage offsite has been or will probably be sustained by each of 50 or more persons, provided that $1 million or more of such damage in the aggregate has been or will probably be sustained, as the result of such event.

(b) As used in paragraphs (a) (2) and (3) of this section, ''damage'' shall be that arising out of or resulting from the radioactive, toxic, explosive, or other hazardous properties of source, special nuclear, or byproduct material, and shall be based upon estimates of one or more of the following:

(1) Total cost necessary to put affected property back into use,

(2) Loss of use of affected property,

(3) Value of affected property where not practical to restore to use,

(4) Financial loss resulting from protective actions appropriate to reduce or avoid exposure to radiation or to radioactive materials.

[33 FR 15999, Oct. 31, 1968]

Subpart F—Violations

§ 140.87 Violations.

(a) The Commission may obtain an injunction or other court order to prevent a violation of the provisions of—

(1) The Atomic Energy Act of 1954, as amended;

(2) Title II of the Energy Reorganization Act of 1974, as amended; or

(3) A regulation or order issued pursuant to those Acts.

(b) The Commission may obtain a court order for the payment of a civil penalty imposed under section 234 of the Atomic Energy Act:

(1) For violations of—

(i) Sections 53, 57, 62, 63, 81, 82, 101, 103, 104, 107, or 109 of the Atomic Energy Act of 1954, as amended;

(ii) Section 206 of the Energy Reorganization Act;

(iii) Any rule, regulation, or order issued pursuant to the sections specified in paragraph (b)(1)(i) of this section;

(iv) Any term, condition, or limitation of any license issued under the sections specified in paragraph (b)(1)(i) of this section.

(2) For any violation for which a license may be revoked under section 186 of the Atomic Energy Act of 1954, as amended.

[57 FR 55080, Nov. 24, 1992]

§ 140.89 Criminal penalties.

(a) Section 223 of the Atomic Energy Act of 1954, as amended, provides for criminal sanctions for willful violation of, attempted violation of, or conspiracy to violate, any regulation issued under sections 161b, 161i, or 161o of the Act. For purposes of section 223, all the regulations in part 140 are issued under one or more of sections 161b, 161i, or 161o, except for the sections listed in paragraph (b) of this section.

(b) The regulations in part 140 that are not issued under sections 161b, 161i, or 161o for the purposes of section 223 are as follows: §§ 140.1, 140.2, 140.3, 140.4, 140.5, 140.7, 140.8, 140.9, 140.9a, 140.10, 140.14, 140.16, 140.18, 140.19, 140.20, 140.51, 140.52, 140.71, 140.72, 140.81, 140.82, 140.83, 140.84, 140.85, 140.87, 140.89, 140.91, 140.92, 140.93, 140.94, 140.95, 140.96, 140.107, 140.108, and 140.109.

[57 FR 55080, Nov. 24, 1992]

APPENDIXES TO PART 140

§ 140.91 Appendix A—Form of nuclear energy liability policy for facilities.

While the text of the policy which follows is exemplary of a contract acceptable to the Commission as evidence of the financial protection required of the licensee by section 170 of the Atomic Energy Act of 1954, as amended, variations on this text submitted by the licensee also will be considered by the Commission in determining whether the licensee meets the financial protection requirements of the Act. The full text of the policy is published solely for the purpose of

completeness. Publication of this text should not be construed as a Commission endorsement of any particular provision pertaining solely to the business relationship between the insurers and the insureds or to any other matter not within the Commission's statutory jurisdiction under the Atomic Energy Act.

NUCLEAR ENERGY LIABILITY POLICY

(FACILITY FORM)

The undersigned members of _____, hereinafter called the ''companies,'' each for itself, severally and not jointly, and in the respective proportions hereinafter set forth, agree with the insured, named in the declarations made a part hereof, in consideration of the premium and in reliance upon the statements in the declarations and subject to the limit of liability, exclusions, conditions and other terms of this policy;

INSURING AGREEMENTS

I. *Coverage A—Bodily injury and property damage liability*. To pay on behalf of the insured:

(1) All sums which the insured shall become legally obligated to pay as damages because of bodily injury or property damage caused by the nuclear energy hazard, and the companies shall defend any suit against the insured alleging such bodily injury or property damage and seeking damages which are payable under the terms of this policy; but the companies may make such investigation, negotiation and settlement of any claim or suit as they deem expedient;

(2) Costs taxed against the insured in any such suit and interest on any judgment therein;

(3) Premiums on appeal bonds and on bonds to release attachments in any such suit, but without obligation to apply for or furnish such bonds;

(4) Reasonable expenses, other than loss of earnings, incurred by the insured at the companies' request.

Coverage B—Damage to property of an insured away from the facility. With respect to property damage caused by the nuclear energy hazard to property of an insured which is away from the facility, to pay to such insured those sums which such insured would have been legally obligated to pay as damages therefor, had such property belonged to another.

Coverage C—Subrogation—Offsite employees. With respect to bodily injury sustained by any employee of an insured and caused by the nuclear energy hazard, to pay to the workmen's compensation carrier of such insured all sums which such carrier would have been entitled to recover and retain as damages from another person or organization, had such person or organization alone been legally responsible for such bodily injury, by reason of the rights acquired by subrogation by the payment of the benefits required of such carrier under the applicable workmen's compensation or occupational disease law. An employer who is a duly qualified self-insurer under such law shall be deemed to be a workmen's compensation carrier within the meaning of this coverage. This Coverage C does not apply to bodily injury sustained by any person who is employed at and in connection with the facility. This Coverage C shall not constitute workmen's compensation insurance as required under the laws of any state.

II. *Definition of insured*. The unqualified word *insured* includes (a) the named insured and (b) any other person or organization with respect to his legal responsibility for damages because of bodily injury or property damage caused by the nuclear energy hazard.

Subdivision (b) above does not include as an insured the United States of America or any of its agencies.

Subject to Condition 3 and the other provisions of this policy, the insurance applies separately to each insured against whom claim is made or suit is brought.

III. *Definitions*. Wherever used in this policy:

Bodily injury means bodily injury, sickness or disease, including death resulting therefrom, sustained by any person;

Property damage means physical injury to or destruction or radioactive contamination of property, and loss of use of property so injured, destroyed or contaminated, and loss of use of property while evacuated or withdrawn from use because possibly so contaminated or because of imminent danger of such contamination;

Nuclear material means source material, special nuclear material or byproduct material;

Source material, *special nuclear material*, and *byproduct material* have the meanings given them in the Atomic Energy Act of 1954, or in any law amendatory thereof;

Spent fuel means any fuel element or fuel component, solid or liquid, which has been used or exposed to radiation in any nuclear reactor;

Waste means any waste material (1) containing byproduct material and (2) resulting from the operation by any person or organization of any nuclear facility included within the definition of nuclear facility under paragraph (1) or (2) thereof;

The facility means the facility described in the declarations and includes the location designated in Item 3 of the declarations and all property and operations at such location;

Nuclear facility means *the facility* as defined in any Nuclear Energy Liability Policy (Facility Form) issued by the companies or by _____.

The term *nuclear facility* also means

(1) Any nuclear reactor,

(2) Any equipment or device designed or used for (a) separating the isotopes of uranium or plutonium, (b) processing or utilizing spent fuel, or (c) handling, processing or packaging waste,

(3) Any equipment or device used for the processing, fabricating or alloying of special nuclear material if at any time the total amount of such material in the custody of the insured at the premises where such equipment or device is located consists of or contains more than 25 grams of plutonium or uranium-233 or any combination thereof, or more than 250 grams of uranium-235,

(4) Any structure, basin, excavation, premises or place prepared or used for the storage or disposal of waste, and includes the site on which any of the foregoing is located, all operations conducted on such site and all premises used for such operations;

Indemnified nuclear facility means

(1) *The facility* as defined in any Nuclear Energy Liability Policy (Facility Form) issued by the companies or by _____,

(2) Any other nuclear facility,

if financial protection is required pursuant to the Atomic Energy Act of 1954, or any law amendatory thereof, with respect to any activities or operations conducted thereat;

Nuclear reactor means any apparatus designed or used to sustain nuclear fission in a self-supporting chain reaction or to contain a critical mass of fissionable material;

Nuclear energy hazard means the radioactive, toxic, explosive or other hazardous properties of nuclear material, but only if:

(1) The nuclear material is at the facility or has been discharged or dispersed therefrom without intent to relinquish possession or custody thereof to any person or organization, or

(2) The nuclear material is in an insured shipment which is (a) in the course of transportation, including handling and temporary storage incidental thereto, within the territorial limits of the United States of America, its territories or possessions, Puerto Rico or the Canal Zone and (b) away from any other nuclear facility;

Insured shipment means a shipment of source material, special nuclear material, spent fuel of waste, herein called *material,* (1) to the facility from a nuclear facility owned by the United States of America, but only if the transportation of the material is not by predetermination to be interrupted by the removal of the material from a transporting conveyance for any purpose other than the continuation of its transportation, or (2) from the facility to any other location except an indemnified nuclear facility, but only until the material is removed from a transporting conveyance for any purpose other than the continuation of its transportation.

IV. *Application of policy*. This policy applies only to bodily injury or property damage (1) which is caused during the policy period by the nuclear energy hazard and (2) which is discovered and for which written claim is made against the insured, not later than two years after the end of the policy period.

EXCLUSIONS

This policy does not apply:

(a) To any obligation for which the insured or any carrier as his insurer may be held liable under any workmen's compensation, unemployment compensation or disability benefits law, or under any similar law;

(b) Except with respect to liability of another assumed by the insured under contract, to bodily injury to any employee of the insured arising out of and in the course of his employment by the insured; but this exclusion does not apply to bodily injury to any person who is not employed at and in connection with the facility if the insured has complied with the requirements of the applicable workmen's compensation or occupational disease law respecting the securing of compensation benefits thereunder to his employees;

(c) To liability assumed by the insured under contract, other than an assumption in a contract with another of the liability of any person or organization which would be imposed by law on such person or organization in the absence of an express assumption of liability;

(d) To bodily injury or property damage due to the manufacturing, handling or use at the location designated in Item 3 of the declarations, in time of peace or war, of any nuclear weapon or other instrument of war utilizing special nuclear material or byproduct material;

(e) To bodily injury or property damage due to war, whether or not declared, civil war, insurrection, rebellion or revolution, or to any act or conditions incident to any of the foregoing;

(f) To property damage to any property at the location designated in Item 3 of the declarations, other than aircraft, watercraft or vehicles licensed for highway use, provided such aircraft, watercraft or vehicles are not used in connection with the operation of the facility;

(g) To property damage to nuclear material in the course of transportation to or from the facility including handling or storage incidental thereto;

(h) Under Coverage B, to property damage due to neglect of the insured to use all reasonable means to save and preserve the property after knowledge of the occurrence resulting in such property damage.

CONDITIONS

1. *Premium*—(1) *Definitions.* With reference to the premium for this policy: *advance premium,* for any calendar year, is the estimated standard premium for that calendar year;

Standard premium, for any calendar year, is the premium for that calendar year computed in accordance with the companies' rules, rates, rating plans (other than the Industry Credit Rating Plan), premiums and minimum premiums applicable to this insurance;

Reserve premium means that portion of the standard premium paid to the companies and specifically allocated under the Industry Credit Rating Plan for incurred losses. The amount of the *reserve premium* for this policy for any calendar year during which this policy is in force is the amount designated as such in the Standard Premium Endorsement for that calendar year;

Industry reserve premium, for any calendar year, is the sum of the reserve premiums for that calendar year for all Nuclear Energy Liability Policies issued by the Nuclear Energy Liability Insurance Association and Mutual Atomic Energy Liability Underwriters and subject to the Industry Credit Rating Plan;

Policy refund ratio, for any calendar year, is the ratio of the named insured's reserve premium for that calendar year to the industry reserve premium for that calendar year;

Incurred losses means the sum of:

(1) All losses and expenses by Nuclear Energy Liability Insurance Association and Mutual Atomic Energy Liability Underwriters, and

(2) All reserves for unpaid losses and expenses as estimated by Nuclear Energy Liability Insurance Association and Mutual Atomic Energy Liability Underwriters because of obligations assumed and the expenses incurred in connection with such obligations by members of Nuclear Energy Liability Insurance Association and Mutual Atomic Energy Liability Underwriters under all Nuclear Energy Liability Policies issued by Nuclear Energy Liability Insurance Association and Mutual Atomic Energy Liability Underwriters and subject to the Industry Credit Rating Plan;

Reserve for refunds, at the end of any calendar year, is the amount by which (1) the sum of all industry reserve premiums for the period from January 1, 1957 through the end of such calendar year exceeds (2) the total for the same period of (a) all incurred losses, valued as of the next following July 1, and (b) all reserve premium refunds made under the Industry Credit Rating Plan by members of Nuclear Energy Liability Insurance Association and Mutual Atomic Energy Liability Underwriters;

Industry reserve premium refund, for any calendar year, is determined by multiplying the reserve for refunds at the end of the ninth calendar year thereafter by the ratio of the industry reserve premium for the calendar year for which the premium refund is being determined to the sum of such amount and the total industry reserve premiums for the next nine calendar years thereafter, provided that the industry reserve premium refund for any calendar year shall in no event be greater than the industry reserve premium for such calendar year.

(2) *Payment of advance and standard premiums.* The named insured shall pay the companies the advance premium stated in the declarations, for the period from the effective date of this policy through December 31 following. Thereafter, at the beginning of each calendar year while this policy is in force, the named insured shall pay the advance premium for such year to the companies. The advance premium for each calendar year shall be stated in the Advance Premium Endorsement for such calendar year issued to the named insured as soon as practicable prior to or after the beginning of such year.

As soon as practicable after each December 31 and after the termination of this policy, the standard premium for the preceding calendar year shall be finally determined and stated in the Standard Premium Endorsement for that calendar year. If the standard premium so determined exceeds the advance premium previously paid for such calendar year, the named insured shall pay the excess to the companies; if less, the companies shall return to the named insured the excess portion paid by such insured.

The named insured shall maintain records of the information necessary for premium computation and shall send copies of such records to the companies as directed, at the end of each calendar year, at the end of the policy period and at such other times during the policy period as the companies may direct.

(3) *Use of reserve premiums.* All reserve premiums paid or payable for this policy may be used by the members of Nuclear Energy Liability Insurance Association or Mutual Atomic Energy Liability Underwriters to discharge their obligations with respect to incurred losses whether such losses are incurred under this policy or under any other policy issued by the Nuclear Energy Liability Insurance Association or Mutual Atomic Energy Liability Underwriters.

(4) *Reserve premium refunds.* A portion of the reserve premium for this policy for the first calendar year of any group of ten consecutive calendar years shall be returnable to the named insured provided there is a reserve for refunds at the end of the tenth calendar year.

(5) *Computation of reserve premium refunds.* The reserve premium refund due the named insured for any calendar year shall be determined by multiplying any industry reserve premium refund for such calendar year by

the policy refund ratio for such calendar year. The reserve premium refund for any calendar year shall be finally determined as soon as practicable after July 1 of the tenth calendar year thereafter.

(6) *Final premium.* The final premium for this policy shall be the sum of the standard premiums for each calendar year, or portion thereof, during which this policy remains in force less the sum of all refunds of reserve premiums due the named insured under the provisions of this Condition 1.

(7) *Reserve premium refund agreement.* Each member of Nuclear Energy Liability Insurance Association or Mutual Atomic Energy Liability Underwriters subscribing this policy for any calendar year, or portion thereof, thereby agrees for itself, severally and not jointly, and in the respective proportion of its liability assumed under this policy for that calendar year, to return to the named insured that portion of any reserve premium refund due the named insured for that calendar year, determined in accordance with the provisions of this Condition 1.

2. *Inspection; suspension.* The companies shall be permitted to inspect the facility and to examine the insured's books and records at any time, as far as they relate to the subject-matter of this insurance.

If a representative of the companies discovers a condition which he believes to be unduly dangerous with respect to the nuclear energy hazard, a representative of the companies may request that such condition be corrected without delay. In the event of noncompliance with such request, a representative of the companies may, by notice to the named insured, to any other person or organization considered by the companies to be responsible for the continuance of such dangerous condition, and to the United States Atomic Energy Commission, suspend the insurance with respect to the named insured and such other person or organization effective 12:00 midnight of the next business day of such Commission following the date that such Commission receives such notice. The period of such suspension shall terminate as of the time stated in a written notice from the companies to the named insured and to each such person or organization that such condition has been corrected.

3. *Limit of liability; termination of policy upon exhaustion of limit.* Regardless of the number of persons and organizations who are insureds under this policy, and regardless of the number of claims made and suits brought against any or all insureds because of one or more occurrences resulting in bodily injury or property damage caused during the policy period by the nuclear energy hazard, the limit of the companies' liability stated in the declarations is the total liability of the companies for their obligations under this policy and the expenses incurred by the companies in connection with such obligations, including.

(a) Payments in settlement of claims and in satisfaction of judgments against the insureds for damages because of bodily injury or property damage, payments made under parts (2), (3) and (4) of Coverage A and payments made in settlement of claims under Coverages B and C;

(b) Payments for expenses incurred in the investigation, negotiation, settlement and defense of any claim or suit, including, but not limited to, the cost of such services by salaried employees of the companies, fees and expenses of independent adjusters, attorneys' fees and disbursements, expenses for expert testimony, inspection and appraisal of property, examination, X-ray or autopsy or medical expenses of any kind;

(c) Payments for expenses incurred by the companies in investigating an occurrence resulting in bodily injury or property damage or in minimizing its effects.

Each payment made by the companies in discharge of their obligations under this policy or for expenses incurred in connection with such obligations shall reduce by the amount of such payment the limit of the companies' liability under this policy.

If, during the policy period or subsequent thereto, the total of such payments made by the companies shall exhaust the limit of the companies' liability under this policy, all liability and obligations of the companies under this policy shall thereupon terminate and shall be conclusively presumed to have been discharged. This policy, if not theretofore canceled, shall thereupon automatically terminate.

Regardless of the number of years this policy shall continue in force and the number of premiums which shall be payable or paid, the limit of the companies' liability stated in the declarations shall not be cumulative from year to year.

4. *Limitation of liability; common occurrence.* Any occurrence or series of occurrences resulting in bodily injury or property damage arising out of the radioactive, toxic, explosive or other hazardous properties of

(a) Nuclear material discharged or dispersed from the facility over a period of days, weeks, months or longer and also arising out of such properties of other nuclear material so discharged or dispersed from one or more other nuclear facilities insured by the companies under a Nuclear Energy Liability Policy (Facility Form), or

(b) Source material, special nuclear material, spent fuel or waste in the course of transportation for which insurance is afforded under this policy and also arising out of such properties of other source material, special nuclear material, spent fuel or waste in the course of transportation for which insurance is afforded under one or more other Nuclear Energy Liability Policies (Facility

Form) issued by the companies, shall be deemed to be a common occurrence resulting in bodily injury or property damage caused by the nuclear energy hazard.

With respect to such bodily injury and property damage (1) the total aggregate liability of the companies under all Nuclear Energy Liability Policies (Facility Form), including this policy, applicable to such common occurrence shall be the sum of the limits of liability of all such policies, the limit of liability of each such policy being as determined by Condition 3 thereof, but in no event shall such total aggregate liability of the companies exceed $_____;[1] (2) the total liability of the companies under this policy shall not exceed that proportion of the total aggregate liability of the companies, as stated in clause (1) above, which (a) the limit of liability of this policy, as determined by Condition 3, bears to (b) the sum of the limits of liability of all such policies issued by the companies, the limit of liability of each such policy being as determined by Condition 3, thereof.

The provisions of this condition shall not operate to increase the limit of the companies' liability under this policy.

5. *Notice of occurrence, claim, or suit.* In the event of bodily injury or property damage to which this policy applies or of an occurrence which may give rise to claims therefor, written notice containing particulars sufficient to identify the insured and also reasonably obtainable information with respect to the time, place and circumstances thereof, and the names and addresses of the injured and of available witnesses, shall be given by or for the insured to _____ or the companies as soon as practicable. If claim is made or suit is brought against the insured, he shall immediately forward to _____ or the companies every demand, notice, summons or other process received by him or his representative.

6. *Assistance and cooperation of the insured.* The insured shall cooperate with the companies and, upon the companies' request, attend hearings and trials and assist in making settlements, securing and giving evidence, obtaining the attendance of witnesses and in the conduct of any legal proceedings in connection with the subject matter of this insurance. The insured shall not, except at his own cost, make any payment, assume any obligation or incur any expense.

7. *Action against companies—Coverages A and C.* No action shall lie against the companies or any of them unless, as a condition precedent thereto, the insured shall have fully complied with all the terms of this policy, nor until the amount of the insured's obligation to pay shall have been finally determined either by judgment against the insured after actual trial or by written agreement of the insured, the claimant and the companies.

Any person or organization or the legal representative thereof who has secured such judgment or written agreement shall thereafter be entitled to recover under this policy to the extent of the insurance afforded by this policy. No person or organization shall have any right under this policy to join the companies or any of them as parties to any action against the insured to determine the insured's liability, nor shall the companies or any of them be impleaded by the insured or his legal representative. Bankruptcy or insolvency of the insured or of the insured's estate shall not relieve the companies of any of their obligations hereunder.

8. *Action against companies—Coverage B.* No suit or action on this policy for the recovery of any claim for property damage to which Coverage B applies shall be sustainable in any court of law or equity unless all the requirements of this policy shall have been complied with and unless commenced within two years after the occurrence resulting in such property damage.

9. *Insured's duties when loss occurs—Coverage B.* In the event of property damage to which Coverage B applies, the insured shall furnish a complete inventory of the property damage claimed, showing in detail the amount thereof. Within ninety-one days after the occurrence resulting in such property damage, unless such time is extended in writing by the companies, the insured shall render to the companies a proof of loss, signed and sworn to by the insured, stating the knowledge and belief of the insured as to the following: identification of such occurrence; the interest of the insured in the property destroyed or damaged, and the amount of each item of property damage claimed; all encumbrances on such property; and all other contracts of insurance, whether valid or not, covering any of such property. The insured shall include in the proof of loss a copy of all descriptions and schedules in all policies. Upon the companies' request, the insured shall furnish verified plans and specifications of any such property. The insured, as often as may be reasonably required, shall exhibit to any person designated by the companies any of such property, and submit to examinations under oath by any person named by the companies and subscribe the same; and, as often as may be reasonably required, shall produce for examination all books of account, records, bills, invoices and other vouchers, or certified copies thereof if originals be lost, at such reasonable time

[1] For policies issued by Nuclear Energy Liability-Property Insurance Association the amount will be ''$124,000,000,'' for policies issued by Mutual Atomic Energy Liability Underwriters, the amount will be ''$36,000,000.''

and place as may be designated by the companies or their representatives, and shall permit extracts and copies thereof to be made.

10. *Appraisal—Coverage B.* In case the insured and the companies shall fail to agree as to the amount of property damage, then, on the written demand of either, each shall select a competent and disinterested appraiser and notify the other of the appraiser selected within twenty days of such demand. The appraisers shall first select a competent and disinterested umpire and, failing for fifteen days to agree upon such umpire, then, on request of the insured or the companies, such umpire shall be selected by a judge of a court of record in the state in which the property is located. The appraisers shall then appraise each item of property damage and, failing to agree, shall submit their differences only to the umpire. An award in writing, so itemized, of any two when filed with the companies shall determine the amount of property damage. Each appraiser shall be paid by the party selecting him and the expenses of the appraisal and umpire shall be paid by the parties equally. The companies shall not be held to have waived any of their rights by any act relating to appraisal.

11. *Subrogation.* In the event of any payment under this policy, the companies shall be subrogated to all the insured's rights of recovery therefor against any person or organization, and the insured shall execute and deliver instruments and papers and do whatever else is necessary to secure such rights. Prior to knowledge of bodily injury or property damage caused by the nuclear energy hazard the insured may waive in writing any right or recovery against any person or organization, but after such knowledge the insured shall not waive or otherwise prejudice any such right of recovery.

The companies hereby waive any rights of subrogation acquired against the United States of America or any of its agencies by reason of any payment under this policy.

The companies do not relinquish, by the foregoing provisions, any right to restitution from the insured out of any recoveries made by the insured on account of a loss covered by this policy of any amounts to which the companies would be entitled had such provisions, or any of them, not been included in this policy.

12. *Other insurance.* If the insurance afforded by this policy for loss or expense is concurrent with insurance afforded for such loss or expense by a Nuclear Energy Liability Policy (Facility Form) issued to the named insured by _____ hereinafter called ''concurrent insurance,'' the companies shall not be liable under this policy for a greater proportion of such loss or expense than the limit of liability stated in the declarations of this policy bears to the sum of such limit and the limit of liability stated in the declarations of such concurrent policy.

If the insured has other valid and collectible insurance (other than such concurrent insurance or any other nuclear energy liability insurance issued by the companies or _____ to any person or organization) applicable to loss or expense covered by this policy, the insurance afforded by this policy shall be excess insurance over such other insurance; provided, with respect to any person who is not employed at and in connection with the facility, such insurance as is afforded by this policy for bodily injury to an employee of the insured arising out of and in the course of his employment shall be primary insurance under such other insurance.

13. *Changes.* Notice to any agent or knowledge possessed by any agent or by any other person shall not effect a waiver or a change in any part of this policy or stop the companies from asserting any right under the terms of this policy; nor shall the terms of this policy be waived or changed except by endorsement issued to form a part of this policy executed by _____ on behalf of the companies.

14. *Assignment.* Assignment of interest by the named insured shall not bind the companies until their consent is endorsed hereon; if, however, the named insured shall die or be declared bankrupt or insolvent, this policy shall cover such insured's legal representative, receiver or trustee as an insured under this policy, but only with respect to his liability as such, and then only provided written notice of his appointment as legal representative, receiver or trustee is given to the companies within ten days after such appointment.

15. *Cancellation.* This policy may be canceled by the named insured by mailing to the companies and the United States Nuclear Regulatory Commission written notice stating when, not less than thirty days thereafter, such cancellation shall be effective. This policy may be canceled by the companies by mailing to the named insured at the address shown in this policy and to the United States Nuclear Regulatory Commission written notice stating when, not less than ninety days thereafter, such cancellation shall be effective; provided in the event of non-payment of premium or if the operator of the facility, as designated in the declarations, is replaced by another person or organization, this policy may be canceled by the companies by mailing to the named insured at the address shown in this policy and to the United States Nuclear Regulatory Commission written notice stating when, not less than thirty days thereafter, such cancellation shall be effective. The mailing of notice as aforesaid shall be sufficient proof of notice. The effective date and hour of cancellation stated in the notice shall become the end of the policy period. Delivery of such

written notice either by the named insured or by the companies shall be equivalent to mailing.

Upon termination or cancellation of this policy, other than as of the end of December 31 in any year, the earned premium for the period this policy has been in force since the preceding December 31 shall be computed in accordance with the following provisions:

(a) If this policy is terminated, pursuant to Condition 3, by reason of the exhaustion of the limit of the companies' liability, all premium theretofore paid or payable shall be fully earned;

(b) If the named insured cancels, the earned premium for such period shall be computed in accordance with the customary annual short rate table and procedure, provided if the named insured cancels after knowledge of bodily injury or property damage caused by the nuclear energy hazard, all premiums theretofore paid or payable shall be fully earned;

(c) If the companies cancel, the earned premium for such period shall be computed pro rata.

Premium adjustment, if any, may be made either at the time cancellation is effected or as soon as practicable after cancellation becomes effective, but payment or tender of unearned premium is not a condition of cancellation.

16. *Company representation*. (a) Any notice, sworn statement or proof of loss which may be required by the provisions of this policy may be given to any one of the companies, and such notice, statement or proof of loss so given shall be valid and binding as to all companies.

(b) In any action or suit against the companies, service of process may be made on any one of them, and such service shall be deemed valid and binding service on all companies.

(c) _____ is the agent of the companies with respect to all matters pertaining to this insurance. All notices or other communications required by this policy to be given to the companies may be given to such agent, at its office at _____ with the same force and effect as if given directly to the companies. Any requests, demands or agreements made by such agent shall be deemed to have been made directly by the companies.

17. *Authorization of named insured*. Except with respect to compliance with the obligations imposed on the insured by Conditions 5, 6, 7, 8, 9, 10 and 11 of this policy, the named insured is authorized to act for every other insured in all matters pertaining to this insurance.

18. *Changes in subscribing companies and in their proportionate liability*. By acceptance of this policy the named insured agrees that the members of _____ liable under this policy, and the proportionate liability of each such member, may change from year to year, and further agrees that regardless of such changes:

(1) Each company subscribing this policy upon its issuance shall be liable only for its stated proportion of any obligation assumed or expense incurred under this policy because of bodily injury or property damage caused, during the period from the effective date of this policy to the close of December 31 next following, by the nuclear energy hazard; for each subsequent calendar year, beginning January 1 next following the effective date of this policy, the subscribing companies and the proportionate liability of each such company shall be stated in an endorsement issued to form a part of this policy, duly executed and attested by the _____ of _____ on behalf of each such company, and mailed or delivered to the named insured;

(2) This policy shall remain continuously in effect from the effective date stated in the declarations until terminated in accordance with Condition 3 or Condition 15;

(3) Neither the liability of any company nor the limit of liability stated in the declarations shall be cumulative from year to year.

19. *Declarations*. By acceptance of this policy the named insured agrees that the statements in the declarations are the agreements and representations of the named insured, that this policy is issued in reliance upon the truth of such representations and that this policy embodies all agreements between the named insured and the companies or any of their agents relating to this insurance.

In Witness Whereof, each of the subscribing companies has caused this policy to be executed and attested on its behalf by the _____ of _____ and duly countersigned on the declarations page by an authorized representative.

For the subscribing companies.

By _____

Subscribing Companies Proportion of 100%

NUCLEAR ENERGY LIABILITY POLICY
NO._____ (FACILITY FORM)

DECLARATIONS

Item 1. Named Insured _____.
Address _____.
(No. Street Town or City State)

Item 2. Policy Period: Beginning at 12:01 a.m. on the _____ day of _____, 19____, and continuing through the effective date of the cancellation or termination of this policy, standard time at the address of the named insured as stated herein.

Item 3. Description of the Facility:

Location _____

Type _____

The Operator of the facility is _____.

Item 4. The limit of the companies' liabil ity is $_____ subject to all the terms of this policy having reference thereto.

Item 5. Advance Premium $_____.

Item 6. These declarations and the schedules forming a part hereof give a complete description of the facility, insofar as it relates to the nuclear energy hazard, except as noted _____

Date of Issue _____, 19___.

Countersigned by _____
(Authorized representative)

NUCLEAR ENERGY LIABILITY POLICY

(FACILITY FORM)

AMENDMENT OF TRANSPORTATION COVERAGE
(INDEMNIFIED NUCLEAR FACILITY)

It is agreed that the definition of *insured shipment* in Insuring Agreement III is amended to read: *insured shipment* means a shipment of source material, special nuclear material, spent fuel or waste, herein called *material,* (1) to the facility from any location except an indemnified nuclear facility, but only if the transportation of the material is not by predetermination to be interrupted by removal of the material from a transporting conveyance for any purpose other than the continuation of its transportation, or (2) from the facility to any other location, but only until the material is removed from a transporting conveyance for any purpose other than the continuation of its transportation.

Effective date of this endorsement _____ to form a part of Policy No. _____.

Issued to _____

Date of Issue _____.

For the subscribing companies.

By _____

Countersigned by _____

Endorsement No. _____.

OPTIONAL AMENDATORY ENDORSEMENT

(FACILITY FORM)

It is agreed that:

I. The first sentence of the definition of nuclear facility is amended to read:

nuclear facility means *the facility* as defined in any Nuclear Energy Liability Policy (Facility Form) issued by _____ or by _____.

II. The definition of *indemnified nuclear facility* is replaced by the following:

indemnified nuclear facility means

(1) *the facility* as defined in any Nuclear Energy Liability Policy (Facility Form) issued by _____ or by _____ or

(2) any other nuclear facility,

if financial protection is required pursuant to the Atomic Energy Act of 1954, or any law amendatory thereof; with respect to any activities or operations conducted thereat:

III. Condition 4 is replaced by the following:

Limitation of liability; common occurrence. Any occurrence or series of occurrences resulting in bodily injury or property damage arising out of the radioactive, toxic, explosive, or other hazardous properties of

(a) nuclear material discharged or dispersed from the facility over a period of days, weeks, months or longer and also arising out of such properties of other nuclear material so discharged or dispersed from one or more other nuclear facilities insured under any Nuclear Energy Liability Policy (Facility Form) issued by _____ or,

(b) source material, special nuclear material, spent fuel or waste in the course of transportation for which insurance is afforded under this policy and also arising out of such properties of other source material, special nuclear material, spent fuel or waste in the course of transportation for which insurance is afforded under one or more other Nuclear Energy Liability Policies (Facility Form) issued by _____.

shall be deemed to be a common occurrence resulting in bodily injury or property damage caused by the nuclear energy hazard.

With respect to such bodily injury and property damage (1) the total aggregate liability of the members of _____, under all Nuclear Energy Liability Policies (Facility Form), including this policy, applicable to such common occurrence shall be the sum of the limits of liability of all such policies, the limit of liability of each such policy being as determined by Condition 3 thereof, but in no event shall such total aggregate liability of such members exceed $_____;[1] (2) the total liability of the companies under this policy shall not exceed that proportion of the total aggregate liability of the members of _____, as stated in clause (1) above, which (a) the limit of liability of this policy, as determined by Condition 3, bears to (b) the sum of the limits of liability of all such policies issued by such members the limit of liability of each such policy being as determined by Condition 3 thereof.

The provisions of this condition shall not operate to increase the limit of the companies' liability under this policy.

IV. The second paragraph of Condition 12 *Other Insurance* is amended to read:

[1] For policies issued by Nuclear Energy Liability-Property Insurance Association the amount will be ''$124,000,000,'' for policies issued by Mutual Atomic Energy Liability Underwriters, the amount will be ''$36,000,000.''

If the insured has other valid and collectible insurance (other than such concurrent insurance or any other nuclear energy liability insurance issued by _____ or to any person or organization) applicable to loss or expense covered by this policy the insurance afforded by this policy shall be excess insurance over such other insurance; provided, with respect to any person who is not employed at and in connection with the facility, such insurance as is afforded by this policy for bodily injury to an employee of the insured arising out of and in the course of his employment shall be primary insurance under such other insurance.

NUCLEAR ENERGY LIABILITY POLICY

(FACILITY FORM)

RESTORATION OF LIMIT OF LIABILITY ENDORSEMENT

It is agreed that:

1. Payments made by the companies under this policy have reduced the limit of the companies' liability, stated in Item 4 of the declarations, to $_____.

2. Such reduced limit is restored to the amount stated in Item 4 of the declarations. Such restored limit applies to obligations assumed or expenses incurred because of bodily injury or property damage caused during the period from the effective date of this endorsement to the termination of the policy, by the nuclear energy hazard.

NOTE: When the reduction of the limit of liability results from a clearly identifiable nuclear event and restoration is offered retroactive to the effective date of the policy for claims other than those resulting from said event, above paragraph 2 will be replaced by the following:

2. Such reduced limit is restored to the amount stated in Item 4 of the declarations, except with respect to bodily injury or property damage resulting from (describe nuclear event).

3. The reduced limit of liability stated in paragraph 1 above, and the limit of liability stated in Item 4 of the declarations, as restored by this endorsement, shall not be cumulative; and each payment made by the companies after the effective date of this endorsement for any loss or expense covered by the policy shall reduce by the amount of such payment both the reduced limit of liability stated in paragraph 1 above and the limit of liability stated in Item 4 of the declarations, as restored by this endorsement, regardless of which limit of liability applies with respect to bodily injury or property damage out of which such loss or expense arises.

Effective date of this endorsement _____to form a part of Policy No. _____

Issued to _____.

Date of Issue _____.

For the subscribing companies

By _____

Countersigned by _____

Endorsement No. _____.

NUCLEAR ENERGY LIABILITY POLICY

(FACILITY FORM)

AMENDATORY ENDORSEMENT

This policy does not apply to bodily injury or property damage with respect to which the insured is entitled to indemnity from the United States Nuclear Regulatory Commission under the provisions of Indemnity Agreement No. _____ between the United States Nuclear Regulatory Commission and _____, dated _____, as now in effect or as hereafter amended.

* * * * *

Effective date of this endorsement to form a part of Policy No.

Issued to _____.

Date of issue _____.

For the subscribing companies _____

By _____

Countersigned by _____

Endorsement No. _____.

NUCLEAR ENERGY LIABILITY POLICY

(FACILITY FORM)

WAIVER OF DEFENSES ENDORSEMENT

(Extraordinary Nuclear Occurrence)

The named insured, acting for himself and every other insured under the policy, and the members of _____ agree as follows:

1. With respect to any extraordinary nuclear occurrence to which the policy applies as proof of financial protection and which—

(a) Arises out of or results from or occurs in the course of the construction, possession, or operation of the facility, or

(b) Arises out of or results from or occurs in the course of the transportation of nuclear material to or from the facility, the insureds and the companies agree to waive

(1) Any issue or defense as to the conduct of the claimant or the fault of the insureds, including, but not limited to:

(i) Negligence,

(ii) Contributory negligence,

(iii) Assumption of risk, and

(iv) Unforeseeable intervening causes whether involving the conduct of a third person or an act of God,

(2) Any issue or defense as to charitable or governmental immunity, and

(3) Any issue or defense based on any statue of limitations if suit is instituted within 3 years from the date on which the claimant first knew, or reasonably could have known,

of his bodily injury or property damage and the cause thereof, but in no event more than 10 years after the date of the nuclear incident.

The waiver of any such issue or defense shall be effective regardless of whether such issue or defense may otherwise be deemed jurisdictional or relating to an element in the cause of action.

2. The waivers set forth in paragraph 1 above do not apply to

(a) Bodily injury or property damage which is intentionally sustained by the claimant or which results from a nuclear incident intentionally and wrongfully caused by the claimant;

(b) Bodily injury sustained by any claimant who is employed at the site of and in connection with the activity where the extraordinary nuclear occurrence takes place if benefits therefor are either payable or required to be provided under any workmen's compensation or occupational disease law;

(c) Any claim for punitive or exemplary damages, provided, with respect to any claim for wrongful death under any State law which provides for damages only punitive in nature, this exclusion does not apply to the extent that the claimant has sustained actual damages, measured by the pecuniary injuries resulting from such death but not to exceed the maximum amount otherwise recoverable under such law.

3. The waivers set forth in paragraph 1 above shall be effective only with respect to bodily injury or property damage to which the policy applies under its terms other than this endorsement.

Such waivers shall not apply to, or prejudice the prosecution or defense of any claim or portion of claim which is not within the protection afforded under—

(1) The provisions of the policy applicable to the financial protection required of the named insured,

(2) The agreement of indemnification between the named insured and the Nuclear Regulatory Commission made pursuant to section 170 of the Atomic Energy Act of 1954, as amended, and

(3) The limit of liability provisions of subsection 170 e. of the Atomic Energy Act of 1954, as amended.

Such waivers shall not preclude a defense based upon the failure of the claimant to take reasonable steps to mitigate damages.

4. Subject to all of the limitations stated in this endorsement and in the Atomic Energy Act of 1954, as amended, the waivers set forth in paragraph 1 above shall be judicially enforceable in accordance with their terms against any insured in an action to recover damages because of bodily injury or property damage to which the policy applies as proof of financial protection.

5. As used herein:

Extraordinary nuclear occurrence means an event which the Nuclear Regulatory Commission has determined to be an extraordinary nuclear occurrence as defined in the Atomic Energy Act of 1954, as amended, *financial protection* and *nuclear incident* have the meanings given them in the Atomic Energy Act of 1954, as amended.

Claimant means the person or organization actually sustaining the bodily injury or property damage and also includes his assignees, legal representatives and other persons or organizations entitled to bring an action for damages on account of such injury or damage.

NUCLEAR ENERGY LIABILITY POLICY

(FACILITY FORM)

AMENDATORY ENDORSEMENT

(Application of Policy)

It is agreed that insuring agreement IV of the policy, captioned *Application of Policy* is amended to read as follows: Application of Policy. This policy applies only to bodily injury or property damage: (1) Which is caused during the policy period by the nuclear energy hazard, and (2) which is discovered and for which written claim is made against the insured, not later than 10 years after the end of the policy period.

NUCLEAR ENERGY LIABILITY POLICY

(FACILITY FORM)

WAIVER OF DEFENSE ENDORSEMENT

(Extraordinary Nuclear Occurrence)

The named insured, acting for himself and every other insured under the policy, and the members of _____ agree as follows:

1. With respect to any extraordinary nuclear occurrence to which the policy applies as proof of financial protection and which

(a) Arises out of or results from or occurs in the course the construction, possession, or operation of the facility, or

(b) Arises out of or results from or occurs in the course of the transportation of nuclear material to or from the facility.

the insured and the companies agree to waive.

(1) Any issue or defense as to the conduct of the claimant or the fault of the insureds, including but not limited to:

(i) Negligence,

(ii) Contributory negligence,

(iii) Assumption of risk, and

(iv) Unforeseeable intervening causes, whether involving the conduct of a third person, or an act of God,

(2) Any issue or defense as to charitable or governmental immunity, and

(3) Any issue or defense based on any statute of limitations if suit is instituted within three (3) years from the date on which the claimant first knew, or reasonably could have known, of his bodily injury or property damage and the cause thereof, but in no event more than twenty (20) years after the date of the nuclear incident.

The waiver of any such issue or defense shall be effective regardless of whether such issue or defense may otherwise be deemed jurisdictional or relating to an element in the cause of action.

2. The waivers set forth in paragraph 1. above do not apply to

(a) Bodily injury or property damage which is intentionally sustained by the claimant or which results from a nuclear incident intentionally and wrongfully caused by the claimant;

(b) Bodily injury sustained by any claimant who is employed at the site of and in connection with the activity where the extraordinary nuclear occurrence takes place if benefits therefor are either payable or required to be provided under any workmen's compensation or occupational disease law;

(c) Any claim for punitive or exemplary damages, provided, with respect to any claim for wrongful death under any State law which provides for damages only punitive in nature, this exclusion does not apply to the extent that the claimant has sustained actual damages, measured by the pecuniary injuries resulting from such death but not to exceed the maximum amount otherwise recoverable under such law.

3. The waivers set forth in paragraph 1. above shall be effective only with respect to bodily injury or property damage to which the policy applies under its terms other than this endorsement; provided, however, that with respect to bodily injury or property damage resulting from an extraordinary nuclear occurrence. Insuring Agreement IV, ''Application of Policy,'' shall not operate to bar coverage for bodily injury or property damage (a) which is caused during the policy period by the nuclear energy hazard and (b) which is discovered and for which written claim is made against the insured not later than twenty (20) years after the date of the extraordinary nuclear occurrence.

Such waivers shall not apply to, or prejudice the prosecution or defense of any claim or portion of claim which is not within the protection afforded under

(a) The provisions of the policy applicable to the financial protection required of the named insured;

(b) The agreement of indemnification between the named insured and the Nuclear Regulatory Commission made pursuant to section 170 of the Atomic Energy Act of 1954, as amended; and

(c) The limit of liability provisions of Subsection 170e. of the Atomic Energy Act of 1954, as amended.

Such waivers shall not preclude a defense based upon the failure of the claimant to take reasonable steps to mitigate damages.

4. Subject to all of the limitations stated in this endorsement and in the Atomic Energy Act of 1954, as amended, the waivers set forth in paragraph 1. above shall be judicially enforceable in accordance with their terms against any insured in an action to recover damages because of bodily injury or property damage to which the policy applies as proof of financial protection.

5. As used herein:

Extraordinary nuclear occurrence means an event which the Nuclear Regulatory Commission has determined to be an extraordinary nuclear occurrence as defined in the Atomic Energy Act of 1954, as amended.

Financial protection and *nuclear incident* have the meanings given them in the Atomic Energy Act of 1954, as amended.

Claimant means the person or organization actually sustaining the bodily injury or property damage and also includes his assignees, legal representatives and other persons or organizations entitled to bring an action for damages on account of such injury or damage.

Effective date of this endorsement _____ to form a part of Policy No. _____,

12:01 A.M. Standard Time

Issued to _____.

Date of issue _____.

Endorsement No. _____.

For the subscribing companies:

By _____,

General Manager

Countersigned by _____.

SUPPLEMENTARY ENDORSEMENT WAIVER OF DEFENSES

REACTOR CONSTRUCTION AT THE FACILITY

It is agreed that in construing the application of paragraph 2.(b) of the Waiver of Defenses Endorsement (NE–33a) with respect to an extraordinary nuclear occurrence occurring at the facility, a claimant who is employed at the facility in connection with the construction of a nuclear reactor with respect to which no operating license has been issued by the Nuclear Regulatory Commission shall not be considered as employed in connection with the activity where the extraordinary nuclear occurrence takes place if:

(1) The claimant is employed exclusively in connection with the construction of a nuclear reactor, including all related equipment and installations at the facility and

(2) No operating license has been issued by the Nuclear Regulatory Commission with respect to the nuclear reactor, and

(3) The claimant is not employed in connection with the possession, storage, use or transfer of nuclear material at the facility.

Effective date of this endorsement _____ to form a part of Policy No. _____.

12:01 A.M. Standard Time

Issued to _____.

Date of issue _____.

Endorsement No _____.

For the subscribing companies:

By _____,

General Manager

Countersigned by _____.

NUCLEAR ENERGY LIABILITY POLICY

(FACILITY FORM)

AMENDMENT OF DEFINITION OF *Nuclear Energy Hazard* (INDEMNIFIED NUCLEAR FACILITY)

It is agreed that: 1. Solely with respect to an *insured shipment* to which the policy applies as proof of financial protection required by the Nuclear Regulatory Commission, subdivision (2) of the definition of *nuclear energy hazard* is amended to read:

(2) The nuclear material is in an insured shipment which is away from any other nuclear facility and is in the course of transportation, including handling and temporary storage incidental thereto, within

(a) The territorial limits of the United States of America, its territories or possessions, Puerto Rico or the Canal Zone; or

(b) International waters or airspace, provided that the nuclear material is in the course of transportation between two points located within the territorial limits described in (a) above and there are no deviations in the course of the transportation for the purpose of going to any other country, state or nation, except a deviation in the course of said transportation for the purpose of going to or returning from a port or place of refuge as the result of an emergency.

2. As used herein, *financial protection* has the meaning given it in the Atomic Energy Act of 1954, as amended.

INSTRUCTIONS—This form is to be used to modify all Nuclear Energy Liability Facility Forms in force on January 1, 1977 which were issued to become effective prior to January 1, 1977 and which are offered by the named insured as proof of financial protection being maintained as required by the Atomic Energy Act of 1954, as amended.

Effective date of this Endorsement _____ To form a part of Policy No. _____.

12:01 A.M. Standard Time

Issued to _____

Date of issue _____.

Endorsement No. _____.

For the subscribing companies:

By _____,

General Manager

Countersigned by _____.

NUCLEAR ENERGY LIABILITY POLICY

(FACILITY FORM)

AMENDMENT OF DEFINITIONS OF *Nuclear Energy Hazard* AND *Insured Shipment* (INDEMNIFIED NUCLEAR FACILITY)

It is agreed that: I. In Insuring Agreement III, *DEFINITIONS*

A. Solely with respect to an *insured shipment* to which this policy applies as proof of financial protection required by the Nuclear Regulatory Commission, Subdivision (2) of the definition of *nuclear energy hazard* is amended to read:

(2) The nuclear material is in an insured shipment which is away from any other nuclear facility and is in the course of transportation, including the handling and temporary storage incidental thereto, within

(a) The territorial limits of the United States of America, its territories or possessions, Puerto Rico or the Canal Zone; or

(b) International waters or airspace, provided that the nuclear material is in the course of transportation between two points located within the territorial limits described in (a) above and there are no deviations in the course of the transportation for the purpose of going to any other country, state or nation, except for a deviation in the course of said transportation for the purpose of going to or returning from a port or place of refuge as the result of an emergency.

B. The definition of *insured shipment* is replaced with the following:

Insured shipment means a shipment of source material, special nuclear material, spent fuel or waste, herein called *material,* (1) to the facility from any location except an indemnified nuclear facility, but only if the transportation of the material is not by predetermination to be interrupted by removal of the material from a transporting conveyance for any purpose other than the continuation of its transportation, or (2) from the facility to any other location, but only until the material is removed from a transporting conveyance for any purpose other than the continuation of its transportation.

II. As used herein, *financial protection* has the meaning given it in the Atomic Energy Act of 1954, as amended.

INSTRUCTIONS—This form is to be used to modify all Nuclear Energy Liability Facility Forms which are issued to become effective on or after January 1, 1977 and which are offered by the named insured as proof of financial protection being maintained as required by the Atomic Energy Act of 1954, as amended.

Effective date of this endorsement _____ To form a part of Policy No. _____.

12:01 A.M. standard time

Issued to _____.
Date of issue _____.
Endorsement No. _____.
For the subscribing companies:
By _____,
General Manager.
Countersigned by _____.

NE–50 (1/1/80), AMENDATORY ENDORSEMENT

(Indemnified Nuclear Facility)

It is agreed that:

I. In Insuring Agreement III:

DEFINITIONS

A. The first sentence of the definition of *nuclear facility* is amended to read: *nuclear facility* means *the facility* as defined in any Nuclear Energy Liability Policy (Facility Form) issued by Nuclear Energy Liability Insurance Association or by Mutual Atomic Energy Liability Underwriters.

B. The definition of *indemnified nuclear facility* is replaced by the following: *indemnified nuclear facility* means

(1) *the facility* as defined in any Nuclear Energy Liability Policy (Facility Form) issued by Nuclear Energy Liability Insurance Association or by Mutual Atomic Energy Liability Underwriters, or

(2) any other nuclear facility, if financial protection is required pursuant to the Atomic Energy Act of 1954, or any law amendatory thereof, with respect to any activities or operations conducted thereat;

C. Solely with respect to an *insured shipment* to which this policy applies as proof of financial protection required by the Nuclear Regulatory Commission. Subdivision (2) of the definition of *nuclear energy hazard* is amended to read:

(2) The nuclear material is in an insured shipment which is away from any other nuclear facility and is in the course of transportation, including the handling and temporary storage incidental thereto, within

(a) The territorial limits of the United States of America, its territories or possessions, or Puerto Rico; or Canal Zone; or

(b) International waters or airspace, provided that the nuclear material is in the course of transportation between two points located within the territorial limits described in (a) above and there are no deviations in the course of the transportation for the purpose of going to any other country, state or nation, except a deviation in the course of said transportation for the purpose of going to or returning from a port or place of refuge as the result of an emergency.

D. The definition of *insured shipment* is replaced with the following:

insured shipment means shipment of source material, special nuclear material, spent fuel or waste, or tailings or wastes produced by the extraction or concentration of uranium or thorium from any ore processed primarily for its source material content, herein called *material*, (1) to the facility from any location except an indemnified nuclear facility, but only if the transportation of the material is not by predetermination to be interrupted by removal of the material from a transporting conveyance for any purpose other than the continuation of its transportation, or (2) from the facility to any other location, but only until the material is removed from a transporting conveyance for any purpose other than the continuation of its transportation.

E. As used herein, *financial protection* has the meaning given it in the Atomic Energy Act of 1954, as amended.

II. Insuring Agreement IV is replaced by the following:

IV. APPLICATION OF POLICY. This policy applies only to bodily injury or property damage (1) which is caused during the policy period by the nuclear energy hazard and (2) which is discovered and for which written claim is made against the insured, not later than ten years after the end of the policy period.

III. Condition 2 is replaced by the following:

2. INSPECTION: SUSPENSION. The companies shall at any time be permitted but not obligated to inspect the facility and all operations relating thereto and to examine the insured's books and records as far as they relate to the subject of this insurance and any property insurance afforded the insured through American Nuclear Insurers. If a representative of the companies discovers a condition which he believes to be unduly dangerous with respect to the nuclear energy hazard, a representative of the companies may request that such condition be corrected without delay. In the event of noncompliance with such request, a representative of the companies may, by notice to the named insured, to any other person or organization considered by the companies to be responsible for the continuation of such dangerous condition, and to the United States Nuclear Regulatory Commission, suspend this insurance with respect to named insured and such other person or organization effective 12:00 midnight of the next business day of such Commission following the date that such Commission receives such notice. The period of such suspension shall terminate as of the time stated in a written notice from the companies to the named insured and to each such person or organization that such condition has been corrected.

Neither the right to make such inspections and examinations nor the making thereof nor any advice or report resulting therefrom shall constitute an undertaking, on behalf of or for the benefit of the insured or others, to determine or warrant that such facility or operations are safe or healthful, or are in compliance with any law, rule or regulation.

In consideration of the issuance or continuation of this policy, the insured agrees that neither the companies nor any pesons or organizations making such inspections or exminations on their behalf shall be liable with respect to injury to or destruction of property at the facility, or any consequential loss or expense resulting therefrom, or any loss resulting from interruption of business or manufacture, arising out of the making of or a failure to make any such inspection or examination, or any report thereon, or any such suspension of insurance, but this provision does not limit the contractual obligations of the companies under this policy or any policy affording the insured property insurance through American Nuclear Insurers.

IV. Condition 4 is replaced by the following:

4. LIMITATION OF LIABILITY: COMMON OCCURRENCE. Any occurrence or series of occurrences resulting in bodily injury or property damage arising out of the radioactive, toxic, explosive or other hazardous properties of

(a) nuclear material discharged or dispersed from the facility over a period of days, weeks, months or longer and also arising out of the properties of other nuclear material so discharged or dispersed from one or more other nuclear facilities insured under any Nuclear Energy Liability Policy (Facility Form) issued by Nuclear Energy Liability Insurance Association, or

(b) source material, special nuclear material, spent fuel or waste in the course of transportation for which insurance is afforded under this policy and also arising out of such properties of other source material, special nuclear material, spent fuel or waste in the course of transportation for which insurance is afforded under one or more other Nuclear Energy Liability Policies (Facility Form) issued by Nuclear Energy Liability Insurance Association, shall be deemed to be a common occurrence resulting in bodily injury or property damage caused by the nuclear energy hazard.

With respect to such bodily injury and property damage (1) the total aggregate liability of the members of the Nuclear Energy Liability Insurance Association under all Nuclear Energy Liability Policies (Facility Form), including this policy, applicable to such common occurrence shall be the sum of the limits of liability of all such policies, the limit of liability of each such policy being as determined by Condition 3 thereof, but in no event shall such total aggregate liability of such members exceed $124,000,000; (2) the total liability of the companies under this policy shall not exceed that proportion of the total aggregate liability of the members of Nuclear Energy Liability Insurance Association, as stated in clause (1) above, which (a) the limit of liability of this policy, as determined by Condition 3, bears to (b) the sum of the limits of liability of all such policies issued by such members, the limit of liability of each such policy being as determined by Condition 3 thereof.

The provisions of this condition shall not operate to increase the limit of the companies' liability under this policy.

V. The second paragraph of Condition 12, *Other Insurance,* is amended to read:

If the insured has other valid and collectible insurance (other than such concurrent insurance or any other nuclear energy liability insurance issued by Nuclear Energy Liability Insurance Association or Mutual Atomic Energy Liability Underwriters to any person or organization) applicable to loss or expense covered by this policy, the insurance afforded by this policy shall be excess insurance over such other insurance; provided, with respect to any person who is not employed at and in connection with the facility, such insurance as is afforded by this policy for bodily injury to an employee of the insured arising out of and in the course of his employment shall be primary insurance under such other insurance.

VI. Paragraph (c) of Condition 16, *Company Representation,* is amended to read:

(c) Nuclear Energy Liability Insurance Association is the agent of the companies with respect to all matters pertaining to this insurance. All notices or other communications required by this policy to be given to the companies may be given to such agent, at its office at the Exchange, Suite 245, 270 Farmington Avenue, Farmington, Connecticut 06032, with the same force and effect as if given directly to the companies. Any requests, demand or agreements made by such agent shall be deemed to have been made directly by the companies.

Effective Date of this Endorsement _____ 12:01 a.m. Standard Time to form a part of policy No. _____.

Issued to _____ For the subscribing companies.

Date of Issue _____.

By _____ General Manager.

Endorsement No. _____

NE–50 (1/1/81)

NE–51 (1/1/81)—AMENDMENT OF DEFINITION OF CONDITION 2 *Inspection; Suspension* AND *Insured Shipment*

(Indemnified Nuclear Facility)

It is agreed that:

(1) Condition 2 *Inspection; Suspension* is replaced by the following:

2. Inspection; Suspension. The companies shall at any time be permitted but not obligated to inspect the facility and all operations relating thereto and to examine the insured's books and records as far as they relate to the subject of this insurance and any property insurance afforded the insured

through American Nuclear Insurers. If a representative of the companies discovers a condition which he believes to be unduly dangerous with respect to the nuclear energy hazard, a representative of the companies may request that such conditions be corrected without delay. In the event of noncompliance with such requests, a representative of the companies may, by notice to the named insured, to any other person or organization considered by the companies to be responsible for the continuation of such dangerous condition, and to the United States Nuclear Regulatory Commission, suspend this insurance with respect to the named insured and such other person or organization effective 12:00 midnight of the next business day of such Commission following the date that such Commission receives such notice. The period of such suspension shall terminate as of the time stated in a written notice from the companies to the named insured and to each such person or organization that such condition has been corrected.

Neither the right to make such inspections and examinations nor the making thereof nor advice or report resulting therefrom shall constitute an undertaking, on behalf of or for the benefit of the insured or others, to determine or warrant that such facility or operations are safe or healthful, or are in compliance with any law, rule or regulation. In consideration of the issuance or continuation of this policy, the insured agrees that neither the companies nor any persons or organizations making such inspections or examinations on their behalf shall be liable with respect to injury to or destruction of property at the facility, or any consequential loss or expense resulting therefrom, or any loss resulting from interruption of business or manufacture, arising out of the making of or a failure to make any such inspection or examination, or any report thereon, or any such suspension of insurance, but this provision does not limit the contractual obligations of the companies under this policy or any policy affording the insured property insurance through American Nuclear Insurers.

(2) The definition of *insured shipment* in Insuring Agreement III, *Definitions,* is replaced by the following: *insured shipment* means a shipment of source material, special nuclear material, spent fuel, waste, or tailings or wastes produced by the extraction or concentration of uranium or thorium from any ore processed primarily for its source material content herein called *material,* (1) to the facility from any location except an indemnified nuclear facility, but only if the transportation of the material is not by predetermination to be interrupted by removal from a transporting conveyance for any purpose other than the continuation of its transportation, or (2) from the facility to any other location, but only until the material is removed from a transporting conveyance for any purpose other than the continuation of its transportation.

Effective Date of this Endorsement _____ 12:01 a.m. Standard Time to form a part of Policy No. _____

Issued to _____ For the subscribing companies.

Date of Issue _____.

By _____ General Manager.

Endorsement No. _____

NE–51 (1/1/81)

AMENDMENT OF COVERAGE ENDORSEMENT FOR WORKERS CLAIMS

(FACILITY FORM)

NE–64(1/1/88)

Preamble

1. The insurance and rating plan presently used by Nuclear Energy Liability Insurance Association (*NELIA*) and Mutual Atomic Energy Liability Underwriters (*MAELU*) do not make a distinction between workers claims arising from catastrophic events and those arising from lesser events;

2. NELIA and MAELU believe that the lack of such a distinction will adversely affect their ability to continue to attract from world markets very large amounts of nuclear energy liability insurance for the nuclear industry;

3. NELIA and MAELU want to avoid this potential loss of capacity and to continue to provide nuclear energy liability insurance for workers claims. Accordingly NELIA and MAELU desire to restructure their present insurance programs, including this policy, effective January 1, 1988.

Now, Therefore, the Named Insured and the companies do hereby agree as follows:

1. Definitions

When used in reference to this endorsement:

This policy means the policy of which this endorsement forms a part;

Nuclear related employment means all work performed at one or more than one nuclear facility in the United States of America or in connection with the transportation of nuclear material to or from any such facility. All of a worker's nuclear related employment shall be considered as having begun on the first day of such employment, regardless of the number of employers involved or interruptions in such employment;

Worker refers to a person who is or was engaged in nuclear related employment;

Workers claims means claims for damages because of bodily injury to a worker caused by the radioactive, toxic, explosive or other hazardous properties of nuclear material and arising out of or in the course of the worker's nuclear related employment;

Extraordinary nuclear occurrence means an event which the United States Nuclear Regulatory Commission has determined to be an *extraordinary nuclear occurrence* as defined in the Atomic Energy Act of 1954, or in any law amendatory thereof.

2. Application of This Endorsement

This endorsement applies only to such insurance as is afforded by this policy for workers claims which do not arise in whole or in part out of an extraordinary nuclear occurrence.

3. Exclusion of New Workers Claims

This policy does not apply to bodily injury to a worker which arises in whole or in part out of nuclear related employment that begins on or after January 1, 1988.

4. Application of Policy to Workers Claims Not Excluded

With respect to such insurance as is afforded by this policy for workers claims which are not excluded, Insuring Agreement IV does not apply and the following Insuring Agreement IV-A does apply:

IV-A Application of Policy to Workers Claims. This policy applies only to bodily injury (1) which is caused during the policy period by the nuclear energy hazard and (2) which is discovered and for which written claim is made against the insured not later than the close of December 31, 1997.

5. Availability of Supplemental Insurance

NELIA and MAELU are offering to make insurance under one or more Master Worker Policies available to all holders of Nuclear Energy Liability Policies (Facility Form). *This offer is contingent on sufficient support from policy holders, and may be withdrawn or modified by Nelia or Maelu as they deem necessary or appropriate.*

The Master Workers Policies will provide, under their separate terms and conditions, coverage for new workers claims. Premiums will be subject to a separate Industry Retrospective Rating Plan.

Coverage under the new master worker policies is not automatic. A written request must be submitted to Nelia or Maelu through regular market channels.

It is understood and agreed that all of the provisions of this endorsement shall remain in full force and effect without regard to this section 5, and without regard to whether or not the Named Insureds become insureds under the Master Worker Policies, or whether or not NELIA or MAELU terminate such policies or withdraw or modify their offer to underwrite such policies.

Executed for the companies

Date _____

By _____

(Signature or Authorized Officer)

_____

(Print or Type Name and Title of Officer)

Executed for the Named Insured

_____

(Named Insured—Type or Print)

Date _____

By _____

(Signature of Authorized Officer)

_____

(Print or Type Name and Title of Officer)

Effective Date of this Endorsement

_____

12:01 a.m. Standard Time

To form a part of Policy No. _____

Issued to _____

Date of Issue _____

For the subscribing companies

By _____

General Manager

Endorsement No.

Countersigned by _____

AMENDMENT OF COVERAGE ENDORSEMENT FOR WORKERS CLAIMS (FACILITY FORM) NE–66(1/1/88)

It is agreed that:

1. Definitions

When used in reference to this endorsement:

This policy means the policy of which this endorsement forms a part;

Nuclear related employment means all work performed at one or more than one nuclear facility in the United States of America or in connection with the transportation of nuclear material to or from any such facility. All of a worker's nuclear related employment shall be considered as having begun on the first day of such employment, regardless of the number of employers involved or interruptions in such employment;

Worker refers to a person who is or was engaged in nuclear related employment;

Workers claims means claims for damages because of bodily injury to a worker caused by the radioactive, toxic, explosive or other hazardous properties of nuclear material and arising out of or in the course of the worker's nuclear related employment;

Extraordinary nuclear occurrence means an event which the United States Nuclear Regulatory Commission has determined to be an *extraordinary nuclear occurrence* as defined in the Atomic Energy Act of 1954, or in any law amendatory thereof.

2. Application of This Endorsement

This endorsement applies only to such insurance as is afforded by this policy for workers claims which do not arise in whole

or in part out of an extraordinary nuclear occurrence.

3. Exclusion of New Workers Claims

This policy does not apply to bodily injury to a worker which arises in whole or in part out of nuclear related employment that begins on or after January 1, 1988.

4. Application of Policy to Workers Claims Not Excluded

With respect to such insurance as is afforded by this policy for workers claims which are not excluded, Insuring Agreement IV does not apply and the following Insuring Agreement IV-A does apply:

IV-A APPLICATION OF POLICY TO WORKERS CLAIMS

This policy applies only to bodily injury (1) which is caused during the policy period by the nuclear energy hazard and (2) which is discovered and for which written claim is made against the insured not later that the close of December 31, 1997.

5. Availability of Supplemental Insurance

NELIA and MAELU are offering to make insurance under one or more Master Worker Policies available to all holders of Nuclear Energy Liability Policies (Facility Form). *This offer is contingent on sufficient support from policyholders, and may be withdrawn or modified by NELIA or MAELU as they deem necessary or appropriate.*

The Master Worker Policies will provide, under their separate terms and conditions, coverage for new workers claims. Premiums will be subject to a separate Industry Retrospective Rating Plan.

Coverage under the new master worker policies is not automatic. A written request must be submitted to NELIA or MAELU through regular market channels.

It is understood and agreed that all of the provisions of this endorsement shall remain in full force and effect without regard to this Section 5, and without regard to whether or not the Named Insureds become insureds under the Master Worker Policies, or whether or not NELIA or MAELU terminate such policies or withdraw or modify their offer to underwrite such policies.

Explanation of Use of This Endorsement: This endorsement is a mandatory endorsement which is to be attached to new Facility Form Policies issued on or after January 1, 1988.

Effective Date of this Endorsement

_____

12:01 a.m. Standard Time

To form a part of Policy No. _____

Issued to _____

Date of Issue _____

For the subscribing companies

By _____

General Manager

Endorsement No.

Countersigned by _____

NUCLEAR ENERGY LIABILITY INSURANCE ASSOCIATION

NUCLEAR ENERGY LIABILITY POLICY

Facility Worker Form, herein called Master Worker Policy, NMWP–1(1/1/88)

The undersigned members of Nuclear Energy Liability Insurance Association, hereinafter called the *companies*, each itself severally and not jointly, and in the respective proportion hereinafter set forth, agree with the insureds named in Item 1 of the Declarations of each Certificate, hereinafter called the *Named Insureds*, in consideration of the payment of the premium, and subject to all of the provisions of the applicable Certificate and of this policy, as follows:

I—Relation Between the Master Worker Policy and Certificates

No insurance is provided by this policy except through a Certificate issued to form a part hereof. The insurance then applies separately to the persons and organizations who are defined in Section IV as insureds under each such Certificate, except with respect to the Amount of Insurance Available.

The Amount of Insurance Available through such a Certificate to any person or organization who is an insured thereunder is limited as provided in Section VIII of this policy.

II—Definitions

When used in reference to this policy:

Bodily injury means bodily injury, sickness or disease, including death resulting therefrom;

Byproduct material has the meaning given in the Atomic Energy Act of 1954, or in any law amendatory thereof;

Certificate, unless qualified, refers to a Certificate of Insurance (including Declarations and endorsements forming a part thereof) issued to form a part of this policy or of a MAELU Policy;

Claims costs means, with reference to claims or suits the companies have the right and duty to defend under this policy;

(1) Cost taxed against the insured in such suits and interest on any judgments therein;

(2) Premiums on appeal bonds and on bonds to release attachments in such suits (but the companies have no obligation to apply for or furnish such bonds;

(3) Reasonable expenses, other than loss of earnings, incurred by the insured at the companies' request;

(4) Payments for expenses incurred in the investigation, negotiation, settlement and

defense of such claims or suits, including, but not limited to, the cost of such allocated claims services by employees of the companies, fees and expenses of independent adjusters, attorneys' fees and disbursements, expenses for expert testimony, examination, x-ray or autopsy or medical expenses of any kind;

(5) Payments for expenses incurred by the companies in investigating an occurrence resulting in bodily injury or in minimizing its effects;

Discovery period means the period defined in Section VI B hereof;

Extraordinary nuclear occurrence means an event which the United States Nuclear Regulatory Commission has determined to be an *extraordinary nuclear occurrence* as defined in the Atomic Energy Act of 1954, or in any law amendatory thereof;

Insured contract means that part of a contract or agreement made prior to bodily injury to a new worker under which the insured assumes the tort liability of a third person to pay damages because of such bodily injury. *Tort liability* means a liability that would be imposed by law on the third person in the absence of an express assumption of liability by the third person;

Insured facility means a facility with respect to which insurance is provided through a Certificate;

Insured shipment means a shipment of source material, special nuclear material, spent fuel or waste (herein called *material*):

(1) To the facility from any location other than an insured facility, but only if the transportation of the material is not by predetermination to be interrupted by removal of the material from a transporting conveyance for any purpose other than the continuation of its transportation; or

(2) From the facility to any other location, but only until the material is removed from a transporting conveyance for any purpose other than the continuation of its transportation;

MAELU means Mutual Atomic Energy Liability Underwriters;

MAELU Policy means a Nuclear Energy Liability Policy (Facility Worker Form) written by members of MAELU;

NELIA means Nuclear Energy Liability Insurance Association;

New worker refers to a person who is or was engaged in nuclear related employment that begins on or after January 1, 1988;

New worker's claim means a claim for damages because of bodily injury to a new worker caused by the radioactive, toxic, explosive or other hazardous properties of nuclear material and arising out of or in the course of the new worker's nuclear related employment;

Non-ratable incurred losses has the meaning given in Attachment 1 to this policy;

Nuclear energy hazard means the radioactive, toxic, explosive or other hazardous properties of nuclear material which is:

(1) At the facility as described in the applicable Certificate issued to form a part of this policy or has been discharged or dispersed therefrom without intent to relinquish possession of custody thereof to any other person or organization; or

(2) In an insured shipment that is away from any other insured nuclear facility and is in the course of transportation, including handling and temporary storage incidental thereto within:

(a) The territorial limits of the United States of America, its territories or possessions or Puerto Rico; or

(b) International waters or airspace, provided that:

(i) The nuclear material is in the course of transportation between two points located within the territorial limits described in (a) above; and

(ii) There are no deviations in the course of the transportation for the purpose of going to any other country, state or nation, except to a port or place of refuge in an emergency;

Nuclear facility means any of the following and includes the site on which any of them is located, all operations conducted on such site and all premises used for such operations:

(1) The facility as described in any Certificate;

(2) Any nuclear reactor;

(3) Any equipment or device designed or used for:

(a) Separating the isotopes of uranium or plutonium;

(b) Processing or utilizing spent fuel; or

(c) Handling, processing or packaging waste;

(4) Any equipment or device used for the processing, fabricating or alloying of special nuclear material if at any time the total amount of such material in the custody of the insured at the premises where such equipment of device is located consists of or contains more than 25 grams of plutonium or uranium 233 or any combination thereof, or more than 250 grams of uranium 235;

(5) Any structure, basin, excavation, premises or place prepared or used for the storage or disposal of waste;

Nuclear material means source material, special nuclear material or byproduct material;

Nuclear reactor means any apparatus designed or used to sustain nuclear fission in a self-supporting chain reaction or to contain a critical mass of fissionable material;

Nuclear related employment means all work performed at one or more than one nuclear facility in the United States of America or in connection with the transportation of nuclear material to or from any such facility.

All of a new worker's nuclear related employment shall be considered as having begun on the first day of such employment, regardless of the number of employers involved or interruptions in such employment;

Policy period means the period defined in Section VI A hereof;

Ratable incurred losses has the meaning given in Attachment 1 to this policy;

Source material has the meaning given in the Atomic Energy Act of 1954, or in any law amendatory thereof, and also includes tailings or wastes produced by the extraction of uranium or thorium from ore processed primarily for its source material content;

Special nuclear material has the meaning given in the Atomic Energy Act of 1954, or in any law amendatory thereof;

Spent fuel means any fuel element or fuel component, solid or liquid, which has been used or exposed to radiation in any nuclear reactor;

The facility refers to the facility described in the Declarations of a Certificate. It includes the location described in Item 3 thereof and all property and operations at such location;

Waste means any waste material that contains byproduct material and results from the operation by any person or organization of:

(1) Any nuclear reactor; or

(2) Any equipment or device designed or used for:

(a) Separating the isotopes of uranium or plutonium;

(b) Processing or utilizing spent fuel; or

(c) Handling, processing or packaging such waste material.

III—Coverage

In the event that a new worker's claim is made against a person or organization who is an insured under a Certificate issued to form a part of this policy:

(1) The companies shall pay on behalf of the insured all sums which the insured shall become legally obligated to pay as damages because of bodily injury to which this policy applies, sustained by a new worker and caused by the nuclear energy hazard.

The companies shall have the right and duty to defend any suit against the insured alleging such injury and seeking damages payable under the terms of this policy. But the companies may make such investigation and settlement of any claim or suit seeking such damages as they deem appropriate.

(2) The companies shall also pay, as part of the Amount of Insurance Available under this policy, the claims costs relating to any such claim or suit.

(3) The companies' obligation to pay damages and claims costs, and to defend any claim and suit ends when the Policy Aggregrate Limit has been exhausted pursuant to the provisions of Section VIII.

IV—Definition of Insured

When used in reference to a Certificate issued to form a part of this policy, the unqualified word *insured* means:

(1) each insured named in Item 1 of the Declarations of the Certificate; and

(2) any other person or organization with respect to legal responsibility for damages because of bodily injury to a new worker caused by the nuclear energy hazard applicable to the Certificate. This subsection (2) does not include as an insured the United States of America or any of its agencies except the Tennessee Valley Authority.

V—Exclusions

This policy does not apply:

(1) To any obligation for which the insured or any carrier as his insurer may be held liable under any worker's compensation, unemployment compensation or disability benefits law, or under any similar law;

(2) To bodily injury to any employee of the insured arising out of or in the course of employment by the insured; but this exclusion (2) does not apply to liability assumed by the insured under an insured contract;

(3) To liability assumed by the insured under contract, other than an insured contract;

(4) To bodily injury to a new worker due to the manufacturing, handling or use at the location designated in Item 3 of the Declarations of any Certificate, in time of peace or war, of any nuclear weapon or other instrument of war utilizing special nuclear material or byproduct material;

(5) To bodily injury to a new worker due to war, whether or not declared, civil war, insurrection, rebellion or revolution, or to any act or condition incident to any of the foregoing;

(6) To bodily injury to a new worker arising in whole or in part out of an extraordinary nuclear occurrence.

VI—Policy Period; Discovery Period; Application of Policy

A. Policy Period

The policy period of this policy begins at 12:01 a.m. on January 1, 1988 and ends at the close of December 31, 1992, Eastern Standard Time, or when all Certificates issued to form a part hereof have been cancelled, whichever first occurs.

B. Discovery Period

The discovery period for claims made under this policy begins at 12:01 a.m. on January 1, 1988 and ends at the close of December 31, 1997, Eastern Standard Time.

C. Application of Policy

This policy applies only to bodily injury to a new worker (1) which is caused during the

policy period by the nuclear energy hazard and (2) which is discovered and for which written claim is first made against the insured within the discovery period.

VII—Other Insurance

A. This insurance is primary insurance under any insurance afforded by a Master Policy-Nuclear Energy Liability Insurance (Secondary Financial Protection) issued by NELIA or MAELU.

B. If an insured has other valid and collectible insurance, except under a MAELU Policy, for loss or expense covered by this policy, this shall be excess insurance over such other insurance. If the insured has insurance under a MAELU Policy, whether the insurance is collectible or not, the companies shall then be liable under this policy only for such proportion of loss or expense as the amount stated as the Policy Aggregate Limit in Section VIII of this policy bears to the sum of such amount and the corresponding amount stated in the MAELU Policy.

VIII—Amount of Insurance Available

A. Policy Aggregate Limit

1. The Policy Aggregate Limit is $124 million. This limit is not cumulative from year to year. The limit applies to all new worker's claims that qualify for coverage under this policy (herein called *qualified claims*).

2. The Policy Aggregate Limit applies collectively to all new worker's claims. Such claims may be paid by NELIA on behalf of the companies as the claims, in NELIA's discretion, become ready for disposition, and claims costs may be paid as they become due, all without regard to the order in which such claims were made and without any obligation to maintain, reserve or use any portion of the Policy Aggregate Limit for claims reported under any particular Certificate.

B. Limitation of the Companies' Liability

1. Regardless of the number of (a) Certificates issued to form a part of this policy, (b) persons and organizations who are insureds under such Certificates, (c) qualified claims, or (d) years this policy or any such Certificates shall continue in force, the Policy Aggregate Limit is the total liability of the companies for all of their obligations under this policy, including the defense of suits and the payment of damages and claims costs.

2. This policy provides for certain automatic reinstatements of the Policy Aggregate Limit. Regardless of such provision, if, during the policy period or thereafter, the total payments of the companies for

(a) Non-ratable incurred losses, and

(b) Those ratable incurred losses for which the companies have not been reimbursed under the Industry Retrospective Rating Plan Premium Endorsement described in Attachment 1 to this policy,

equal $124 million, the Policy Aggregate Limit shall be deemed to be exhausted, and shall not be further reinstated except by an endorsement issued to form a part of this policy for additional premium as determined by the companies.

C. Reduction and Reinstatement of the Policy Aggregate Limit

1. Each payment made by the companies in discharge of their obligations under this policy shall reduce the Policy Aggregate Limit by the amount of such payment.

2. The companies shall, however, automatically reinstate the policy aggregate limit until the total amount of such reinstatements equals $124 million, but in no event shall there be any automatic reinstatements after the Policy Aggregate Limit is exhausted pursuant to the provisions of subsection B.2. above. Thereafter, there shall be no further reinstatement of the Policy Aggregate Limit except by an endorsement issued to form a part of this policy for additional premium as determined by the companies.

3. It is a condition of this insurance that the companies shall have the right to reimburse themselves, as a matter of first priority, from funds held by NELIA in the Special Reserve Account described in Attachment 1 to this policy or from retrospective premiums received by NELIA for this insurance. The amount of reimbursement shall be equal to 95% of each payment made by the companies with respect to their obligations under this policy.

IX—Insured's Duties in Case of Claims or Suits

A. Notice of Claims or Suits

In the event of any claim or suit involving bodily injury to which a Certificate issued to form a part of this policy applies, written notice containing particulars sufficient to identify the insured and also reasonably obtainable information with respect to the time, place and circumstances thereof shall be given by or for the insured to the companies as soon as practicable. The insured shall immediately forward to the companies every demand, notice, summons or other process received relating to claims or suits against the insured.

B. Assistance and Cooperation

The insured shall cooperate with the companies and, upon their request, shall:

(1) Attend hearings and trials; and

(2) Assist in making settlements, securing and giving evidence, obtaining the attendance of witnesses and in the conduct of any legal proceedings in connection with the subject matter of this insurance.

The insured shall not, except at the insured's own cost, make any payment, assume any obligation or incur any expense.

X—Subrogation

In the event of any payment through a Certificate to form a part of this policy, the companies shall be subrogated to all the insured's rights of recovery therefor against any person or organization, and the insured shall execute and deliver instruments and papers, and so whatever else is necessary to secure such rights. Prior to knowledge of bodily injury caused by the nuclear energy hazard the insured may waive in writing any or all right of recovery against any person or organization, but after such knowledge the insured shall not waive or otherwise prejudice any such right of recovery.

The companies hereby waive any right of subrogation against (1) any other insured of (2) the United States of America or any of its agencies acquired by reason of any payment under this policy.

It is a condition of this policy that if an insured makes a recovery on account of any such injury, the insured shall repay to the companies the amount to which the companies would have been entitled had the foregoing provisions, or any of them, not been included in the policy.

XI—Inspection and Suspension

The companies shall be permitted, but not obligated, to inspect at any time the facility as described in any Certificate and all books, records and operation relating thereto, both with respect to this insurance, and any other nuclear energy liability insurance and property insurance also afford with respect thereto by members of NELIA, American Nuclear Insurers, MAELU or MAERP Reinsurance Association.

If a representative of the companies discovers a condition which he or she believes to be unduly dangerous with respect to the risks insured under the Certificate, a representative of the companies may request such condition to be corrected without delay. In the event of noncompliance with the request, an officer of NELIA may, by written notice mailed or delivered to the first Named Insured, with similar notice to the United States Nuclear Regulatory Commission, suspend the insurance afforded by a Certificate issued by NELIA effective 12:00 midnight of the next business day of such Commission following the date that such Commission receives such notice. The period of such suspension shall terminate as of the time stated in a written notice from NELIA to the first Named Insured that such condition has been corrected.

Neither the right to make such inspections or suspensions nor the making thereof nor any advice or report resulting therefrom shall constitute an undertaking, on behalf of or for the benefit of the Named Insureds or others to determine or warrant that the facility or operations relating thereto are safe or healthful, or are in compliance with any law, rule or regulation.

In consideration of the issuance or continuation of a Certificate, the Named Insureds agree that neither the companies nor any persons or organizations making such inspections on their behalf shall be liable for damage to the facility or any consequential damage or cost resulting therefrom, including but not limited to any such damage or cost relating to interruption of business or manufacture, arising out of the making of or failure to make any such inspection of the facility, any report thereon, or any such suspension of insurance, but this provision does not limit the companies' contractual obligations under a Certificate issued by NELIA or any policy issued by NELIA or American Nuclear Insurers affording the insured nuclear energy liability or property insurance.

XII—Cancellation of Certificates

The first Named Insured designated in a Certificate issued to from a part of this policy any cancel such Certificate by mailing to the companies and the United States Nuclear Regulatory Commission written notice stating when, not less than 30 days thereafter, such cancellation shall be effective.

The companies may cancel any such Certificate by mailing to the first Named Insured designated therein at the address shown in such Certificate and to the United States Nuclear Regulatory Commission written notice, stating when, not less than 90 days thereafter, such cancellation shall be effective; provided in the event of non-payment of premium, or if the operator of the facility, as designated in the Declarations of the Certificate, is replaced by another person or organization, such Certificate may be cancelled by the companies by mailing to the first Named Insured at the address shown therein and to the United States Nuclear Regulatory Commission written notice, stating when, not less than 30 days thereafter, such cancellation shall be effective.

The mailing of notice as aforesaid shall be sufficient proof of notice. The effective date and hour of cancellation stated in the notice shall become the end of the Certificate period. Delivery of such written notice either by the first Named Insured or the companies shall be equivalent to mailing.

Upon cancellation of a Certificate, other than as of the end of December 31 in any year, the earned standard premium for the period such Certificate has been in force since the preceding December 31 shall be computed in accordance with the following provisions:

(1) If the first Named Insured cancels, the earned standard premium for such period

shall be computed in accordance with the customary annual short rate table and procedure; provided, however, that if the first Named Insured cancels after knowledge of bodily injury caused by the nuclear energy hazard, all premiums theretofore paid or payable shall be fully earned;

(2) If the companies cancel, the earned standard premium for such period shall be computed pro rata.

Premium adjustment, if any, may be made either at the time of cancellation or as soon as practicable after cancellation becomes effective, but payment of tender of unearned premium is not a condition of cancellation.

Cancellation of a Certificate shall not affect the rights and obligations of the Named Insureds under the Insureds under the Industry Retrospective Rating Plan Premium Endorsement forming a part of the Certificate.

XIII—General Conditions

A. Premium

The Named Insureds designated in a Certificate issued by NELIA shall pay the companies the premiums for the Certificate in accordance with the provisions of the *Industry Retrospective Rating Plan Premium Endorsement* described in Attachment 1 to this policy.

B. Modifications, Waiver

The provisions of this policy or a Certificate issued to form a part hereof shall not be changed or waived except by an endorsement issued by the companies to form a part of the policy or Certificate.

C. Assignment

Assignment of interest under a Certificate issued to form a part of this policy shall not bind the companies until their consent is endorsed thereon. If, however, a Named Insured shall die or be declared bankrupt or insolvent, the Certificate shall cover the Named Insured's legal representative, receiver or trustee as an insured, but only with respect to liability as such, and then only provided written notice of the appointment as legal representative, receiver or trustee is given to the companies within 10 days after such appointment.

D. Suit

No suit or action on a Certificate issued to form a part of this policy shall lie against the companies or any of them unless, as a condition precedent thereto, the insured shall have fully complied with all the terms of the policy, nor until the amount of the insured's obligation to pay shall have been finally determined either by judgment against the insured after actual trial or by written agreement of the insured, the claimant and the companies.

Any person or organization or the legal representative thereof who has secured such judgment of written agreement shall thereafter be entitled to recover under the Certificate to the extent of the insurance afforded by this policy through the Certificate. No person or organization shall have any right under the Certificate to join the companies or any of them as parties to any action against the insured to determine the insured's liability, nor shall the companies or any of them be impleaded by the insured or the insured's legal representative.

Bankruptcy or insolvency of the insured or the insured's estate shall not relieve the companies of any of their obligations under this policy.

E. Authorization of The First Named Insured

Except with respect to compliance with the obligations imposed on the insured by the Sections of this policy entitled *Insured's Duties in Case of Claims or Suits,* Subrogation and *Suit,* the first Named Insured designated in the Declarations of a Certificate issued to form a part of this policy is authorized to act for every other insured in all matters pertaining to this insurance.

F. Insured Representation

Any notice, sworn statement of proof of Loss which may be required by the provisions of this policy may be given to any one of the companies specified in the Schedule of Subscribing Companies attached hereto. Such notice, statement or proof of Loss so given shall be valid and binding on all such companies.

In any action or suit against such companies, service of process may be made on any one of them and such service shall be valid and binding service on all such companies.

Nuclear Energy Liability Insurance Association is the agent of the companies with respect to all matters pertaining to this insurance. All notices or other communications required by this policy may be given to such agent at its office at: Nuclear Energy Liability Insurance Association, The Exchange, Suite 245, 270 Farmington Avenue, Farmington, Connecticut 06032, with the same force and effect as if given directly to the companies. Any requests, demands or agreements made by such agent shall be deemed to have been made directly by the companies.

G. Changes in Subscribing Companies and Their Proportionate Liability

By acceptance of this policy the Named Insureds agree that the members of Nuclear Energy Liability Insurance Association liable under this policy, and the proportionate liability of each such member, may change from year to year, and further agree that regardless of such changes:

(1) Each company subscribing this policy upon its issuance shall be liable only for its stated proportion of any obligation assumed or expense incurred under this policy because of bodily injury to new workers caused, during the period from the effective date of this policy to the close of December 31 next following, by the nuclear energy hazard; for each subsequent calendar year, beginning January 1 next following the effective date of this policy, any change in the subscribing companies and the proportionate liability of each such company shall be stated in an endorsement issued to form a part of this policy, duly executed and attested by the President of Nuclear Energy Liability Insurance Association on behalf of each such company, and a copy of which will be mailed or delivered to the first Named Insured of each Certificate.

(2) The liability of any subscribing company shall not be cumulative from year to year.

H. Declarations

By acceptance of this Master Worker Policy, the Named Insureds designated in a Certificate agree that the statements in such Certificate are their agreements and representations, that this Master Worker Policy and such Certificate are issued in reliance upon the truth of such representations and that this Master Worker Policy and such Certificate embody all agreements between such Named Insureds and the companies or any of their agents relating to this insurance.

In Witness Whereof, the companies subscribing this policy have caused the policy to be executed and attested on their behalf by the President of Nuclear Energy Liability Insurance Association and duly countersigned by an authorized representative, but this policy shall be binding on each company only to the extent of its designated proportion of any obligation assumed or expense incurred under this policy.

For the Subscribing Companies:
Date of Issue: _____ 19____

_____
Countersigned by: (Authorized Representative)

NUCLEAR ENERGY LIABILITY INSURANCE ASSOCIATION

NUCLEAR ENERGY LIABILITY POLICY

(Facility Worker Form) herein called the Master Worker Policy

Certificate of Insurance, NMWPC–1(1/1/88)

Certificate No. _____

This is to certify that the insured named in Item 1 of the Declarations hereof, hereinafter called the *Named Insureds,* have obtained insurance under the Master Worker Policy issued by Nuclear Energy Liability Insurance Association on behalf of its members. The insurance is subject to all of the provisions of the *Certificate* and the Master Worker Policy.

1—Declarations

Item 1.—Named Insureds and Addresses:

Item 2.—Certificate Coverage Period:

Beginning at 12:01 a.m. January 1, 1988 and ending at the close of December 31, 1992, Eastern Standard Time, or at the time and date this Certificate is cancelled or terminated, whichever first occurs.

Item 3.—Description of the Facility:

Location:
Type:
Operator of the Facility:

Item 4.—Amount of Insurance Available:

The amount of insurance afforded by the Master Worker Policy through this Certificate shall be determined by Section VIII of the Master Worker Policy and all of the other provisions of the policy relating thereto.

Item 5.—Advance Premium: $

2—Application of Certificate

This Certificate applies only to bodily injury to a new worker (1) which is caused, during the Certificate Coverage Period, by the nuclear energy hazard and (2) which is discovered and for which written claim is first made against an insured under the Certificate within the discovery period of the Master Worker Policy.

3—Industry Retrospective Rating Plan

All insurance under the Master Worker Policy is subject to the Industry Retrospective Rating Plan in use by the companies. No insurance is provided under this Certificate unless and until the first Named Insured has accepted in writing the Industry Retrospective Rating Plan Premium Endorsement and a copy of the signed endorsement has been issued by the companies to form a part of this Certificate.

In Witness Whereof, the companies subscribing the Master Worker Policy have caused this Certificate to be executed and attested on their behalf by the President of Nuclear Energy Liability Insurance Association and duly countersigned by an authorized representative.

For the Subscribing Companies:
Date of Issue _____ 19 _____
Countersigned by: _____
(Authorized Representative)

NUCLEAR ENERGY LIABILITY INSURANCE ASSOCIATION

NUCLEAR ENERGY LIABILITY INSURANCE

Industry Retrospective Rating Plan Premium Endorsement, NE-W-1(1/1/88)

It is agreed that:

1. Definitions

With reference to the premium for the Certificate of which this endorsement forms a part:

Master Worker Policy means the Master Worker Policy issued by NELIA;

Certificate Holder means the first Named Insured in a Certificate issued to form a part of the Master Worker Policy;

Advance premium, for any calendar year, is the estimated standard premium for that calendar year;

Standard premium, for any calendar year, is the premium for that calendar year computed in accordance with the companies' rules, rates, rating plans (other than the Industry Retrospective Rating Plan), premiums and minimum premiums applicable to this insurance. Standard premium includes elements for premium taxes, expenses, profit and contingencies, guaranteed cost insurance and estimated reserve premium. The elements of standard premium, other than for premium taxes and estimated reserve premium, are not subject to retrospective adjustment;

Reserve premium means that portion of the premium for a Certificate (including reserve premium charges paid) that is specifically allocated under the Industry Retrospective Rating Plan for ratable incurred losses;

Industry reserve premium, for any period, is the sum of the reserve premiums for that period for all Certificates issued to form a part of the Master Worker Policy;

Retrospective adjustment ratio, for any period, is the ratio of the reserve premium for this Certificate for that period to the industry reserve premium for the same period;

Incurred losses means the sum of all:

(1) Losses and expenses paid by NELIA, and

(2) Reserves for losses and expenses as estimated by NELIA, because of obligations assumed and expenses incurred in connection with such obligations by the members of NELIA under the Master Worker Policy;

Ratable incurred losses means 95% of incurred losses. Ratable incurred losses are the portion of incurred losses which are not covered by the guaranteed cost insurance element of standard premiums;

Non-ratable incurred losses means 5% of incurred losses. Nonratable incurred losses are the portion of incurred losses which are covered by the guaranteed cost insurance element of standard premiums;

Reserve for refunds, as of any date, is the algebraic difference between:

(1) All industry reserve premium for the period from January 1, 1988 through such date, minus

(2) The total for the same period of (a) all ratable incurred losses and (b) all industry reserve premium refunds made under the Industry Retrospective Rating Plan by members of NELIA;

Industry reserve premium charge, for any period, means the amount determined pursuant to the provisions of Section 4 of this endorsement for payment by the Named Insureds under Certificates;

Reserve premium charge means the portion of an industry reserve premium charge payable by the Named Insureds under Certificates;

Industry reserve premium refund for any period, means the amount determined pursuant to the provisions of Section 4 of this endorsement for return to the Named Insureds under Certificates;

Reserve premium refund means the portion of an industry reserve premium refund returnable to the Named Insureds under this Certificate.

2. Payment of Advance and Standard Premiums

The Named Insureds shall pay the companies the advance premium stated in the declarations, for the period from the effective date of this Certificate through December 31 following. Thereafter, at the beginning of each calendar year while this Certificate is in force, the Named Insureds shall pay the advance premium for such year to the companies.

The advance premium for each calendar year shall be stated in the Advance and Standard Premium Endorsement for the year issued by the companies as soon as practicable prior to or after the beginning of the year.

As soon as practicable after the end of a calendar year or the Certificate Coverage Period, the standard premium for the preceding year shall be finally determined and stated in the Advance and Standard Premium Endorsement for that year. If the Standard Premium exceeds the Advance Premium paid for that year, the Named Insureds shall pay the excess to the companies; if less, the companies shall return to the Named Insureds the excess portion paid.

The Named Insureds shall maintain records of the information necessary for premium computation and shall send copies of such records to the companies as directed, at the end of each calendar year, at the end of the Certificate Coverage Period and at such other times as the companies may direct.

3. Special Reserve Account; Use of Reserve Premiums

NELIA shall maintain on behalf of its members a Special Reserve Account for holding collectively all reserve premiums paid for all Certificates issued to form a part of the Master Worker Policy. Such premiums, together with any undistributed net income realized thereon after taxes and investment expenses, shall be used for the following purposes only:

(1) To pay ratable incurred losses or, in the event ratable incurred losses are paid under the Master Worker Policy from funds advanced by the members of NELIA subscribing the policy, to reimburse such members as a matter of first priority for the funds advanced;

(2) To refund any amounts so held to the Named Insureds, as provided in Section 4.

No members of NELIA and no Named Insureds shall have any individual interest in or claim upon amounts held in the special Reserve Account, except to participate proportionally in any refund or reimbursement provided for above.

All reserve premiums paid or payable for this certificate may be used by NELIA to discharge the obligations of its members under the Master Worker Policy with respect to the above purposes and arising out of claims made under any Certificate issued to form a part of the Master Worker Policy.

4. Payment of Reserve Premium Charges and Refunds

As soon as practicable after each December 31 the companies will review the status of the reserve for refunds and report their findings to all Certificate Holders.

If, at any time, the companies find that there is negative balance in the reserve for refunds and that such condition is likely to prevail, they shall determine an appropriate industry reserve premium charge. Similarly, if the companies find that there is a surplus positive balance, they shall determine an appropriate industry reserve premium refund.

The portion of an industry reserve premium charge or an industry reserve premium refund that is:

(1) Payable by the Named Insureds as a reserve premium charge, or

(2) Due such insureds as reserve premium refund, shall be determined by multiplying the industry reserve premium charge or the industry reserve premium refund by the retrospective adjustment ratio applicable to this Certificate.

The amount of any reserve premium charge shall be stated in a Retrospective Reserve Premium Charge Endorsement. The charge shall be paid promptly after receipt of the endorsement.

When all claims covered by the Master Worker Policy are closed the companies shall make a final review and report, and shall determine a final industry reserve premium charge or industry reserve premium refund equal to the amount of the balance.

5. Final Premium

The final premium for this Certificate shall be (a) the sum of the standard premiums for each calendar year, or portion thereof, during which the Certificate remains in force plus (b) the sum of all reserve premiums, including all reserve premium charges, minus (c) the sum of all reserve premium refunds.

6. Reserve Premium Charge Agreement

In consideration of (a) the participation of Named Insureds in other Certificates subject to the Industry Retrospective Rating Plan, (b) the undertaking of such Named Insureds to pay their appropriate share of any industry reserve premium charge and (c) the obligations assumed by the members of NELIA under the Master Worker Policy, the Named Insureds, by acceptance of the Master Worker Policy, agree:

(1) That the insurance provided by the Master Policy applies collectively to all claims covered by the policy through any and all Certificates issued to form a part of the policy.

(2) That the right of each Named Insured under a Certificate to receive reserve premium refunds and the obligation of each such insured to pay reserve premiums charges applies to all claims covered by the Master Worker Policy and continues until all such claims are closed, whether or not such claims were before the inception of the Certificate or after its termination.

(3) To pay all reserve premium charges due promptly after receipt of the Retrospective Reserve Premium Charge Endorsement, whether or not the Certificate is terminated. Any reserve premium charge shall be overdue if not paid within 60 days of the date of the invoice for the charge.

Overdue reserve premium charges shall bear interest from the due date until paid at an annual rate equal to the sum of (a) 3% plus (b) a rate of interest equal to Moody's Average Public Utility Bond Yield described in the issue of Moody's Bond Survey current on the due date. Any reserve premium refund due to Named Insureds under a Certificate shall be used to pay any overdue reserve premium charges to such Named Insureds.

7. Reserve Premium Refund Agreement

Each member of NELIA subscribing the Master Worker Policy for any calendar year, or portion thereof, with respect to which an industry reserve premium refund is determined to be payable thereby agrees for itself, severally and not jointly, and in the respective proportion of its liability assumed under

the Master Worker Policy for that calendar year, to return promptly to the Named Insureds that portion of such refund due such Insureds, as determined in accordance with the provisions of this endorsement.

Accepted and agreed by the first Named Insured in behalf of itself and every other Named Insured stated in the Declarations of the Certificate of which this endorsement forms a part.

_____
(First Named Insured—Type or Print
Date _____
By _____
(Signature of Authorized Officer)

_____
(Type of Print Named and Title of Officer)
Effective Date of this Endorsement _____
12:01 a.m. Standard Time
To form a part of Policy No _____
Issued to _____
Date of Issue _____

For the subscribing companies:
By _____
General Manager
Endorsement No:
Countersigned by _____

NUCLEAR ENERGY LIABILITY INSURANCE ASSOCIATION

NUCLEAR ENERGY LIABILITY INSURANCE

Advance Premium and Standard Premium Endorsement, NE-W-2(1/1/88)

Calendar Year 1988

1. Advance Premium

It is agreed that the Advance Premium due the companies for the period designated above is:
$ _____

2. Standard Premium and Reserve Premium

In the absence of a change in the Advance Premium indicated above, it is agreed that, subject to the previsions of the Industry Retrospective Rating Plan, the Standard Premium is said Advance Premium and the estimated reserve Premium element of the Standard Premium is:
$ _____

Explanation of Use of this Endorsement: This endorsement will be used in the first year of the Master Worker Policy. It states the Advance Premium and the estimated Reserve Premium for the year for the Certificate to which the endorsement is attached.
Effective Date of this Endorsement _____
12:01 a.m. Standard Time
To form a part of Policy No _____
Issued to _____
Date of Issue _____

For the subscribing companies:
By _____
General Manager
Endorsement No:
Countersigned by _____

NUCLEAR ENERGY LIABILITY INSURANCE ASSOCIATION

NUCLEAR ENERGY LIABILITY INSURANCE

Advance Premium and Standard Premium Endorsement, NE-W-3 (1/1/88)

Calendar Year _____

It is agreed that Items 1 and 2 of Endorsement No. are amended to read:

1. Advance Premium

It is agreed that the Advance Premium due the companies for the period designated above is:
$ _____

2. Standard Premium and Reserve Premium

In the absence of a change in the advance premium indicated above, it is agreed that, subject to the provisions of the Industry Retrospective Rating Plan, the Standard Premium is said Advance Premium and the estimated Reserve Premium element of the Standard Premium is:
$ _____

Explanation of Use of this Endorsement: This endorsement will be used for calendar years of the Master Worker Policy after the 1988 calendar year. It states the Advance Premium and the estimated Reserve Premium for the year for the Certificate to which the endorsement is attached.
Effective Date of this Endorsement _____
12:01 a.m. Standard Time
To form a part of Policy No _____
Issued to _____
Date of Issue _____

For the subscribing companies:
By _____
General Manager
Endorsement No. _____
Countersigned by _____

NUCLEAR ENERGY LIABILITY INSURANCE ASSOCIATION

NUCLEAR ENERGY LIABILITY INSURANCE

Retrospective Reserve Premium Charge Endorsement, NE-W-dash;5 (1/1/88)

1. Industry Reserve Premium Charge

In accordance with Section 4 of the Industry Retrospective Rating Plant Premium Endorsement attached to each Certificate to this policy, the companies have reviewed the status of the reserve for refunds, found that there is a negative balance in the reserve for refunds and have determined that an industry reserve premium charge, as indicated below, is appropriate:

$ _____

2. Retrospective Adjustment Ratio

The portion of the industry reserve premium charge payable by the Named Insureds under this Certificate is determined by multiplying such charge by this Certificate's retrospective adjustment ratio, which is:

_____

3. Reserve Premium Charge

The Named Insureds' portion of the industry reserve premium charge, as calculated above, is:

$ _____

Explanation of Use of this Endorsement: This endorsement will be issued by the companies under the Master Worker Policy after an industry reserve premium charge has been determined because there is a negative balance in the reserve for refunds. It states the reserve premium charge applicable to the Certificate to which the endorsement is attached.

Effective Date of this Endorsement _____
12:01 a.m. Standard Time
To form a part of Policy No. _____
Issued to _____
Date of Issue _____
For the subscribing companies
By _____
General Manager
Endorsement No. _____
Countersigned by _____

[25 FR 2948, Apr. 7, 1960]

EDITORIAL NOTE: For FEDERAL REGISTER citations affecting §140.91, see the List of CFR Sections Affected, which appears in the Finding Aids section of the printed volume and at *www.govinfo.gov*.

§ 140.92 Appendix B—Form of indemnity agreement with licensees furnishing insurance policies as proof of financial protection.

This indemnity agreement _____ is entered into by and between the _____ (hereinafter referred to as the *licensee*) and the United States Nuclear Regulatory Commission (hereinafter referred to as the *Commission*) pursuant to subsection 170c of the Atomic Energy Act of 1954, as amended (hereinafter referred to as *the Act*).

ARTICLE I

As used in this agreement,

1. *Nuclear reactor*, *byproduct material*, *person*, *source material*, *special nuclear material*, and *precautionary evacuation* shall have the meanings given them in the Atomic Energy Act of 1954, as amended, and the regulations issued by the Commission.

2.(a) For facilities designed for producing substantial amounts of electricity and having a rated capacity of 100,000 electrical kilowatts or more, and except when otherwise specifically provided, *amount of financial protection* means the amount specified in Item 2a. and b. of the Attachment annexed hereto, as modified by paragraph 8, Article II, with respect to common occurrences, and the amount available as secondary financial protection (in the form of private liability insurance available under an industry retrospective rating plan for deferred retrospective premium charges).

(b) For all other facilities, and except where otherwise specifically provided, *amount of financial protection* means the amount specified in Item 2a. and b., of the Attachment annexed hereto, as modified by paragraph 8, Article II, with respect to common occurrences.

3. (a) *Nuclear incident* means any occurrence including an extraordinary nuclear occurrence or series of occurrences at the location or in the course of transportation causing bodily injury, sickness, disease, or death, or loss of or damage to property, or loss of use of property, arising out of or resulting from the radioactive, toxic, explosive, or other hazardous properties of the radioactive material.

(b) Any occurrence including an extraordinary nuclear occurrence or series of occurrences causing bodily injury, sickness, disease or death, or loss of or damage to property, or loss of use of property, arising out of or resulting from the radioactive, toxic, explosive or other hazardous properties of

i. The radioactive material discharged or dispersed from the location over a period of days, weeks, months or longer and also arising out of such properties of other material defined as *the radioactive material* in any other agreement or agreements entered into by the Commission under subsection 170 c or k of the Act and so discharged or dispersed from *the location* as defined in any such other agreement, or

ii. The radioactive material in the course of transportation and also arising out of such properties of other material defined in any other agreement entered into by the Commission pursuant to subsection 170 c or k of the Act as *the radioactive material* and which is in the course of transportation,

shall be deemed to be a common occurrence. A common occurrence shall be deemed to constitute a single nuclear incident.

4. *Extraordinary nuclear occurrence* means an event which the Commission has determined to be an extraordinary nuclear occurrence as defined in the Atomic Energy Act of 1954, as amended.

5. *In the course of transportation* means in the course of transportation within the United States, or in the course of transportation outside the United States and any other nation, and moving from one person licensed by the Commission to another person

licensed by the Commission, including handling or temporary storage incidental thereto, of the radioactive material to the location or from the location provided that:

(a) With respect to transportation of the radioactive material to the location, such transportation is not by pre-determination to be interrupted by the removal of the material from the transporting conveyance for any purpose other than the continuation of such transportation to the location or temporary storage incidental thereto;

(b) The transportation of the radioactive material from the location shall be deemed to end when the radioactive material is removed from the transporting conveyance for any purpose other than the continuation of transportation or temporary storage incidental thereto;

(c) *In the course of transportation* as used in this agreement shall not include transportation of the radioactive material to the location if the material is also *in the course of transportation* from any other *location* as defined in any other agreement entered into by the Commission pursuant to subsection 170 c or k of the Act.

6. *Person indemnified* means the licensee and any other person who may be liable for public liability.

7. *Public liability* means any legal liability arising out of or resulting from a nuclear incident or precautionary evacuation (including all reasonable additional costs incurred by a State, or a political subdivision of a State, in the course of responding to a nuclear incident or precautionary evacuation), except (1) claims under State or Federal Workmen's Compensation Acts of employees of persons indemnified who are employed (a) at the location or, if the nuclear incident occurs in the course of transportation of the radioactive material, on the transporting vehicle, and (b) in connection with the licensee's possession, use or transfer of the radioactive material; (2) claims arising out of an act of war; and (3) claims for loss of, or damage to, or loss of use of (a) property which is located at the location and used in connection with the licensee's possession, use, or transfer of the radioactive material, and (b) if the nuclear incident occurs in the course of transportation of the radioactive material, the transporting vehicle, containers used in such transportation, and the radioactive material.

8. *The location* means the location described in Item 4 of the Attachment hereto.

9. *The radioactive material* means source, special nuclear, and byproduct material which (1) is used or to be used in, or is irradiated or to be irradiated by, the nuclear reactor or reactors subject to the license or licenses designated in the Attachment hereto, or (2) which is produced as the result of operation of said reactor(s).

10. *United States* when used in a geographical sense includes Puerto Rico and all territories and possessions of the United States.

ARTICLE II

1. At all times during the term of the license or licenses designated in Item 3 of the Attachment hereto, the licensee will maintain financial protection in the amount specified in Item 2 of the Attachment and in the form of the nuclear energy liability insurance policy designated in the Attachment. If more than one license is designated in Item 3 of the Attachment, the licensee agrees to maintain such financial protection until the end of the term of that license which will be the last to expire. The licensee shall, notwithstanding the expiration, termination, modification, amendment, suspension or revocation of any license or licenses designated in Item 3 of the Attachment, maintain such financial protection in effect until all the radioactive material has been removed from the location and transportation of the radioactive material from the location has ended as defined in paragraph 5(b), Article I of this section, or until the Commission authorizes the termination or the modification of such financial protection. The Commission will not unreasonably withhold such authorization.

2. In the event of any payment by the insurer or insurers under a policy or policies specified in Item 5 of the Attachment hereto which reduces the aggregate limit of such policy or policies below the amount of financial protection, the licensee will promptly apply to his insurers for reinstatement of the amount specified in Item 2a of the Attachment (without reference to paragraph b of Item 2) and will make all reasonable efforts to obtain such reinstatement. In the event that the licensee has not obtained reinstatement of such amount within ninety days after the date of such reduction, and in the absence of good cause shown to the contrary, the Commission may issue an order requiring the licensee to furnish financial protection for such amount in another form.

3. Any obligations of the licensee under subsection 53e(8) of the Act to indemnify the United States and the Commission from public liability, together with any public liability satisfied by the insurers under the policy or policies designated in the Attachment hereto, shall not in the aggregate exceed the amount of financial protection with respect to any nuclear incident, including the reasonable costs of investigating and settling claims and defending suits for damage.

4. With respect to any extraordinary nuclear occurrence to which this agreement applies, the Commission, and the licensee on behalf of itself and other persons indemnified, insofar as their interests appear, each agree to waive:

(a) Any issue or defense as to the conduct of the claimant or fault of persons indemnified, including, but not limited to:

(1) Negligence;

(2) Contributory negligence;

(3) Assumption of the risk;

(4) Unforeseeable intervening causes, whether involving the conduct of a third person or an act of God.

As used herein, *conduct of the claimant* includes conduct of persons through whom the claimant derives his cause of action;

(b) Any issue or defense as to charitable or governmental immunity;

(c) Any issue or defense based on any statute of limitations if suit is instituted within 3 years from the date on which the claimant first knew, or reasonably could have known, of his injury or damage and the cause thereof.

The waiver of any such issue or defense shall be effective regardless of whether such issue or defense may otherwise be deemed jurisdictional or relating to an element in the cause of action. The waivers shall be judicially enforceable in accordance with their terms by the claimant against the person indemnified.

5. The waivers set forth in paragraph 4 of this article:

(a) Shall not preclude a defense based upon a failure to take reasonable steps to mitigate damages;

(b) Shall not apply to injury or damage to a claimant or to a claimant's property which is intentionally sustained by the claimant or which results from a nuclear incident intentionally and wrongfully caused by the claimant;

(c) Shall not apply to injury to a claimant who is employed at the site of and in connection with the activity where the extraordinary nuclear occurrence takes place if benefits therefore are either payable or required to be provided under any workmen's compensation or occupational disease law: *Provided, however,* That with respect to an extraordinary nuclear occurrence occurring at the facility, a claimant who is employed at the facility in connection with the construction of a nuclear reactor with respect to which no operating license has been issued by the Nuclear Regulatory Commission shall not be considered as employed in connection with the activity where the extraordinary nuclear occurrence takes place if:

(1) The claimant is employed exclusively in connection with the construction of a nuclear reactor, including all related equipment and installations at the facility, and

(2) No operating license has been issued by the NRC with respect to the nuclear reactor, and

(3) The claimant is not employed in connection with the possession, storage, use or transfer of nuclear material at the facility;

(d) Shall not apply to any claim for punitive or exemplary damages, provided, with respect to any claim for wrongful death under any State law which provides for damages only punitive in nature, this exclusion does not apply to the extent that the claimant has sustained actual damages, measured by the pecuniary injuries resulting from such death but not to exceed the maximum amount otherwise recoverable under such law;

(e) Shall be effective only with respect to those obligations set forth in this agreement;

(f) Shall not apply to, or prejudice the prosecution or defense of, any claim or portion of claim which is not within the protection afforded under (1) the limit of liability provisions under subsection 170(e) of the Atomic Energy Act of 1954, as amended, and (2) the terms of this agreement and the terms of the nuclear energy liability insurance policy or policies designated in the attachment hereto.

6. The obligations of the licensee under this agreement shall apply only with respect to nuclear incidents occurring during the term of this agreement.

7. Upon the expiration or revocation of any license designated in Item 3 of the Attachment, the Commission will enter into an appropriate amendment of this agreement with the licensee reducing the amount of financial protection required under this Article; provided, that the licensee is then entitled to a reduction in the amount of financial protection under applicable Commission regulations and orders.

8. With respect to any common occurrence,

(a) If the sum of limit of liability of any Nuclear Energy Liability Insurance Association policy designated in Item 5 of the Attachment and the limits of liability of all other nuclear energy liability insurance policies (facility form) applicable to such common occurrence and issued by Nuclear Energy Liability Insurance Association exceeds $155,000,000 the amount of financial protection specified in Item 2 a and b of the Attachment shall be deemed to be reduced by that proportion of the difference between said sum and $155,000,000 as the limit of liability of the Nuclear Energy Liability Insurance Association policy designated in Item 5 of the Attachment bears to the sum of the limits of liability of all nuclear energy liability insurance policies (facility form) applicable to such common occurrence and issued by Nuclear Energy Liability Insurance Association;

(b) If the sum of the limit of liability of any Mutual Atomic Energy Liability Underwriters policy designated in Item 5 of the Attachment and the limits of liability of all

other nuclear energy liability insurance policies (facility form) applicable to such common occurrence and issued by Mutual Atomic Energy Liability Underwriters exceeds $45,000,000, the amount of financial protection specified in Item 2 a and b of the Attachment shall be deemed to be reduced by that proportion of the difference between said sum and $45,000,000 as the limit of liability of the Mutual Atomic Energy Liability Underwriters policy designated in Item 5 of the Attachment bears to the sum of the limits of liability of all nuclear energy liability insurance policies (facility form) applicable to such common occurrence and issued by Mutual Atomic Energy Liability Underwriters;

(c) If any of the other applicable agreements is with a person who has furnished financial protection in a form other than a nuclear energy liability insurance policy (facility form) issued by Nuclear Energy Liability Insurance Association or Mutual Atomic Energy Liability Underwriters, and if also the sum of the amount of financial protection established under this agreement and the amounts of financial protection established under all other applicable agreements exceeds an amount equal to the sum of $200,000,000 and the amount available as secondary financial protection, the obligations of the licensee shall not exceed a greater proportion of an amount equal to the sum of $200,000,000 and the amount available as secondary financial protection, than the amount of financial protection established under this agreement bears to the sum of such amount and the amounts of financial protection established under all other applicable agreements.

(d) As used in this paragraph 8., Article II, and in Article III, *other applicable agreements* means each other agreement entered into by the Commission pursuant to subsection 170(c) of the Act in which agreement the nuclear incident is defined as a *common occurrence*. As used in this paragraph 8., Article II, *the obligations of the licensee* means the obligations of the licensee under subsection 53e(8) of the Act to indemnify the United States and the Commission from public liability, together with any public liability satisfied by the insurers under the policy or policies designated in the Attachment, and the reasonable costs incurred by the insurers in investigating and settling claims and defending suits for damage.

9. The obligations of the licensee under this Article shall not be affected by any failure or default on the part of the Commission or the Government of the United States to fulfill any or all of its obligations under this agreement. Bankruptcy or insolvency of any person indemnified other than the licensee, or the estate of any person indemnified other than the licensee, shall not relieve the licensee of any of his obligations hereunder.

ARTICLE III

1. The Commission undertakes and agrees to indemnify and hold harmless the licensee and other persons indemnified, as their interest may appear from public liability.

2. With respect to damage caused by a nuclear incident to property of any person legally liable for the nuclear incident, the Commission agrees to pay to such person those sums which such person would have been obligated to pay if such property had belonged to another; provided, that the obligation of the Commission under this paragraph 2 does not apply with respect to:

(a) Property which is located at the location described in Item 4 of the Attachment or at the location described in Item 3 of the declarations attached to any nuclear energy liability insurance policy designated in Item 5 of the Attachment;

(b) Property damage due to the neglect of the person indemnified to use all reasonable means to save and preserve the property after knowledge of a nuclear incident;

(c) If the nuclear incident occurs in the course of transportation of the radioactive material, the transporting vehicle and containers used in such transportation;

(d) The radioactive material.

3. [Reserved]

4. (a) The obligations of the Commission under this agreement shall apply only with respect to such public liability and such damage to property of persons legally liable for the nuclear incident (other than such property described in the proviso to paragraph 2 of this Article) as in the aggregate exceed the amount of financial protection.

(b) With respect to a common occurrence, the obligations of the Commission under this agreement shall apply only with respect to such public liability and such damage to property of persons legally liable for the nuclear incident (other than such property described in the proviso to paragraph 2 of this Article) as in the aggregate exceed whichever of the following is lower: (1) The sum of the amounts of financial protection established under this agreement and all other applicable agreements; or (2) an amount equal to the sum of $200,000,000 and the amount available as secondary financial protection.

5. The obligations of the Commission under this agreement shall apply only with respect to nuclear incidents occurring during the term of this agreement.

6. The obligations of the Commission under this and all other agreements and contracts to which the Commission is a party shall not with respect to any nuclear incident, in the aggregate exceed whichever of the following is the lowest: (a) $500,000,000; (b) $560,000,000 less the amount of financial protection required under this agreement; or (c) with respect to a common occurrence, $560,000,000

less the sum of the amounts of financial protection established under this agreement and all other applicable agreements.

7. The obligations of the Commission under this agreement, except to the licensee for damage to property of the licensee, shall not be affected by any failure on the part of the licensee to fulfill its obligations under this agreement. Bankruptcy or insolvency of the licensee or any other person indemnified or of the estate of the licensee or any other person indemnified shall not relieve the Commission of any of its obligations hereunder.

ARTICLE IV

1. When the Commission determines that the United States will probably be required to make indemnity payments under the provisions of this agreement, the Commission shall have the right to collaborate with the licensee and other persons indemnified in the settlement and defense of any claim (provided that no government indemnity that would otherwise be available to pay public liability claims is used for these purposes) and shall have the right (a) to require the prior approval of the Commission for the settlement or payment of any claim or action asserted against the licensee or other person indemnified for public liability or damage to property of persons legally liable for the nuclear incident which claim or action the licensee or the Commission may be required to indemnify under this agreement; and (b) to appear through the Attorney General of the United States on behalf of the licensee or other person indemnified, take charge of such action and settle or defend any such action. If the settlement or defense of any such action or claim is undertaken by the Commission, the licensee shall furnish all reasonable assistance in effecting a settlement or asserting a defense.

2. Neither this agreement nor any interest therein nor claim thereunder may be assigned or transferred without the approval of the Commission.

ARTICLE V

The parties agree that they will enter into appropriate amendments of this agreement to the extent that such amendments are required pursuant to the Atomic Energy Act of 1954, as amended, or licenses, regulations or orders of the Commission.

ARTICLE VI

The licensee agrees to pay to the Commission such fees as are established by the Commission pursuant to regulations or orders of the Commission.

ARTICLE VII

The term of this agreement shall commence as of the date and time specified in Item 6 of the Attachment and shall terminate at the time of expiration of that license specified in Item 3 of the Attachment, which is the last to expire; provided that, except as may otherwise be provided in applicable regulations or orders of the Commission, the term of this agreement shall not terminate until all the radioactive material has been removed from the location and transportation of the radioactive material from the location has ended as defined in paragraph 5(b), Article I of this section. Termination of the term of this agreement shall not affect any obligation of the licensee or any obligation of the Commission under this agreement with respect to any nuclear incident occurring during the term of this agreement.

ARTICLE VIII

The following provisions are applicable to each licensee operating a facility designed for producing substantial amounts of electricity and having a rated capacity of 100,000 electrical kilowatts or more;

1. Each licensee is required to have and maintain financial protection in an amount specified in Item 2 a and b of the Attachment annexed hereto, and the amount available as secondary financial protection (in the form of private liability insurance available under an industry retrospective rating plan providing for deferred premium charges); Provided, however, That under such a plan for deferred premium charges, such charges for each nuclear reactor which is licensed to operate shall not exceed $63,000,000 with respect to any single nuclear incident (plus any surcharge assessed under subsection 170o.(1)(E) of the Act) nor exceed $10,000,000 per incident within one calendar year. If the licensee fails to pay assessed deferred premiums, the Commission reserves the right to pay those premiums on behalf of the licensee and to recover the amount of such premiums from the licensee.

2. The Commission shall require the immediate submission of financial statements by those licensees who indicate, after an assessment of the retrospective premium by the insurance pools, that they will not pay the assessment. Such financial statements shall include, as a minimum, exhibits indicating internally generated funds from operations and accumulated retained earnings. Subsequent submission of financial statements by such licensees may be requested by the Commission, as required.

3. If premiums are paid by the Commission as provided in paragraph 1, payment by the Commission shall create a lien in the amount paid in favor of the United States upon all property and rights to property, whether real or personal, belonging to such licensee. The lien shall arise at the time payment is made by the Commission and shall continue until the liability for the amount (or a judgment against the licensee arising out of such liability) is satisfied or becomes

unenforceable. The Commission will issue a certificate of release of any such lien if it finds that the liability for the amount has been fully satisfied or has become legally unenforceable.

4. If the Commission determines that the licensee is financially able to reimburse the Commission for a deferred premium payment made in its behalf, and the licensee, after notice of such determination by the Commission fails to make such reimbursement within 120 days, the Commission will take appropriate steps to suspend the license for 30 days. The Commission may take any further action as necessary if reimbursement is not made within the 30-day suspension period including, but not limited to termination of the operating license.

UNITED STATES NUCLEAR REGULATORY COMMISSION

Indemnity Agreement No. _____

Item 1—Licensee _____

Address _____

Item 2—a. Amount of financial protection __

b. With respect to any nuclear incident, the amount specified in Item 2a of this Attachment shall be deemed to be (i) reduced to the extent that any payment made by the insurer or insurers under a policy or policies specified in Item 5 of this Attachment reduces the aggregate amount of such insurance policies below the amount specified in Item 2a and (ii) restored to the extent that, following such reduction, the aggregate amount of such insurance policies is reinstated.

Item 3—License number or numbers _____

Item 4—Location _____

Item 5—Insurance Policy No.(s) _____

Item 6—The indemnity agreement designated above, of which this Attachment is a part, is effective as of __ m., on the __ day of _____, 19____.

For the United States Nuclear Regulatory Commission.

By _____

For the _____

(Name of licensee)

By _____

Dated at Bethesda, MD, the _____ day of _____, 19____.

[26 FR 3457, Apr. 22, 1961]

EDITORIAL NOTE: For FEDERAL REGISTER citations affecting § 140.92, see the List of CFR Sections Affected, which appears in the Finding Aids section of the printed volume and at *www.govinfo.gov*.

§ 140.93 Appendix C—Form of indemnity agreement with licensees furnishing proof of financial protection in the form of licensee's resources.

This indemnity agreement No. _____ is entered into by and between the _____ (hereinafter referred to as the *licensee*) and the United States Nuclear Regulatory Commission (hereinafter referred to as the *Commission* pursuant to subsection 170(c) of the Atomic Energy Act of 1954, as amended (hereinafter referred to as *the Act*).

ARTICLE I

As used in this agreement,

1. *Nuclear reactor, byproduct material, person, source material, special nuclear material,* and *precautionary evacuation* shall have the meanings given them in the Atomic Energy Act of 1954, as amended, and the regulations issued by the Commission.

2.(a) For facilities designed for producing substantial amounts of electricity and having a rated capacity of 100,000 electrical kilowatts or more, and except where otherwise specifically provided, *amount of financial protection* means the amount specified in Item 2 of the Attachment annexed hereto, as modified by paragraph 8, Article II, with respect to common occurrences, and the amount available as secondary financial protection (in the form of private liability insurance available under an industry retrospective rating plan providing for deferred retrospective premium charges).

(b) For all other facilities, and except where otherwise specifically provided, *amount of financial protection* means the amount specified in Item 2 of the Attachment annexed hereto, as modified by paragraph 8, Article II, with respect to common occurrences.

3. (a) *Nuclear incident* means any occurrence including an extraordinary nuclear occurrence or series of occurrences at the location or in the course of transportation causing bodily injury, sickness, disease, or death, or loss of or damage to property, or loss of use of property, arising out of or resulting from the radioactive, toxic, explosive, or other hazardous properties of the radioactive material.

(b) Any occurrence including an extraordinary nuclear occurrence or series of occurrences causing bodily injury, sickness, disease or death, or loss of or damage to property, or loss of use of property, arising out of or resulting from the radioactive, toxic, explosive or other hazardous properties of—

i. The radioactive material discharged or dispersed from the location over a period of days, weeks, months or longer and also arising out of such properties of other material defined as *the radioactive material* in any other agreement or agreements entered into

by the Commission under subsection 170(c) or (k) of the Act and so discharged or dispersed from *the location* as defined in any such other agreement; or

ii. The radioactive material in the course of transportation and also arising out of such properties of other material defined in any other agreement entered into by the Commission pursuant to subsection 170(c) or (k) of the Act as *the radioactive material* and which is in the course of transportation shall be deemed to be a common occurrence. A common occurrence shall be deemed to constitute a single nuclear incident.

4. *Extraordinary nuclear occurrence* means an event which the Commission has determined to be an extraordinary nuclear occurrence as defined in the Atomic Energy Act of 1954, as amended.

5. *In the course of transportation* means in the course of transportation within the United States, or in the course of transportation outside the United States and any other nation, and moving from one person licensed by the Commission to another person licensed by the Commission, including handling or temporary storage incidental thereto, of the radioactive material to the location or from the location provided that:

(a) With respect to transportation of the radioactive material to the location, such transportation is not by pre-determination to be interrupted by the removal of the material from the transporting conveyance for any purpose other than the continuation of such transportation to the location or temporary storage incidental thereto;

(b) The transportation of the radioactive material from the location shall be deemed to end when the radioactive material is removed from the transporting conveyance for any purpose other than the continuation of transportation or temporary storage incidental thereto;

(c) *In the course of transportation* as used in this agreement shall not include transportation of the radioactive material to the location if the material is also *in the course of transportation* from any other *location* as defined in any other agreement entered into by the Commission pursuant to subsection 170(c) or (k) of the Act.

6. *Person indemnified* means the licensee and any other person who may be liable for public liability.

7. *Public liability* means any legal liability arising out of or resulting from a nuclear incident or precautionary evacuation (including all reasonable additional costs incurred by a State, or a political sudivision of a State, in the course of responding to a nuclear incident or precautionary evacuation), except (1) claims under State or Federal Workmen's Compensation Acts of employees of persons indemnified who are employed (a) at the location or, if the nuclear incident occurs in the course of transportation of the radioactive material, on the transporting vehicle, and (b) in connection with the licensee's possession, use, or transfer of the radioactive material; (2) claims arising out of an act of war; and (3) claims for loss of, or damage to, or loss of use of (a) property which is located at the location and used in connection with the licensee's possession, use or transfer of the radioactive material, and (b), if the nuclear incident occurs in the course of transportation of the radioactive material, the transporting vehicle, containers used in such transportation, and the radioactive material.

8. *The location* means the location described in Item 4 of the Attachment hereto.

9. *The radioactive material* means source, special nuclear, and byproduct material which (1) is used or to be used in, or is irradiated or to be irradiated by, the nuclear reactor or reactors subject to the license or licenses designated in the Attachment hereto, or (2) which is produced as the result of operation of said reactor(s).

10. *United States* when used in a geographical sense includes Puerto Rico and all territories and possessions of the United States.

ARTICLE II

1. The licensee undertakes and agrees to indemnify and hold harmless all persons indemnified, as their interest may appear, from public liability.

2. With respect to damage caused by a nuclear incident to property of any person legally liable for the incident, the licensee agrees to pay to such person those sums which such person would have been obligated to pay if such property had belonged to another, provided, that the obligation of the licensee under this paragraph 2 does not apply with respect to:

(a) Property which is located at the location and used in connection with the licensee's possession, use or transfer of the radioactive material;

(b) Property damage due to neglect of the person indemnified to use all reasonable means to save and preserve the property after knowledge of a nuclear incident;

(c) If the nuclear incident occurs in the course of transportation of the radioactive material, the transporting vehicle and containers used in such transportation; and

(d) The radioactive material.

3. Any obligations of the licensee under paragraphs 1 and 2 of this Article, and under subsection 53e(8) of the Act to indemnify the United States and the Commission from public liability shall not in the aggregate exceed the amount of financial protection with respect to any nuclear incident, including the reasonable costs of investigating and settling claims and defending suits for damage.

4. With respect to any extraordinary nuclear occurrence to which this agreement applies, the Commission, and the licensee on behalf of itself and other persons indemnified, insofar as their interests appear, each agree to waive:

(a) Any issue or defense as to the conduct of the claimant or fault of persons indemnified, including, but not limited to:

(1) Negligence;

(2) Contributory negligence;

(3) Assumption of the risk;

(4) Unforeseeable intervening causes, whether involving the conduct of a third person or an act of God.

As used herein, *conduct of the claimant* includes conduct of persons through whom the claimant derives his cause of action;

(b) Any issue or defense as to charitable or governmental immunity;

(c) Any issue or defense based on any statute of limitations if suit is instituted within 3 years from the date on which the claimant first knew, or reasonably could have known, of his injury or damage and the cause thereof.

The waiver of any such issue or defense shall be effective regardless of whether such issue or defense may otherwise be deemed jurisdictional or relating to an element in the cause of action. The waivers shall be judicially enforceable in accordance with their terms by the claimant against the person indemnified.

5. The waivers set forth in paragraph 4, of this article:

(a) Shall not preclude a defense based upon a failure to take reasonable steps to mitigate damages;

(b) Shall not apply to injury or damage to a claimant or to a claimant's property which is intentionally sustained by the claimant or which results from a nuclear incident intentionally and wrongfully caused by the claimant;

(c) Shall not apply to injury to a claimant who is employed at the site of and in connection with the activity where the extraordinary nuclear occurrence takes place if benefits therefor are either payable or required to be provided under any workmen's compensation or occupational disease law: *Provided, however,* That with respect to an extraordinary nuclear occurrence occurring at the facility, a claimant who is employed at the facility in connection with the construction of a nuclear reactor with respect to which no operating license has been issued by the Nuclear Regulatory Commission shall not be considered as employed in connection with the activity where the extraordinary nuclear occurrence takes place if:

(1) The claimant is employed exclusively in connection with the construction of a nuclear reactor, including all related equipment and installations at the facility, and

(2) No operating license has been issued by the NRC with respect to the nuclear reactor, and

(3) The claimant is not employed in connection with the possession, storage, use or transfer of nuclear material at the facility;

(d) Shall not apply to any claim for punitive or exemplary damages, provided, with respect to any claim for wrongful death under any State law which provides for damages only punitive in nature, this exclusion does not apply to the extent that the claimant has sustained actual damages, measured by the pecuniary injuries resulting from such death but not to exceed the maximum amount otherwise recoverable under such law;

(e) Shall be effective only with respect to those obligations set forth in this agreement and in contracts or other proof of financial protection;

(f) Shall not apply to, or prejudice the prosecution or defense of, any claim or portion of claim which is not within the protection afforded under (1) the limit of liability provisions under subsection 170(e), of the Atomic Energy Act of 1954, as amended, and (2) the terms of this agreement and the terms of contracts or other proof of financial protection.

6. The obligations of the licensee under this agreement shall apply only with respect to nuclear incidents occurring during the term of this agreement.

7. Upon the expiration or revocation of any license designated in Item 3 of the Attachment, the Commission will enter into an appropriate amendment of this agreement with the licensee reducing the amount of financial protection required under this Article; provided, that the licensee is then entitled to a reduction in the amount of financial protection under applicable Commission regulations and orders.

8. With respect to a common occurrence, if the sum of the amount of financial protection established under this agreement and the amount of financial protection established under all other applicable agreements exceeds an amount equal to the sum of $200,000,000 and the amount available as secondary financial protection, the obligations of the licensee described in paragraph 3 of this Article shall not exceed a greater proportion of an amount equal to the sum of $200,000,000 and the amount available as secondary financial protection than the amount of financial protection established under this agreement bears to the sum of such amount and the amounts of financial protection established under all other applicable agreements. As used in this paragraph, and in Article III, *other applicable agreements* means each other agreement entered into by the Commission pursuant to subsection 170(c) or

(k) of the Act in which agreement the nuclear incident is defined as a *common occurrence*.

9. The obligations of the licensee under this Article shall not be affected by any failure or default on the part of the Commission or the Government of the United States to fulfill any or all of its obligations under this agreement. Bankruptcy or insolvency of any person indemnified other than the licensee, or the estate of any person indemnified other than the licensee, shall not relieve the licensee of any of his obligations hereunder.

ARTICLE III

1. The Commission undertakes and agrees to indemnify and hold harmless the licensee and other persons indemnified, as their interest may appear, from public liability.

2. With respect to damage caused by a nuclear incident to property of any person legally liable for the nuclear incident, the Commission agrees to pay to such person those sums which such person would have been obligated to pay if such property had belonged to another; provided, that the obligation of the Commission under this paragraph 2 does not apply with respect to:

(a) Property which is located at the location and used in connection with the licensee's possession, use or transfer of the radioactive material;

(b) Property damage due to the neglect of the person indemnified to use all reasonable means to save and preserve the property after knowledge of a nuclear incident;

(c) If the nuclear incident occurs in the course of transportation of the radioactive material, the transporting vehicle and containers used in such transportation;

(d) The radioactive material.

3. [Reserved]

4. (a) The obligations of the Commission under this agreement shall apply only with respect to such public liability and such damage to property of persons legally liable for the nuclear incident (other than such property described in the proviso to paragraph 2 of this Article) as in the aggregate exceed the amount of financial protection.

(b) With respect to a common occurrence, the obligations of the Commission under this agreement shall apply only with respect to such public liability and such damage to property of persons legally liable for the nuclear incident (other than such property described in the proviso to Paragraph 2 of this Article) as in the aggregate exceed whichever of the following is lower: (1) The sum of the amount of financial protection established under this agreement and to all other applicable agreements; or (2) an amount equal to the sum of $200,000,000 and the amount available as secondary financial protection.

5. The obligations of the Commission under this agreement shall apply only with respect to nuclear incidents occurring during the term of this agreement.

6. The obligations of the Commission under this and all other agreements and contracts to which the Commission is a party shall not with respect to any nuclear incident, in the aggregate exceed whichever of the following is the lowest: (a) $500,000,000; (b) $560,000,000 less the amount of financial protection required under this agreement; or (c) with respect to a common occurrence, $560,000,000 less the sum of the amounts of financial protection established under this agreement and all other applicable agreements.

7. The obligations of the Commission under this agreement, except to the licensee for damage to property of the licensee, shall not be affected by any failure on the part of the licensee to fulfill its obligations under this agreement. Bankruptcy or insolvency of the licensee or any other person indemnified shall not relieve the Commission of any of its obligations hereunder.

ARTICLE IV

1. When the Commission determines that the United States will probably be required to make indemnity payments under the provisions of this agreement, the Commission shall have the right to collaborate with the licensee and other persons indemnified in the settlement and defense of any claim (provided that no government indemnity that would otherwise be available to pay public liability claims is used for these purposes) and shall have the right (a) to require the prior approval of the Commission for the settlement or payment of any claim or action asserted against the licensee or other person indemnified for public liability or damage to property of persons legally liable for the nuclear incident which claim or action the licensee or the Commission may be required to indemnify under this agreement; and (b) to appear through the Attorney General of the United States on behalf of the licensee or other person indemnified, take charge of such action and settle or defend any such action. If the settlement or defense of any such action or claim is undertaken by the Commission, the licensee shall furnish all reasonable assistance in effecting a settlement or asserting a defense.

2. Neither this agreement nor any interest therein nor claim thereunder may be assigned or transferred without the approval of the Commission.

ARTICLE V

The parties agree that they will enter into appropriate amendments of this agreement to the extent that such amendments are required pursuant to the Atomic Energy Act of 1954, as amended, or licenses, regulations or orders of the Commission.

ARTICLE VI

The licensee agrees to pay to the Commission such fees as are established by the Commission pursuant to regulations or orders of the Commission.

ARTICLE VII

The term of this agreement shall commence as of the date and time specified in Item 6 of the attachment and shall terminate at the time of expiration of that license specified in Item 3 of the attachment, which is last to expire; provided that, except as may otherwise be provided in applicable regulations or orders of the Commission, the term of this agreement shall not terminate until all the radioactive material has been removed from the location and transportation of the radioactive material from the location has ended as defined in subparagraph 5(b), Article I. Termination of the term of this agreement shall not affect any obligation of the licensee or any obligation of the Commission under this agreement with respect to any nuclear incident occurring during the term of this agreement.

ARTICLE VIII

The following provisions are applicable to each licensee operating a facility designed for producing substantial amounts of electricity and having a rated capacity of 100,000 electrical kilowatts or more:

1. Each licensee is required to have and maintain financial protection in an amount specified in Item 2 annexed hereto, and the amount available as secondary financial protection (in the form of private liability insurance available under an industry retrospective rating plan providing for deferred premium charges): Provided, however, That under such a plan for deferred premium charges, such charges for each nuclear reactor which is licensed to operate shall not exceed $63,000,000 with respect to any single nuclear incident (plus any surcharge assessed under subsection 170o.(1)(E) of the Act) nor exceed $10,000,000 per incident within one calendar year. If the licensee fails to pay assessed deferred premiums, the Commission reserves the right to pay those premiums on behalf of the licensee and to recover the amount of such premiums from the licensee.

2. The Commission shall require the immediate submission of financial statements by those licensees who indicate, after an assessment of the restrospective premium by the insurance pools, that they will not pay the assessment. Such financial statements shall include, as a minimum, exhibits indicating internally generated funds from operations and accumulated retained earnings. Subsequent submission of financial statements by such licensees may be requested by the Commission, as required.

3. If premiums are paid by the Commission as provided in paragraph 1, payment by the Commission shall create a lien in the amount paid in favor of the United States upon all property and rights to property, whether real or personal, belonging to such licensee. The lien shall arise at the time payment is made by the Commission and shall continue until the liability for the amount (or a judgment against the licensee arising out of such liability) is satisfied or becomes unenforceable. The Commission will issue a certificate of release of any such lien if it finds that the liability for the amount has been fully satisfied or has become legally unenforceable.

4. If the Commission determines that the licensee is financially able to reimburse the Commission for a deferred premium payment made in its behalf, and the licensee, after notice of such determination by the Commission fails to make such reimbursement within 120 days, the Commission will take appropriate steps to suspend the license for 30 days. The Commission may take any further action as necessary if reimbursement is not made within the 30-day suspension period including, but not limited to, termination of the operating license or combined license.

UNITED STATES NUCLEAR REGULATORY COMMISSION

Indemnity Agreement No. _____

Attachment

Item 1—Licensee _____
Address _____
Item 2—Amount of financial protection ____
Item 3—License number or numbers _____
Item 4—Location _____

Item 5—The Indemnity Agreement designated above, of which this Attachment is a part, is effective as of _____M., on the _____ day of _____, 19____.

For the United States Nuclear Regulatory Commission.

By _____
For the _____
(Name of licensee)
By _____

Dated at Bethesda, MD, the _____ day of _____, 19____.

[26 FR 3459, Apr. 22, 1961]

EDITORIAL NOTE: For FEDERAL REGISTER citations affecting § 140.93, see the List of CFR Sections Affected, which appears in the Finding Aids section of the printed volume and at *www.govinfo.gov*.

§ 140.94 Appendix D—Form of indemnity agreement with Federal agencies.

This indemnity agreement No. D_____ is entered into by and between the _____ (hereinafter referred to as the *licensee*) and the United States Nuclear Regulatory Commission (hereinafter referred to as the *Commission*) pursuant to subsection 170(c) of the Atomic Energy Act of 1954, as amended (hereinafter referred to as *the Act*).

ARTICLE I

As used in this agreement,

1. *Nuclear reactor, byproduct material, person, source material, special nuclear material,* and *precautionary evacuation* shall have the meanings given them in the Atomic Energy Act of 1954, as amended, and the regulations issued by the Commission.

2. (a) *Nuclear incident* means any occurrence including an extraordinary nuclear occurrence or series of occurrences at the location or in the course of transportation causing bodily injury, sickness, disease, or death, or loss of or damage to property, or loss of use of property, arising out of or resulting from the radioactive, toxic, explosive, or other hazardous properties of the radioactive material.

(b) Any occurrence including an extraordinary nuclear occurrence or series of occurrences causing bodily injury, sickness, disease, or death, or loss of or damage to property, or loss of use of property, arising out of or resulting from the radioactive, toxic, explosive or other hazardous properties of

(i) The radioactive material discharged or dispersed from the location over a period of days, weeks, months or longer and also arising out of such properties of other material defined as *the radioactive material* in any other agreement or agreements entered into by the Commission under subsection 170(c) or (k) of the Act and so discharged or dispersed from *the location* as defined in any such other agreement, or

(ii) The radioactive material in the course of transportation and also arising out of such properties of other material defined in any other agreement entered into by the Commission pursuant to subsection 170(c) or (k) of the Act as *the radioactive material* and which is in the course of transportation shall be deemed to be a common occurrence. A common occurrence shall be deemed to constitute a single nuclear incident.

3. *Extraordinary nuclear occurrence* means an event which the Commission has determined to be an extraordinary nuclear occurrence as defined in the Atomic Energy Act of 1954, as amended.

4. *In the course of transportation* means in the course of transportation within the United States, or in the course of transportation outside the United States and any other nation, and moving from one person licensed by the Commission to another person licensed by the Commission, including handling or temporary storage incidental thereto, of the radioactive material to the location or from the location provided that:

(a) With respect to transportation of the radioactive material to the location, such transportation is not by predetermination to be interrupted by the removal of the material from the transporting conveyance for any purpose other than the continuation of such transportation to the location or temporary storage incidental thereto;

(b) The transportation of the radioactive material from the location shall be deemed to end when the radioactive material is removed from the transporting conveyance for any purpose other than the continuation of transportation or temporary storage incidental thereto;

(c) *In the course of transportation* as used in this agreement shall not include transportation of the radioactive material to the location if the material is also *in the course of transportation* from any other *location* as defined in any other agreement entered into by the Commission pursuant to subsection 170(c) or (k) of the Act.

5. *Person indemnified* means the licensee and any other person who may be liable for public liability.

6. *Public liability* means any legal liability arising out of or resulting from a nuclear incident or precautionary evacuation (including all reasonable additional costs incurred by a State, or a political subdivision of a State, in the course of responding to a nuclear incident or precautionary evacuation), except (1) claims under State of Federal Workmen's Compensation Acts of employees of persons indemnified who are employed (a) at the location or, if the nuclear incident occurs in the course of transportation of the radioactive material, on the transporting vehicle, and (b) in connection with the licensee's possession, use, or transfer of the radioactive material; (2) claims arising out of an act of war; and (3) claims for loss of, or damage to, or loss of use of (a) property which is located at the location and used in connection with the licensee's possession, use, or transfer of the radioactive material, and (b) if the nuclear incident occurs in the course of transportation of the radioactive material, the transporting vehicle, containers used in such transportation, and the radioactive material.

7. *The location* means the location described in Item 3 of the Attachment hereto.

8. *The radioactive material* means source, special nuclear, and byproduct material which (1) is used or to be used in, or is irradiated or to be irradiated by, the nuclear reactor or reactors subject to the license or licenses designated in the Attachment hereto,

or (2) is produced as the result of operation of said reactor(s).

9. *United States* when used in a geographical sense includes Puerto Rico and all territories and possessions of the United States.

ARTICLE II

1. The Commission undertakes and agrees to indemnify and hold harmless the licensee and other persons indemnified, as their interest may appear, from public liability.

2. With respect to damage caused by a nuclear incident to property of any person legally liable for the nuclear incident, the Commission agrees to pay to such person those sums which such person would have been obligated to pay if such property had belonged to another; provided, that the obligation of the Commission under this paragraph 2 does not apply with respect to:

(a) Property which is located at the location and used in connection with the licensee's possession, use or transfer of the radioactive material;

(b) Property damage due to the neglect of the person indemnified to use all reasonable means to save and preserve the property after knowledge of a nuclear incident;

(c) If the nuclear incident occurs in the course of transportation of the radioactive material, the transporting vehicle and containers used in such transportation;

(d) The radioactive material.

3. [Reserved]

4. With respect to any extraordinary nuclear occurrence to which this agreement applies, the Commission, and the licensee on behalf of itself and other persons indemnified, insofar as their interests appear, each agree to waive:

(a) Any issue or defense as to the conduct of the claimant or fault of persons indemnified, including, but not limited to:

(1) Negligence;

(2) Contributory negligence;

(3) Assumption of the risk;

(4) Unforeseeable intervening causes, whether involving the conduct of a third person or an act of God.

As used herein, *conduct of the claimant* includes conduct of persons through whom the claimant derives his cause of action;

(b) Any issue or defense as to charitable or governmental immunity;

(c) Any issue or defense based on any statute of limitations if suit is instituted within 3 years from the date on which the claimant first knew, or reasonably could have known, of his injury or damage and the cause thereof.

The waiver of any such issue or defense shall be effective regardless of whether such issue or defense may otherwise be deemed jurisdictional or relating to an element in the cause of action. The waivers shall be judicially enforceable in accordance with their terms by the claimant against the person indemnified.

5. The waivers set forth in paragraph 4 of this article:

(a) Shall not preclude a defense based upon a failure to take reasonable steps to mitigate damages;

(b) Shall not apply to injury or damage to a claimant or to a claimant's property which is intentionally sustained by the claimant or which results from a nuclear incident intentionally and wrongfully caused by the claimant;

(c) Shall not apply to injury to a claimant who is employed at the site of and in connection with the activity where the extraordinary nuclear occurrence takes place if benefits therefor are either payable or required to be provided under any workmen's compensation or occupational disease law: *Provided, however*, That with respect to an extraordinary nuclear occurrence occurring at the facility, a claimant who is employed at the facility in connection with the construction of a nuclear reactor with respect to which no operating license has been issued by the Nuclear Regulatory Commission shall not be considered as employed in connection with the activity where the extraordinary nuclear occurrence takes place if:

(1) The claimant is employed exclusively in connection with the construction of a nuclear reactor, including all related equipment and installations at the facility, and

(2) No operating license has been issued by the NRC with respect to the nuclear reactor, and

(3) The claimant is not employed in connection with the possession, storage, use or transfer of nuclear material at the facility;

(d) Shall not apply to any claim for punitive or exemplary damages, provided, with respect to any claim for wrongful death under any State law which provides for damages only punitive in nature, this exclusion does not apply to the extent that the claimant has sustained actual damages, measured by the pecuniary injuries resulting from such death but not to exceed the maximum amount otherwise recoverable under such law;

(e) Shall be effective only with respect to those obligations set forth in this agreement;

(f) Shall not apply to, or prejudice the prosecution or defense of, any claim or portion of claim which is not within the protection afforded under (1) the limit of liability provisions under subsection 170(e), of the Atomic Energy Act of 1954, as amended, and (2) the terms of this agreement.

6. With respect to a common occurrence, the obligations of the Commission under this Article shall apply only with respect to such public liability and such damage to property of persons legally liable for the nuclear incident (other than such property described in

the proviso to paragraph 2 of this Article) as in the aggregate exceed whichever of the following is lower: (1) The sum of the amount of financial protection established under all applicable agreements; or (2) an amount equal to the sum of $200,000,000 and the amount available as secondary financial protection. As used in this Article *applicable agreements* means each agreement entered into by the Commission pursuant to subsection 170(c) or (k) of the Act in which agreement the nuclear incident is defined as *common occurrence*.

7. The obligations of the Commission under this agreement shall apply only with respect to nuclear incidents occurring during the term of this agreement.

8. The obligations of the Commission under this and all other agreements and contracts to which the Commission is a party shall not with respect to any nuclear incident, in the aggregate exceed whichever of the following is the lower: (a) $500,000,000 or (b) with respect to a common occurrence, $560,000,000 less the sum of the amounts of financial protection established under all applicable agreements.

9. Bankruptcy or insolvency of any person indemnified or of the estate of any person indemnified shall not relieve the Commission of any of its obligations hereunder.

ARTICLE III

1. When the Commission determines that the United States will probably be required to make indemnity payments under the provisions of this agreement, the Commission shall have the right to collaborate with the licensee and other persons indemnified in the settlement and defense of any claim (provided that no government indemnity that would otherwise be available to pay public liability claims is used for these purposes) and shall have the right (a) to require the prior approval of the Commission for the settlement or payment of any claim or action asserted against the licensee or other persons indemnified for public liability or damage to property of persons legally liable for the nuclear incident which claim or action the licensee or the Commission may be required to indemnify under this agreement; and (b) to appear through the Attorney General of the United States on behalf of the licensee or other person indemnified, take charge of such action and settle or defend any such action. If the settlement or defense of any such action or claim is undertaken by the Commission, the licensee shall furnish all reasonable assistance in effecting a settlement or asserting a defense.

2. Neither this agreement nor any interest therein nor claim thereunder may be assigned or transferred without the approval of the Commission.

ARTICLE IV

The parties agree that they will enter into appropriate amendments of this agreement to the extent that such amendments are required pursuant to the Atomic Energy Act of 1954, as amended, or licenses, regulations or orders of the Commission.

ARTICLE V

The licensee agrees to pay to the Commission such fees as are established by the Commission pursuant to regulations or orders of the Commission.

ARTICLE VI

The term of this agreement shall commence as of the date and time specified in Item 4 of the attachment and shall terminate at the time of expiration of that license specified in Item 2 of the Attachment, which is the last to expire; provided that, except as may otherwise be provided in applicable regulations or orders of the Commission, the term of this agreement shall not terminate until all the radioactive material has been removed from the location and transportation of the radioactive material from the location has ended as defined in paragraph 4(b), Article I of this section. Termination of the term of this agreement shall not affect any obligation of the licensee or any obligation of the Commission under this agreement with respect to any nuclear incident occurring during the term of this agreement.

UNITED STATES NUCLEAR REGULATORY COMMISSION

Indemnity Agreement No. D–_____

ATTACHMENT

Item 1—Licensee _____
Address _____
Item 2—License number or numbers _____
Item 3—Location _____

Item 4—The indemnity agreement designated above, of which this Attachment is a part, is effective as of _____ m., on the _____ day of _____, 19____.

For the United States Nuclear Regulatory Commission.

By _____
For the _____
(Name of licensee)
By _____

Dated at Bethesda, MD, the _____ day of _____, 19____.

[27 FR 2886, Mar. 29, 1962]

EDITORIAL NOTE: For FEDERAL REGISTER citations affecting § 140.94, see the List of CFR Sections Affected, which appears in the Finding Aids section of the printed volume and at *www.govinfo.gov*.

§ 140.95 Appendix E—Form of indemnity agreement with nonprofit educational institutions.

This indemnity agreement No. E–_____ is entered into by and between the _____ (hereinafter referred to as the *licensee*) and the United States Nuclear Regulatory Commission (hereinafter referred to as the *Commission*) pursuant to subsection 170(k) of the Atomic Energy Act of 1954, as amended (hereinafter referred to as *the Act*).

ARTICLE I

As used in this agreement,

1. *Nuclear reactor, byproduct material, person, source material, special nuclear material,* and *precautionary evacuation* shall have the meanings given them in the Atomic Energy Act of 1954, as amended, and the regulations issued by the Commission.

2. (a) *Nuclear incident* means any occurrence including an extraordinary nuclear occurrence or series of occurrences at the location or in the course of transportation causing bodily injury, sickness, disease, or death, or loss of use of property, arising out of or resulting from the radioactive, toxic, explosive, or other hazardous properties of the radioactive material.

(b) Any occurrence including an extraordinary nuclear occurrence or series of occurrences causing bodily injury, sickness, disease or death, or loss of or damage to property, or loss of use of property, arising out of or resulting from the radioactive, toxic, explosive, or other hazardous properties of

i. The radioactive material discharged or dispersed from the location over a period of days, weeks, months or longer and also arising out of such properties of other material defined as *the radioactive material* in any other agreement or agreements entered into by the Commission under subsection 170(c) or (k) of the Act and so discharged or dispersed from *the location* as defined in any such other agreement; or

ii. The radioactive material in the course of transportation and also arising out of such properties of other material defined in any other agreement entered into by the Commission pursuant to subsection 170(c) or (k) of the Act as *the radioactive material* and which is in the course of transportation shall be deemed to be a common occurrence. A common occurrence shall be deemed to constitute a single nuclear incident.

3. *Extraordinary nuclear occurrence* means an event which the Commission has determined to be an extraordinary nuclear occurrence as defined in the Atomic Energy Act of 1954, as amended.

4. *In the course of transportation* means in the course of transportation within the United States, or in the course of transportation outside the United States and any other nation, and moving from one person licensed by the Commission to another person licensed by the Commission, including handling or temporary storage incidental thereto, of the radioactive material to the location or from the location provided that:

(a) With respect to transportation of the radioactive material to the location, such transportation is not by predetermination to be interrupted by the removal of the material from the transporting conveyance for any purpose other than the continuation of such transportation to the location or temporary storage incidental thereto;

(b) The transportation of the radioactive material from the location shall be deemed to end when the radioactive material is removed from the transporting conveyance for any purpose other than the continuation of transportation or temporary storage incidental thereto;

(c) *In the course of transportation* as used in this agreement shall not include transportation of the radioactive material to the location if the material is also *in the course of transportation* from any other *location* as defined in any other agreement entered into by the Commission pursuant to subsection 170(c) or (k) of the Act.

5. *Person indemnified* means the licensee and any other person who may be liable for public liability.

6. *Public liability* means are legal liability arising out of or resulting from a nuclear incident or precautionary evacuation (including all reasonable additional costs incurred by a State, or a political subdivision of a State, in the course of responding to a nuclear incident or precautionary evacuation), except (1) claims under State or Federal Workmen's Compensation Act of employees of persons indemnified who are employed (a) at the location or, if the nuclear incident occurs in the course of transportation of the radioactive material, or the transporting vehicle, and (b) in connection with the licensee's possession, use, or transfer of the radioactive material; (2) claims arising out of an act of war; and (3) claims for loss of, or damage to, or loss of use of (a) property which is located at the location and used in connection with the licensee's possession, use, or transfer of the radioactive material, and (b) if the nuclear incident occurs in the course of transportation of the radioactive material, the transporting vehicle, containers used in such transportation, and the radioactive material.

7. *The location* means the location described in Item 3 of the Attachment hereto.

8. *The radioactive material* means source, special nuclear, and byproduct material which (1) is used or to be used in, or is irradiated or to be irradiated by, the nuclear reactor or reactors subject to the license or licenses designated in the Attachment hereto, or (2) which is produced as the result of operation of said reactor(s).

9. *United States* when used in a geographical sense includes Puerto Rico and all territories and possessions of the United States.

ARTICLE II

1. Any obligations of the licensee under subsection 53e(8) of the Act to indemnify the United States and the Commission from public liability shall not in the aggregate exceed $250,000 with respect to any nuclear incident.

2. With respect to any extraordinary nuclear occurrence to which this agreement applies, the Commission, and the licensee on behalf of itself and other persons indemnified, insofar as their interests appear, each agree to waive:

(a) Any issue or defense as to the conduct of the claimant or fault of persons indemnified, including, but not limited to

(1) Negligence;

(2) Contributory negligence;

(3) Assumption of the risk;

(4) Unforeseeable intervening causes, whether involving the conduct of a third person or an act of God.

As used herein, *conduct of the claimant* includes conduct of persons through whom the claimant derives his cause of action;

(b) Any issue or defense as to charitable or governmental immunity:

(c) Any issue or defense based on any statute of limitations if suit is instituted within 3 years from the date on which the claimant first knew, or reasonably could have known, of his injury or damage and the cause thereof.

The waiver of any such issue or defense shall be effective regardless of whether such issue or defense may otherwise be deemed jurisdictional or relating to an element in the cause of action. The waivers shall be judicially enforceable in accordance with their terms by the claimant against the person indemnified.

3. The waivers set forth in paragraph 2 of this article:

(a) Shall not preclude a defense based upon a failure to take reasonable steps to mitigate damages;

(b) Shall not apply to injury or damage to a claimant or to a claimant's property which is intentionally sustained by the claimant or which results from a nuclear incident intentionally and wrongfully caused by the claimant;

(c) Shall not apply to injury to a claimant who is employed at the site of and in connection with the activity where the extraordinary nuclear occurrence takes place if benefits therefor are either payable or required to be provided under any workmen's compensation or occupational disease law: *Provided, however,* That with respect to an extraordinary nuclear occurrence occurring at the facility, a claimant who is employed at the facility in connection with the construction of a nuclear reactor with respect to which no operating license has been issued by the Nuclear Regulatory Commission shall not be considered as employed in connection with the activity where the extraordinary nuclear occurrence takes place if:

(1) The claimant is employed exclusively in connection with the construction of a nuclear reactor, including all related equipment and installations at the facility, and

(2) No operating license has been issued by the NRC with respect to the nuclear reactor, and

(3) The claimant is not employed in connection with the possession, storage, use, or transfer of nuclear material at the facility;

(d) Shall not apply to any claim for punitive or exemplary damages, provided, with respect to any claim for wrongful death under any State law which provides for damages only punitive in nature, this exclusion does not apply to the extent that the claimant has sustained actual damages, measured by the pecuniary injuries resulting from such death but not to exceed the maximum amount otherwise recoverable under such law;

(e) Shall be effective only with respect to those obligations set forth in this agreement;

(f) Shall not apply to, or prejudice the prosecution or defense of, any claim or portion of claim which is not within the protection afforded under (1) the limit of liability provisions under subsection 170(e) of the Atomic Energy Act of 1954, as amended, and (b) the terms of this agreement.

ARTICLE III

1. The Commission undertakes and agrees to indemnify and hold harmless the licensee and other persons indemnified, as their interest may appear, from public liability.

2. With respect to damage caused by a nuclear incident to property of any person legally liable for the nuclear incident, the Commission agrees to pay to such person those sums which such person would have been obligated to pay if such property had belonged to another; provided, that the obligation of the Commission under this paragraph 2 does not apply with respect to:

(a) Property which is located at the location and used in connection with the licensee's possession, use or transfer of the radioactive material;

(b) Property damage due to the neglect of the person indemnified to use all reasonable means to save and preserve the property after knowledge of a nuclear incident;

(c) If the nuclear incident occurs in the course of transportation of the radioactive material, the transporting vehicle and containers used in such transportation;

(d) The radioactive material.

3. [Reserved]

4. (a) The obligations of the Commission under this agreement shall apply only with respect to such public liability and such damage to property of persons legally liable for the nuclear incident (other than such property described in the proviso to paragraph 2 of this Article) as in the aggregate exceed $250,000.

(b) With respect to a common occurrence, the obligations of the Commission under this agreement shall apply only with respect to such public liability and such damage to property of persons legally liable for the nuclear incident (other than such property described in the proviso to paragraph 2 of this Article) as in the aggregate exceed whichever of the following is lower: (1) The sum of the amounts of financial protection established under all applicable agreements; or (2) an amount equal to the sum of $200,000,000 and the amount available as secondary financial protection. As used in this Article *applicable agreements* means each agreement entered into by the Commission pursuant to subsection 170(c) or (k) of the Act in which agreement the nuclear incident is defined as a *common occurrence*.

5. The obligations of the Commission under this agreement shall apply only with respect to nuclear incidents occurring during the term of this agreement.

6. The obligations of the Commission under this and all other agreements and contracts to which the Commission is a party shall not with respect to any nuclear incident, in the aggregate exceed which ever of the following is the lower: (a) $500,000,000 or (b) with respect to a common occurrence, $560,000,000 less the sum of the amounts of financial protection established under all applicable agreements.

7. If the licensee is immune from public liability because it is a state agency, the Commission shall make payments under the agreement in the same manner and to the same extent as the Commission would be required to do if the licensee were not such a state agency.

8. The obligations of the Commission under this agreement, except to the licensee for damage to property of the licensee, shall not be affected by any failure on the part of the licensee to fulfill its obligations under this agreement. Bankruptcy or insolvency of the licensee or any other person indemnified or of the estate of the licensee or any other person indemnified shall not relieve the Commission of any of its obligations hereunder.

ARTICLE IV

1. When the Commission determines that the United States will probably be required to make indemnity payments under the provisions of this agreement, the Commission shall have the right to collaborate with the licensee and other persons indemnified in the settlement and defense of any claim including such legal costs of the licensee as are approved by the Commission and shall have the right (a) to require the prior approval of the Commission for the settlement or payment of any claim or action asserted against the licensee or other person indemnified for public liability or damage to property of persons legally liable for the nuclear incident which claim or action the licensee or the Commission may be required to indemnify under this agreement; and (b) to appear through the Attorney General of the United States on behalf of the licensee or other person indemnified, take charge of such action or defend any such action. If the settlement or defense of any such action or claim is undertaken by the Commission, the licensee shall furnish all reasonable assistance in effecting a settlement or asserting a defense.

2. Neither this agreement nor any interest therein nor claim thereunder may be assigned or transferred without the approval of the Commission.

ARTICLE V

The parties agree that they will enter into appropriate amendments of this agreement to the extent that such amendments are required pursuant to the Atomic Energy Act of 1954, as amended, or licenses, regulations or orders of the Commission.

ARTICLE VI

The licensee agrees to pay to the Commission such fees as are established by the Commission pursuant to regulations or orders of the Commission.

ARTICLE VII

The term of this agreement shall commence as of the date and time specified in Item 4 of the Attachment and shall terminate at the time of expiration of that license specified in Item 2 of the Attachment, which is the last to expire; provided that, except as may otherwise be provided in applicable regulations or orders of the Commission, the term of this agreement shall not terminate until all the radioactive material has been removed from the location and transportation of the radioactive material from the location has ended as defined in subparagraph 4(b), Article I. Termination of the term of this agreement shall not affect any obligation of the licensee or any obligation of the Commission under this agreement with respect to any nuclear incident occurring during the term of this agreement.

UNITED STATES NUCLEAR REGULATORY COMMISSION

Indemnity Agreement No. E–____ __

ATTACHMENT

Item 1—Licensee _____ __
Address _____ _____

Item 2—License number or numbers _____ __
Item 3—Location _____ __

Item 4—The indemnity agreement designated above, of which this Attachment is a part, is effective as of _____ m., on the _____ day of _____, 19____.

For the United States Nuclear Regulatory Commission.

By _____
For the _____
By _____
(Name of licensee)

Dated at Bethesda, MD, the _____ day of _____, 19____.

[27 FR 2887, Mar. 29, 1962]

EDITORIAL NOTE: For FEDERAL REGISTER citations affecting § 140.95, see the List of CFR Sections Affected, which appears in the Finding Aids section of the printed volume and at *www.govinfo.gov*.

§ 140.96 Appendix F—Indemnity locations.

(a) *Geographical boundaries of indemnity locations.* (1) In every indemnity agreement between the Commission and a licensee which affords indemnity protection for the preoperational storage of fuel at the site of a nuclear power reactor under construction, the geographical boundaries of the indemnity location will include the entire construction area of the nuclear power reactor, as determined by the Commission. Such area will not necessarily be coextensive with the indemnity location which will be established at the time an operating license or combined license under 10 CFR part 52 is issued for such additional nuclear power reactors.

(2) In every indemnity agreement between the Commission and a licensee which affords indemnity protection for an existing nuclear power reactor, the geographical boundaries of the indemnity location shall include the entire construction area of any additional nuclear power reactor as determined by the Commission, built as part of the same power station by the same licensee. Such area will not necessarily be coextensive with the indemnity location which will be established at the time an operating license or combined license is issued for such additional nuclear power reactors.

(3) This section is effective May 1, 1973, as to construction permits issued before March 2, 1973, and, as to construction permits and combined licenses issued on or after March 2, 1973, the provisions of this section will apply no later than such time as a construction permit or combined license is issued authorizing construction of any additional nuclear power reactor.

(b) [Reserved]

[72 FR 49565, Aug. 28, 2007]

§ 140.107 Appendix G—Form of indemnity agreement with licensees processing plutonium for use in plutonium processing and fuel fabrication plants and furnishing insurance policies as proof of financial protection.

This Indemnity Agreement No. _____ is entered into by and between _____ (hereinafter referred to as the *licensee*) and the United States Nuclear Regulatory Commission (hereinafter referred to as the *Commission*) pursuant to subsection 170(c) of the Atomic Energy Act of 1954, as amended (hereinafter referred to as *the Act*), and section 201 of the Energy Reorganization Act of 1974, as amended.

ARTICLE I

As used in this agreement:

1. *By product material, person, source material, special nuclear material, precautionary evacuation,* and *extraordinary nuclear occurrence* shall have the meaning given them in the Atomic Energy Act of 1954, as amended, and the regulations issued by the Commission.

2. Except where otherwise specifically provided, *amount of financial protection* means the amount specified in Item 2a and b, of the Attachment annexed hereto as modified by paragraph 6, Article II, with respect to common occurrences.

3. (a) *Nuclear incident* means any occurrence including an extraordinary nuclear occurrence, or series of occurrences at the location or in the course of transportation causing bodily injury, sickness, disease, or death, or loss of or damage to property, or loss of use of property, arising out of or resulting from the radioactive, toxic, explosive, or other hazardous properties of the radioactive material.

(b) Any occurrence, including an extraordinary nuclear occurrence, or series of occurrences causing bodily injury, sickness, disease or death, or loss of or damage to property, or loss of use of property, arising out of or resulting from the radioactive, toxic, explosive, or other hazardous properties of:

(i) The radioactive material discharged or dispersed from the location over a period of days, weeks, months or longer and also arising out of such properties of other material defined as *the radioactive material* in any other agreement or agreements entered into by the Commission under subsection 170(c) or (k) of the Act and so discharged or dispersed from *the location* as defined in any such other agreement, or

(ii) The radioactive material in the course of transportation and also arising out of such properties of other material defined in

any other agreement entered into by the Commission pursuant to subsection 170(c) or (k) of the Act as *the radioactive material* and which is in the course of transportation shall be deemed to be a common occurrence. A common occurrence shall be deemed to constitute a single nuclear incident.

4. *In the course of transportation* means in the course of transportation within the United States, or in the course of transportation outside the United States and any other nation, and moving from one person licensed by the Commission to another person licensed by the Commission, including handling or temporary storage incidental thereto, of the radioactive material to the location or from the location provided that:

(a) With respect to transportation of the radioactive material to the location, such transportation is not by predetermination to be interrupted by the removal of the material from the transporting conveyance for any purpose other than the continuation of such transportation to the location or temporary storage incidental thereto;

(b) The transportation of the radioactive material from the location shall be deemed to end when the radioactive material is removed from the transporting conveyance for any purpose other than the continuation of transportation or temporary storage incidental thereto;

(c) *In the course of transportation* as used in this agreement shall not include transportation of the radioactive material to the location if the material is also *in the course of transportation* from any other *location* as defined in any other agreement entered into by the Commission pursuant to subsection 170(c) or (k) of the Act.

5. *Person indemnified* means the licensee and any other person who may be liable for public liability.

6. *Public liability* means any legal liability arising out of or resulting from a nuclear incident or precautionary evacuation (including all reasonable additional costs incurred by a State, or a political subdivision of a State, in the course of responding to a nuclear incident or precautionary evacuation), except (1) claims under State or Federal Workmen's Compensation Acts of employees of persons indemnified who are employed (a) at the location or, if the nuclear incident occurs in the course of transportation of the radioactive material, on the transporting vehicle, and (b) in connection with the licensee's possession, use or transfer of the radioactive material; (2) claims arising out of an act of war; and (3) claims for loss of or damage to, or loss of use of (a) property which is located at the location and used in connection with the licensee's possession, use, or transfer of the radioactive material, and (b) if the nuclear incident occurs in the course of transportation of the radioactive material, the transporting vehicle, containers used in such transportation, and the radioactive material.

7. *The location* means the location described in Item 4 of the Attachment hereto.

8. *The radioactive material* means (a) any source, special nuclear, or byproduct material which (1) is both used or to be used in, or is processed or to be processed by, the licensee's plutonium processing and fuel fabrication plant or plants and is subject to the license or licenses designated in the Attachment hereto, or (2) is produces as the result of the operation of said plant or plants or (b) any source, special nuclear, or byproduct material which is waste or contamination from material described in paragraph 8(a). The words *used or to be used* and *processed or to be processed* in this paragraph cover source, special nuclear or byproduct material which is *in the course of transportation* as used in the agreement or is received at the plant for use or processing in the plant but which is, in fact, for any reason, not so used or processed.

9. *United States* when used in a geographical sense includes Puerto Rico and all territories and possessions of the United States.

ARTICLE II

1. At all times during the term of the license or licenses designated in Item 3 of the Attachment hereto, the licensee will maintain financial protection in the amount specified in Item 2 of the Attachment and in the form of the nuclear energy liability insurance policy designated in the Attachment. If more than one license is designated in Item 3 of the Attachment, the licensee agrees to maintain such financial protection until the end of the term of that license which will be the last to expire. The licensee shall, notwithstanding the expiration, termination, modification, amendment, suspension of revocation of any license or licenses designated in Item 3 of the Attachment, maintain such financial protection in effect until all the radioactive material has been removed from the location and transportation of the radioactive material from the location has ended as defined in subparagraph 4(b), Article I, or until the Commission authorizes the termination or the modification of such financial protection. The Commission will not unreasonably withhold such authorization.

2. In the event of any payment by the insurer or insurers under a policy or policies specified in Item 5 of the Attachment hereto which reduces the aggregate limit of such policy or policies below the amount of financial protection, the licensee will promptly apply to his insurers for reinstatement of the amount specified in Item 2a of the Attachment (without reference to paragraph b of Item 2) and will make all reasonable efforts to obtain such reinstatement. In the event that the licensee has not obtained reinstatement of such amount within ninety days

after the date of such reduction, and in the absence of good cause shown to the contrary, the Commission may issue an order requiring the licensee to furnish financial protection for such amount in another form.

3. Any obligations of the licensee under subsection 53e(8) of the Act to indemnify the United States and the Commission from public liability, together with any public liability satisfied by the insurers under the policy or policies designated in the Attachment hereto, shall not in the aggregate exceed the amount of financial protection with respect to any nuclear incident, including the reasonable costs of investigating and settling claims and defending suits for damage.

4. The obligations of the licensee under this agreement shall apply only with respect to nuclear incidents occurring during the term of this agreement.

5. Upon the expiration or revocation of any license designated in Item 3 of the Attachment, the Commission will enter into an appropriate amendment of this agreement with the licensee reducing the amount of financial protection required under this Article: provided, that the licensee is then entitled to a reduction in the amount of financial protection under applicable Commission regulations and orders.

6. With respect to any common occurrence,

(a) If the sum of the limit of liability of any Nuclear Energy Liability-Property Insurance Association policy designated in Item 5 of the Attachment and the limits of liability of all other nuclear energy liability insurance policies (facility form) applicable to such common occurrence and issued by Nuclear Energy Liability-Property Insurance Association exceeds $155,000,000, the amount of financial protection specified in Item 2 a and b of the Attachment shall be deemed to be reduced by that proportion of the difference between said sum and $155,000,000 as the limit of liability of the Nuclear Energy Liability-Property Insurance Association policy designated in Item 5 of the Attachment bears to the sum of the limits of liability of all nuclear energy liability insurance policies (facility form) applicable to such common occurrence and issued by Nuclear Energy Liability-Property Insurance Association;

(b) If the sum of the limit of liability of any Mutual Atomic Energy Liability Underwriters policy designated in Item 5 of the Attachment and the limits of liability of all other nuclear energy liability insurance policies (facility form) applicable to such common occurrence and issued by Mutual Atomic Energy Liability Underwriters exceeds $45,000,000, the amount of financial protection specified in Item 2 a and b of the Attachment shall be deemed to be reduced by that proportion of the difference between said sum and $45,000,000 as the limit of liability of the Mutual Atomic Energy Liability Underwriters policy designated in Item 5 of the Attachment bears to the sum of the limits of liability of all nuclear energy liability insurance policies (facility form) applicable to such common occurrence and issued by Mutual Atomic Energy Liability Underwriters;

(c) If any of the other applicable agreements is with a person who has furnished financial protection in a form other than a nuclear energy liability insurance policy (facility form) issued by Nuclear Energy Liability-Property Insurance Association or Mutual Atomic Energy Liability Underwriters, and if also the sum of the amount of financial protection established under this agreement and the amounts of financial protection established under all other applicable agreements exceeds an amount equal to the sum of $200,000,000 and the amount available as secondary financial protection, the obligations of the licensee shall not exceed a greater proportion of an amount equal to the sum of $200,000,000 and the amount available as secondary financial protection than the amount of financial protection established under this agreement bears to the sum of such amount and the amounts of financial protection established under all other applicable agreements.

(d) As used in this paragraph 6., Article II and in Article III, *other applicable agreements* means each other agreement entered into by the Commission pursuant to subsection 170(c). of the Act in which agreement the nuclear incident is defined as a *common occurrence*. As used in this paragraph 6., Article II, *the obligations of the licensee* means the obligations of the licensee under subsection 53e(8) of the Act to indemnify the United States and the Commission from public liability, together with any public liability satisfied by the insurers under the policy or policies designated in the Attachment, and the reasonable costs incurred by the insurers in investigating and settling claims and defending suits for damage.

7. The obligations of the licensee under this Article shall not be affected by any failure or default on the part of the Commission or the Government of the United States to fulfill any or all of its obligations under this agreement. Bankruptcy or insolvency of any person indemnified other than the licensee, or of the estate of any person indemnified other than the licensee, shall not relieve the licensee of any of its obligations hereunder.

ARTICLE III

1. The Commission undertakes and agrees to indemnify and hold harmless the licensee and other persons indemnified, as their interest may appear, from public liability.

2. With respect to damage caused by a nuclear incident to property of any person legally liable for the nuclear incident, the Commission agrees to pay to such person

those sums which such person would have been obligated to pay if such property had belonged to another; provided, that the obligation of the Commission under this paragraph 2 does not apply with respect to:

(a) Property which is located at the location described in Item 4 of the Attachment or at the location described in Item 3 of the declarations attached to any nuclear energy liability insurance policy designated in Item 5 of the Attachment;

(b) Property damage due to the neglect of the person indemnified to use all reasonable means to save and preserve the property after knowledge of a nuclear incident;

(c) If the nuclear incident occurs in the course of transportation of the raidoactive material, the transporting vehicle and containers used in such transportation;

(d) The radioactive material.

3. [Reserved]

4. (a) The obligations of the Commission under this agreement shall apply only with respect to such public liability and such damage to property of persons legally liable for the nuclear incident (other than such property described in the proviso to paragraph 2 of this Article) as in the aggregate exceed the amount of financial protection.

(b) With respect to a common occurrence, the obligations of the Commission under this agreement shall apply only with respect to such public liability and such damage to property of persons legally liable for the nuclear incident (other than such property described in the proviso to paragraph 2 of this Article) as in the aggregate exceed $200,000,000.

5. The obligations of the Commission under this agreement shall apply only with respect to nuclear incidents occurring during the term of this agreement.

6. The obligations of the Commission under this and all other agreements and contracts to which the Commission is a party shall not, with respect to any nuclear incident, in the aggregate exceed whichever of the following is the lowest: (a) $500,000,000; (b) $560,000,000 less the amount of financial protection required under this agreement; or (c) with respect to a common occurrence, $560,000,000 less the sum of the amounts of financial protection established under this agreement and all other applicable agreements.

7. The obligations of the Commission under this agreement, except to the licensee for damage to property of the licensee, shall not be affected by any failure on the part of the licensee to fulfill its obligations under this agreement. Bankruptcy or insolvency of the licensee or any other person indemnified, or of the estate of the licensee or any other person indemnified, shall not relieve the Commission of any of its obligations hereunder.

ARTICLE IV

1. When the Commission determines that the United States will probably be required to make indemnity payments under the provisions of this agreement, the Commission shall have the right to collaborate with the licensee and other persons indemnified in the settlement and defense of any claim (provided that no government indemnity that would otherwise be available to pay public liability claims is used for these purposes) and shall have the right (a) to require the prior approval of the Commission for the settlement or payment of any claim or action asserted against the licensee or other person indemnified for public liability or damage to property of persons legally liable for the nuclear incident which claim or action the licensee or the Commission may be required to indemnify under this agreement; and (b) to appear through the Attorney General of the United States on behalf of the licensee or other person indemnified, take charge of such action and settle or defend any such action. If the settlement or defense of any such action or claim is undertaken by the Commission, the licensee shall furnish all reasonable assistance in effecting a settlement or asserting a defense.

2. Neither this agreement nor any interest therein nor claim thereunder may be assigned or transferred without the approval of the Commission.

ARTICLE V

The parties agree that they will enter into appropriate amendments of this agreement to the extent that such amendments are required pursuant to the Atomic Energy Act of 1954, as amended, or licenses, regulations or orders of the Commission.

ARTICLE VI

The licensee agrees to pay the Commission such fees as are established by the Commission pursuant to regulations or others of the Commission.

ARTICLE VII

The term of this agreement shall commence as of the date and time specified in Item 6 of the Attachment and shall terminate at the time of expiration of that license specified in Item 3 of the Attachment, which is the last to expire; provided that, except as may otherwise be provided in applicable regulations or orders of the Commission, the term of this agreement shall not terminate until all the radioactive material has been removed from the location and transportation of the radioactive material from the location has ended as defined in paragraph 4(b), Article I. Termination of the term of this agreement shall not affect any obligation of the licensee or the Commission under this agreement with respect to any nuclear

incident occurring during the term of this agreement.

UNITED STATES NUCLEAR REGULATORY COMMISSION

ATTACHMENT

Indemnity Agreement No. _____

Item 1—Licensee. _____

Item 2—

a. Amount of financial protection _____

b. With respect to any nuclear incident, the amount specified in Item 2a of this Attachment shall be deemed to be (i) reduced to the extent that any payment made by the insurer or insurers under a policy or policies specified in Item 5 of this Attachment reduces the aggregate amount of such insurance policies below the amount specified in Item 2a and (ii) restored to the extent that, following such reduction, the aggregate amount of such insurance polices is reinstated.

Item 3—License number or numbers_____

Item 4—Location _____

Item 5—Insurance Policy No.(s)_____

Item 6—The indemnity agreement designated above, of which this Attachment is a part, is effective as of 12:01 a.m., on the _____ day of _____, 19___.

For the U.S. Nuclear Regulatory Commission.

For _____

By _____

Dated at Bethesda, MD, the _____

day of _____ 19___.

[42 FR 51, Jan. 3, 1977, as amended at 42 FR 20141, Apr. 18, 1977; 44 FR 20633, Apr. 6, 1979; 44 FR 24045, Apr. 24, 1979; 45 FR 37410, June 3, 1980; 49 FR 11152, Mar. 26, 1984; 54 FR 24160, June 6, 1989]

§ 140.108 Appendix H—Form of indemnity agreement with licensees possessing plutonium for use in plutonium processing and fuel fabrication plants and furnishing proof of financial protection in the form of the licensee's resources.

This Indemnity Agreement No. _____ is entered into by and between _____ (hereinafter referred to as the *licensee*) and the United States Nuclear Regulatory Commission (hereinafter referred to as the *Commission*) pursuant to subsection 170(c) of the Atomic Energy Act of 1954, as amended (hereinafter referred to as *the Act*), and Section 201 of the Energy Reorganization Act of 1974, as amended.

ARTICLE I

As used in this agreement:

1. *Byproduct material, person, source material, special nuclear material, precautionary evacuation*, and *extraordinary nuclear occurrence* shall have the meaning given them in the Atomic Energy Act of 1954, as amended, and the regulations issued by the Commission.

2. *Amount of financial protection* means the amount specified in Item 2 or the Attachment annexed hereto.

3. *Nuclear incident* means any occurrence including an extraordinary nuclear occurrence, or series of occurrences at the location or in the course of transportation causing bodily injury, sickness, disease, or death, or loss of or damage to property, or loss of use of property, arising out of or resulting from the radioactive, toxic, explosive, or other hazardous properties of the radioactive material.

(b) Any occurrence, including an extraordinary nuclear occurrence of series of occurrences causing bodily injury, sickness, disease or death, or loss or damage to property, or loss of use of property, arising out of or resulting from the radioactive, toxic, explosive, or other hazardous properties of

i. The radioactive material discharged or dispersed from the location over a period of days, weeks, months or longer and also arising out of such properties of other material defined as *the radioactive material* in any other agreement or agreements entered into by the Commission under subsection 170(c) or (k) of the Act and so discharged or dispersed from *the location* as defined in any such other agreement, or

ii. The radioactive material in the course of transportation and also arising out of such properties of other material defined in any other agreement entered into the Commission pursuant to subsection 170(c) or (k) of the Act as *the radioactive material* and which is in the course of transportation shall be deemed to be a common occurrence. A common occurrence whall be deemed to constitute a single nuclear incident.

4. *In the course of transportation* means in the course of transportation within the United States, or in the course of transportation outside the United States and any other nation, and moving from one person licensed by the Commission to another person licensed by the Commission, including handling or temporary storage incidental thereto, of the radioactive material to the location or from the location provided that:

(a) With respect to transportation of the radioactive material to the location, such transportation is not be predetermination to be interrupted by the removal of the material from the transporting conveyance for any purpose other than the continuation of such transportation to the location or temporary storage incidental thereto:

(b) The transportation of the radioactive material from the location shall be deemed

to end when the radioactive material is removed from the transporting conveyance for any purpose other than the continuation of transportation or temporary storage incidental thereto:

(c) *In the course of transportation* as used in this agreement shall not include transportation of the radioactive material to the location if the material is also *in the course of transportation* from any other *location* as defined in any other agreement entered into by the Commission pursuant to subsection 170(c) or (k) of the Act.

5. *Person indemnified* means the licensee and any other person who may be liable for public liability.

6. *Public liability* means any legal liability arising out of or resulting from a nuclear incident or precautionary evacuation (including all reasonable additional costs incurred by a State, or a political subdivision of a State, in the course of responding to a nuclear incident or precautionary evacuation), except (1) claims under State or Federal Workmen's Compensation Acts of employees of persons indemnified who are employed (a) at the location or, if the nuclear incident occurs in the course of transportation of the radioactive material, on the transporting vehicle, and (b) in connection with the licensee's possession, use or transfer of the radioactive material; (2) claims arising out of an act of war; and (3) claims for loss of, or damage to, or loss of use of (a) property which is located at the location and used in connection with the licensee's possession, use, or transfer of the radioactive material, and (b) if the nuclear incident occurs in the course of transportation of the radioactive material, the transporting vehicle, containers used in such transportation, and the radioactive material.

7. *The location* means the location described in Item 4 of the Attachment hereto.

8. *The radioactive material* means (a) any source, special nuclear, or byproduct material which (1) is both used or to be used in, or is processed or to be processed by, the licensee's plutonium processing and fuel fabrication plant or plants and is subject to the license or licenses designated in the Attachment hereto, or (2) is produced as the result of the operation of said plant or plants or (b) any source special nuclear, or byproduct material which is waste or contamination from material described in paragraph 8(a). The words *used or to be used* and *processed or to be processed* in this paragraph cover source, special nuclear or byproduct material which is *in the course of transportation* as used in the agreement or is received at the plant for use or processing in the plant but which is, in fact, for any reason, not so used or processed.

9. *United States* when used in a geographical sense includes Puerto Rico and all territories and possessions of the United States.

ARTICLE II

1. The licensee undertakes and agrees to indemnify and hold harmless all persons indemnified, as their interest may appear, from public liability.

2. With respect to damage caused by a nuclear incident to property of any person legally liable for the incident, the licensee agrees to pay to such person those sums which such person would have been obligated to pay if such property had belonged to another; provided, that the obligation of the licensee under this paragraph 2 does not apply with respect to:

(a) Property which is located at the location and used in connection with the licensee's possession, use or transfer of the radioactive material;

(b) Property damage due to neglect of the person indemnified to use all reasonable means to save and preserve the property after knowledge of a nuclear incident;

(c) If the nuclear incident occurs in the course of transportation of the radioactive material, the transporting vehicle and containers used in such transportation; and

(d) The radioactive material.

3. Any obligations of the licensee under paragraphs 1 and 2 of this Article, and subsection 53e(8) of the Act to indemnify the United States and the Commission from public liability shall not in the aggregate exceed the amount of financial protection with respect to any nuclear incident.

4. The obligations of the licensee under this agreement shall apply only with respect to nuclear incidents occurring during the term of this agreement.

5. Upon the expiration or revocation of any license designated in Item 3 of the Attachment, the Commission will enter into an appropriate amendment of this agreement with the licensee reducing the amount of financial protection required under this Article; provided, that the licensee is then entitled to a reduction in the amount of financial protection under applicable Commission regulations and orders.

6. With respect to any common occurrence, if the sum of the amount of financial protection established under this agreement and the amount of financial protection established under all other applicable agreements exceeds an amount equal to the sum of $200,000,000 and the amount available as secondary financial protection, the obligations of the licensee described in paragraph 3 of this Article shall not exceed a greater proportion of an amount equal to the sum of $200,000,000 and the amount available as secondary financial protection than the amount of financial protection established under this agreement bears to the sum of such amount

and the amounts of financial protection established under all other applicable agreements. As used in this paragraph, and in Article III, *other applicable agreements* means each other agreement entered into by the Commission pursuant to subsection 170(c) or (k) of the Act in which agreement the nuclear incident is defined as a *common occurrence*.

7. The obligations of the licensee under this Article shall not be affected by any failure or default on the part of the Commission or the Government or the United States to fulfill any or all of its obligations under this agreement. Bankruptcy or insolvency of any person indemnified other than the licensee, or of the estate of any person indemnified other than the licensee shall not relieve the licensee of any of its obligations hereunder.

ARTICLE III

1. The Commission undertakes and agrees to indemnify and hold harmless the licensee and other persons indemnified, as their interest may appear, from public liability.

2. With respect to damage caused by a nuclear incident to property of any person legally liable for the nuclear incident, the Commission agrees to pay to such person those sums which such person would have been obligated to pay if such property had belonged to another; provided, that the obligation of the Commission under this paragraph 2 does not apply with respect to:

(a) Property which is located at the location and used in connection with the licensee's possession, use or transfer of the radioactive material;

(b) Property damage due to the neglect of the person indemnified to use all reasonable means to save and preserve the property after knowledge of a nuclear incident;

(c) If the nuclear incident occurs in the course of transportation of the radioactive material, the transporting vehicle and containers used in such transportation;

(d) The radioactive material.

3. [Reserved]

4. (a) The obligations of the Commission under this agreement shall apply only with respect to such public liability and such damage to property of persons legally liable for the nuclear incident (other than such property described in the proviso to paragraph 2 of this Article) as in the aggregate exceed the amount of financial protection.

(b) With respect to a common occurrence, the obligations of the Commission under this agreement shall apply only with respect to such public liability and such damage to property of persons legally liable for the nuclear incident (other than such property described in the proviso to paragraph 2 of this Article) as in the aggregate exceed $200,000,000.

5. The obligations of the Commission under this agreement shall apply only with respect to nuclear incidents occurring during the term of this agreement.

6. The obligations of the Commission under this and all other agreements and contracts to which the Commission is a party shall not, with respect to any nuclear incident, in the aggregate exceed whichever of the following is the lowest; (a) $500,000,000; (b) $560,000,000 less the amount of financial protection required under this agreement; or (c) with respect to a common occurrence, $560,000,000 less the sum of the amounts of financial protection established under this agreement and all other applicable agreements.

7. The obligations of the Commission under this agreement, except to the licensee for damage to property of the licensee, shall not be affected by any failure on the part of the licensee to fulfill its obligations under this agreement. Bankruptcy or insolvency of the licensee or any other person indemnified, or of the estate of the licensee or any other person indemnified shall not relieve the Commission of any of its obligations hereunder.

ARTICLE IV

1. When the Commission determines that the United States will probably be required to make indemnity payments under the provisions of this agreement, the Commission shall have the right to collaborate with the licensee and other persons indemnified in the settlement and defense of any claim (provided that no government indemnity that would otherwise be available to pay public liability claims is used for these purposes) and shall have the right (a) to require the prior approval of the Commission for the settlement or payment of any claim or action asserted against the licensee or other persons indemnified for public liability or damage to property of persons legally liable for the nuclear incident which claim or action the licensee or the Commission may be required to indemnify under this agreement; and (b) to appear through the Attorney General of the United States on behalf of the licensee or other person indemnified, take charge of such action and settle or defend any such action. If the settlement or defense of any such action or claim is undertaken by the Commission, the licensee shall furnish all reasonable assistance in effecting a settlement or asserting defense.

2. Neither this agreement nor any interest therein nor claim thereunder may be assigned or transferred without the approval of the Commission.

ARTICLE V

The parties agree that they will enter into appropriate amendments of this agreement to the extent that such amendments are required pursuant to the Atomic Energy Act of

1954, as amended, or licenses, regulations or orders of the Commission.

ARTICLE VI

The licensee agrees to pay the Commission such fees as are established by the Commission pursuant to regulations or orders of the Commission.

ARTICLE VII

The term of this agreement shall commence as of the date and time specified in Item 5 of the Attachment and shall terminate at the time of expiration of that license specified in Item 3 of the Attachment, which is the last to expire; provided that, except as may otherwise be provided in applicable regulations or orders of the Commission, the term of this agreement shall not terminate until all the radioactive material has been removed from the location and transportation of the radioactive material from the location has ended as defined in paragraph 4(b), Article I. Termination of the term of this agreement shall not affect any obligation of the licensee or the Commission under this agreement with respect to any nuclear incident occurring during the term of this agreement.

UNITED STATES NUCLEAR REGULATORY COMMISSION

ATTACHMENT

Indemnity Agreement No. _____
Item 1—Licensee _____
Item 2—Amount of financial protection—
Item 3—License number or numbers_____
Item 4—Location _____
Item 5—The indemnity agreement designated above, of which this Attachment is a part, is effective as of 12:01 a.m., on the _____ day of _____ 19____.

Dated at Bethesda, MD, the _____ day of _____ 19___.

For the U.S. Nuclear Regulatory Commission.

For _____

By _____

[42 FR 53, Jan. 3, 1977, as amended at 42 FR 20142, Apr. 18, 1977; 42 FR 23501, May 9, 1977; 44 FR 20633, Apr. 6, 1979; 44 FR 24045, Apr. 24, 1979; 45 FR 37410, June 3, 1980; 49 FR 11152, Mar. 26, 1984; 54 FR 24161, June 6, 1989]

§ 140.109 Appendix I.

NUCLEAR ENERGY LIABILITY INSURANCE ASSOCIATION

MASTER POLICY NO. ____

Nuclear Energy Liability Insurance

(Secondary Financial Protection)

Named Insured: Each person or organization designated in Item 1 of a *certificate*.

Policy Period: Beginning on the first day of August, 1977, and continuing to the effective date and time of the cancellation or other termination of this policy, eastern standard time.

Limits of Liability: The amount of retrospective premium actually received by the companies plus the amount of the companies' contingent liability, if any, pursuant to Conditions 2, 3, and 4.

Date of Issue _____

Authorized Representative _____

In consideration of the payment of the annual premium, in reliance upon the statements in the *certificates* and subject to the limits of liability, conditions and other terms of this Master Policy, the undersigned members of Nuclear Energy Liability Insurance Association (hereinafter called the *companies*), each for itself, severally and not jointly, and in the respective proportions herein set forth, and the *insureds* named in the *certificates*, agree as follows:

INSURING AGREEMENTS

I. NUCLEAR ENERGY LIABILITY INSURANCE

(Secondary Financial Protection)

To pay on behalf of or to the *insured* or to the *insured's* workers' compensation carrier all sums payable as *excess losses* to which this Master Policy applies.

II. DEFINITIONS

Bodily injury means bodily injury, sickness or disease, including death resulting therefrom, sustained by any person.

Certificate means a Certificate of Insurance, including Declarations and Bond for Payment of Retrospective Premiums, issued to be a part of this Master Policy.

Common nuclear occurrence means any occurrence or series of occurrences causing *bodily injury* or *property damage* arising out of the radioactive, toxic, explosive, or other hazardous properties of *nuclear material*

(a) Discharged or dispersed from a nuclear reactor described in Item 3 of a *certificate* over a period of days, weeks, months, or longer, or

(b) Discharged or dispersed from a nuclear reactor described in Item 3 of a *certificate* over a period of days, weeks, months or longer and also arising out of such properties

of *nuclear material* so discharged or dispersed from one or more other nuclear reactors described in Item 3 of other *certificates*, or

(c) In the course of transportation for which protection is afforded (or would be afforded but for exhaustion of its limit of liability) under the *primary financial protection* described in Item 4 of a *certificate* and also arising out of such properties of nuclear material in the course of transportation for which protection is afforded (or would be afforded but for exhaustion of its limit of liability) under the *primary financial protection* described in Item 4 of one or more other *certificates*.

Damages and claim expenses includes sums estimated by the companies to be payable under this policy and payments made by the companies under this Master Policy:

(a) In settlement of claims and in satisfaction of judgments against the *insureds* for damages because of *bodily injury* or *property damage;*

(b) For (1) costs taxed against an *insured* in any suit against the *insured* seeking damages payable under the terms of this Master Policy and interest on any judgment therein, (2) premiums on appeal bonds and bonds to release attachments in any such suit and (3) reasonable expenses, other than loss of earnings, incurred by the *insured* at the companies' request;

(c) For expenses incurred in the investigation, negotiation, settlement and defense of any claim or suit including, but not limited to, the cost of such services by salaried employees of the companies, fees and expenses of independent adjusters, attorneys' fees and disbursements, expenses for expert testimony, inspection and appraisal of property, examination, X-ray or autopsy or medical expenses of any kind;

(d) For expenses incurred by the companies in investigating a *nuclear incident* or in minimizing its effects;

(e) For all other expenses of the companies in fulfilling their obligations under this Master Policy, provided that such expenses are reasonable and necessary.

Excess losses means all *damages and claim expenses*

(a) Because of *bodily injury* or *property damage* to which a *certificate* applies, and

(b) Which are excess of all sums paid or payable as estimated by the companies under all applicable *primary financial protection*.

Extraordinary nuclear occurrence has the meaning given it in the Atomic Energy Act of 1954, or in any law amendatory thereof.

Insured means any person or organization identified in Item 1 or 2 of a *certificate*.

Nuclear incident means

(a) An *extraordinary nuclear occurrence*, or

(b) A *common nuclear occurrence*, or if neither of these,

(c) An occurrence or series of occurrences, including continuous or repeated exposure to substantially the same general conditions, causing *bodily injury* or *property damage* arising out of the radioactive, toxic, explosive, or other hazardous properties of *nuclear material*.

Nuclear material means *source material*, *special nuclear material* or *byproduct material*.

Primary financial protection means the insurance policies or other contracts identified in Item 4 of a *certificate* and includes any amendment thereto which is consented to by the companies pursuant to Condition 6 of this Master Policy.

Property damage means physical injury to or destruction or radioactive contamination of property, and loss of use of property so injured, destroyed or contaminated, and loss of use of property while evacuated or withdrawn from use because possibly so contaminated or because of imminent danger of such contamination.

Source material, *special nuclear material*, and *byproduct material* have the meanings given them in the Atomic Energy Act of 1954, or in any law amendatory thereof.

III. APPLICATION OF POLICY

Insurance is provided by this Master Policy only through a *certificate*. No insurance is afforded with respect to *bodily injury* or *property damage* caused prior to August 1, 1977 by a *nuclear incident*.

CONDITIONS

1. ANNUAL PREMIUM

The named insureds designated in a *certificate* shall pay to the companies the annual premium for each calendar year or part thereof.

Such annual premium shall be determined by the companies and stated in a written notice mailed to the first named insured shown in Item 1 of a *certificate*, and shall be due and payable as stated in such notice.

2. RETROSPECTIVE PREMIUM

The named insureds designated in a *certificate* shall pay to the companies retrospective premium in the event of *excess losses* due to *bodily injury* or *property damage* caused during their *certificate* period by a *nuclear incident* arising out of or in connection with a nuclear reactor described in Item 3 of the *certificate* or in Item 3 of any other *certificate*. The amount of retrospective premium-due under each *certificate* shall be determined by multiplying such *excess losses* by the ratio of the maximum retrospective premium payable with respect to the *nuclear incident* under the *certificate* to the total of the maximum retrospective premiums payable with respect to the *nuclear incident* under all such *certificates*.

If any portion of the *bodily injury* or *property damage* to which this Master Policy applies is caused during any portion of a *certificate* period by a *nuclear incident*, the retrospective premium the named insureds designated in such *certificate* are obligated to pay shall be determined as if all *bodily injury* or *property damage* to which this Master Policy applies caused by the *nuclear incident* had been caused during the *certificate* period of such *certificate*.

The maximum retrospective premium that the named insureds designated in a *certificate* shall pay to the companies for all *excess losses* arising out of any one *nuclear incident* is the amount stated in Item 7 of their *certificate*.

In the event of two more *nuclear incidents*, the maximum amount of retrospective premium that shall be due from and payable by the named insureds in one calendar year shall not exceed twice the amount stated in Item 7 of their *certificate*. Any amount in excess thereof shall be paid in subsequent calendar years as billed by the companies.

In addition, an allowance for applicable premium taxes shall be determined by the companies and paid to them by the named insureds at the time retrospective premiums are due and payable.

After a *nuclear incident* resulting in *excess losses*, the companies shall mail to the first named insured designated in Item 1 of a *certificate* written notice of the retrospective premium and allowance for premium taxes then due under such *certificate*. Such notice shall also constitute notice to all other named insureds designated in such *certificate*. The named insureds shall pay directly to the Nuclear Energy Liability Insurance Association the retrospective premium and allowance for premium taxes stated in the notice. The notice shall specify a date no earlier than 60 days after mailing by which time payment is to be received by the Nuclear Energy Liability Insurance Association.

The companies shall at least annually review their estimate of *excess losses* arising out of the *nuclear incident* and shall adjust the retrospective premium and allowance for premium taxes accordingly. If the amount due from the named insureds is increased, written notice shall be mailed to the first named insured in accordance with the foregoing paragraph; if deceased the companies shall return the excess to the first named insured.

The obligation of the named insureds to pay retrospective premium and the allowance for premium taxes for *excess losses* arising out of a *nuclear incident* shall continue until the named insureds have paid the maximum retrospective premium stated in Item 7 of their *certificate* plus allowance for premium taxes.

The companies shall send to the Nuclear Regulatory Commission summaries of their estimates of *excess losses* arising out of the *nuclear incident* and their computations of retrospective premium and the allowance for premium taxes due.

All retrospective premium (but not the allowance for premium taxes) received by the companies is to be held by the companies separate from the companies' other assets and is to be used by the companies only for the purpose of paying *excess losses*. Any investment income received by the companies from such retrospective premium shall accrue to the benefit of the named insureds. This paragraph shall not apply to any retrospective premium received by the companies as reimbursement for any funds expended pursuant to Condition 4.

No commission will be paid with respect to retrospective premium and allowance for premium taxes.

3. LIMIT OF LIABILITY

Regardless of the number of

(a) Persons or organizations who are *insureds* under this Master Policy, or

(b) Claims made and suits brought against any and all *insureds*, or

(c) Policies or contracts of *primary financial protection* or *certificates* which apply to the *nuclear incident*, or

(d) Years this Master Policy and any *certificate* shall continue in force,

The total liability of the companies under this Master Policy for all *excess losses* arising out of any *nuclear incident* shall not exceed the amount of retrospective premium actually received by the companies pursuant to Condition 2 with respect to such *nuclear incident* plus the companies' contingent liability, if any, as determined by Condition 4. Reimbursement of the companies for funds expended pursuant to Condition 4 shall not operate to increase the total liability of the companies.

4. CONTINGENT LIABILITY OF THE COMPANIES

The companies have a contingent liability under this Master Policy for payment of *excess losses* but only if, and to the extent that, the retrospective premium due under one or more *certificates* is not paid. In the event of any such failure to pay retrospective premiums, the companies' obligations under this Condition 4 are limited as follows:

Regardless of the number of *nuclear incidents* which cause *bodily injury* or *property damage* to which this Master Policy applies, the number of years this Master Policy is in force, the number of *certificates* issued or in effect, or the number of annual premiums paid or payable.

(a) The total contingent liability of the companies for all *excess losses* arising out of two or more *nuclear incidents* shall not exceed $46,500,000;

(b) Subject to the above provision (a), the total contingent liability of the companies for all *excess losses* arising out of any one *nuclear incident* shall not exceed $23,250,000;

(c) Subject to the above provisions (a) and (b), the maximum amount to be paid by the companies in any one calendar year because of contingent liability for *excess losses* shall not exceed $23,250,000.

If a named insured designated in a *certificate* shall become insolvent or be adjudged bankrupt, the companies' obligation under this Condition 4 shall not apply to the failure of any named insured designated in such *certificate* to pay retrospective premium with respect to *excess losses* because of *bodily injury* or *property damage* caused after the date of such insolvency or bankruptcy.

5. INVESTIGATION, DEFENSE OR SETTLEMENT OF CLAIMS OR SUITS

Subject to the provisions of any written agreement between the companies and the Nuclear Regulatory Commission, the companies shall defend any claim or suit alleging *bodily injury* or *property damage* caused by a *nuclear incident* and seeking damages which are payable under this Master Policy, and may make such investigation and settlement of any claim or suit as they deem expedient. In no event shall the companies be obligated to pay any claim or judgment or to defend any claim or suit after the companies have paid the amount of retrospective premium actually received for *excess losses* arising out of the *nuclear incident* plus the amount of their contingent liability, if any.

6. PRIMARY FINANCIAL PROTECTION

Regardless of the number of policies or contracts of *primary financial protection* applicable to a *nuclear incident*, the limit of liability of all such policies or contracts shall be deemed to be exhausted when the sums paid under all such policies or contracts are equal to the lesser of (1) the sum of the limits of liability available under all such primary financial protection or (2) one hundred forty million dollars.

The named insured designated in a *certificate* shall maintain in full effect during the currency of such *certificate* the *primary financial protection* described therein, except for any reduction of the limit of liability of such *primary financial protection* solely as the result of sums paid thereunder. Failure of the named insureds to comply with the foregoing shall not invalidate this Master Policy, but in the event of such failure the companies shall be liable only to the extent that they would have been liable and the named insureds complied therewith.

In the event that the limit of liability of the *primary financial protection* is reduced, such names insureds shall immediately inform the companies thereof and make all reasonable efforts to reinstate such limit.

Upon the companies' request the named insureds shall provide the companies with a certified copy of any policy or other contract of *primary financial protection*. No amendment of the *primary financial protection* shall increase, extend or broaden the insurance provided by this Master Policy unless the companies agree to the amendment by an endorsement issued to form a part of this Master Policy.

7. INTEREST TO BE PAID BY NAMED INSURED ON RETROSPECTIVE PREMIUM AND ALLOWANCE FOR PREMIUM TAXES IN DEFAULT

If retrospective premium or allowance for premium taxes is not paid when due by the named insureds designated in Item 1 of a *certificate*, such named insureds shall be obligated to pay, in addition to the amount in default, interest thereon during the period of default. Such interest shall be computed at an annual rate equal to the sum of (a) three percent plus (b) a rate of interest equal to Moody's Average Public Utility Bond Yield described in the issue of Moody's Bond Survey current on the date that the retrospective premium and allowance for premium taxes were due. The annual rate of interest shall be adjusted monthly during the period of default to reflect any revisions of Moody's Average Public Utility Bond Yield described in the issue of Moody's Bond Survey current on the first business day of each such month.

The interest so received shall be used to pay to the companies interest at the annual rate described above for any funds the companies have paid pursuant to Condition 4. Any balance remaining shall accrue to the benefit of named insureds not in default as if it were investment income on retrospective premium.

8. NOTICE OF NUCLEAR INCIDENT, CLAIM OR SUIT

In the event of *bodily injury* or *property damage* to which this Master Policy applies or of a *nuclear incident* which may give rise to claims therefor, written notice containing particulars sufficient to identify the *insured* and also reasonably obtainable information with respect to the time, place and circumstances thereof, and the names and addresses of the injured and of available witnesses, shall be given by or for the *insured* to Nuclear Energy Liability Insurance Association or the companies as soon as practicable. If claim is made or suit is brought against the *insured*, the *insured* shall immediately forward to Nuclear Energy Liability Insurance Association or the companies every demand, notice, summons or other process received by or on behalf of the *insured*.

9. ASSISTANCE AND COOPERATION OF THE INSURED

The *insured* shall cooperate with the companies and, upon the companies' request, attend hearings and trials and assist in making settlements, in securing and giving evidence, in obtaining the attendance of witnesses and in the conduct of any legal proceedings in connection with the subject matter of this insurance. The *insured* shall not, except at the *insured's* own cost, make any payment, assume any obligation or incur any expense.

10. ACTION AGAINST COMPANIES

No action shall lie against the companies or any of them unless, as a condition precedent thereto, the *insured* shall have fully complied with all the terms of this Master Policy, nor until the amount of the *insured's* obligation to pay shall have been finally determined either by judgment against the *insured* after actual trial or by written agreement of the *insured,* the claimant and the companies.

Any person or organization or the legal representative thereof who has secured such judgment or written agreement shall thereafter be entitled to recover under this Master Policy to the extent of the insurance afforded by this Master Policy. No person or organization shall have any right under this Master Policy to join the companies or any of them as parties to any action against the *insured* to determine the *insured's* liability, nor shall the companies or any of them be impleaded by the *insured* or the *insured's* legal representative. Except as provided in Condition 4, bankruptcy or insolvency of the *insured* or of the *insured's* estate shall not relieve the companies of any of their obligations hereunder.

11. SUBROGATION

In the event of any payment under this Master Policy, the companies may participate with the *insured* and any underlying insurer in the exercise of all the *insured's* rights of recovery against any person or organization liable therefor. Prior to knowledge of *bodiliy injury* or *property damage* to which this Master Policy applies or of a *nuclear incident* which may give rise to claims therefor, the *insured* may waive in writing any right of recovery against any person or organization. After such knowledge, the *insured* shall not waive or otherwise prejudice any such right of recovery but shall do everything necessary to secure such rights. Recoveries shall be applied first to reimburse any person or organization (including the *insured)* that may have paid any amount with respect to liability in excess of the limit of the companies' liability hereunder; then to reimburse the companies up to the amount paid hereunder; and lastly to reimburse anyone entitiled to claim the residue, if any. A different apportionment maybe made by agreement signed by all parties affected.

Reasonable expenses incurred in the exercise of rights of recovery shall be apportioned in the ratio of the respective losses for which recovery is sought. The companies shall, after deducting all of their expenses in securing recovery, apply the net amount of recoveries made by the companies as a credit in determining the amount of *excess* losses.

12. OTHER INSURANCE

This insurance shall be excess insurance over *primary financial protection*.

This insurance is concurrent with insurance afforded by a Master Policy—Nuclear Energy Liability Insurance (Secondary Financial Protection) issued to the named insured by Mutual Atomic Energy Liability Underwriters, hereinafter called *concurrent insurance*. The companies shall not be liable under this Master Policy for a greater proportion of *excess losses* than the applicable limit of liability described in Condition 3 bears to the sum of (a) such limit plus (b) the applicable limit of liability of such concurrent insurance.

If the *insured* has other valid and collectible insurance (other than *primary financial protection* or concurrent insurance) applicable to *excess losses* covered by this Master Policy, the insurance afforded by this Master Policy shall be primary insurance under such other insurance.

13. CHANGES

Notice to any agent or knowledge possessed by any agent or by any other person shall not effect a waiver or a change in any part of this Master Policy or estop the companies from asserting any right under the terms of this Master Policy; nor shall the terms of this Master Policy be waived or changed, except by endorsement executed by Nuclear Energy Liability Insurance Association on behalf of the companies and issued to form a part of this Master Policy.

14. ASSIGNMENT

Assignment of interest by the named insured shall not bind the companies until their consent is endorsed hereon; if, however, the named insured shall die or be declared bankrupt or insolvent, this Master Policy shall cover such named insured's legal representative, receiver or trustee as an *insured* under this Master Policy, but only with respect to such legal representative's, receiver's or trustee's liability as such, and then only provided written notice of the legal representative's, receiver's or trustee's appointment as such is given to the companies within ten days after such appointment.

15. CUSTODIAN OF THE POLICY—NUCLEAR REGULATORY COMMISSION

The named insureds have designated the Nuclear Regulatory Commission as the custodian of this Master Policy and any endorsements thereto.

16. CANCELLATION

The first named insured designated in Item 1 of a *certificate* may cancel such *certificate* by mailing to the companies and the Nuclear Regulatory Commission written notice stating when, not less than thirty days thereafter, such cancellation shall be effective.

The companies may cancel any *certificate* by mailing to the first named insured designated in Item 1 of such *certificate* written notice stating when, not less than ninety days thereafter, such cancellation shall be effective; provided that in the event of nonpayment of any annual premium, retrospective premium or allowance for premium taxes due under a *certificate,* such *certificate* may be canceled by the companies by mailing to the first named insured designated therein written notice stating when, not less than thirty days thereafter, such cancellation shall be effective.

The mailing of notice as aforesaid shall be sufficient proof of notice. The effective date and time of cancellation stated in the notice shall become the end of the *certificate* period. Delivery of such written notice, either by the first named insured designated in Item 1 of a *certificate* or by the companies, shall be equivalent to mailing.

A copy of the companies' cancellation notice shall be mailed to the Nuclear Regulatory Commission, but mailing such copy is not a condition of cancellation.

If a *certificate* is canceled, the earned portion of the annual premium shall be computed pro-rata. Adjustment of the annual premium, if any, may be made either at the time cancellation is effective or as soon as practicable after cancellation becomes effective, but payment or tender of unearned premium is not a condition of cancellation.

Cancellation or termination of any *certificate* shall not terminate the obligation of a named insured to pay retrospective premium and the allowance for premium taxes as provided in such named insured's *certificate* and Condition 2 of this Master Policy.

This Master Policy shall terminate automatically on the effective date and time of cancellation or termination of the last *certificate* in effect.

17. COMPANY REPRESENTATION

(a) Any notice, sworn statement or proof of loss which may be required by the provisions of this Master Policy may be given to any one of the companies, and such notice, statement or proof of loss so given shall be valid and binding as to all companies.

(b) In any action or suit against the companies, service of process may be made on any one of them and such service shall be deemed valid and binding service on all companies.

(c) Nuclear Energy Liability Insurance Association is the agent of the companies with respect to all matters pertaining to this insurance. All notices or other communications required by this Master Policy to be given to the companies may be given to such agent, at its office at The Exchange, Suite 245, 270 Farmington Avenue, Farmington, Connecticut—06032 with the same force and effect as if given directly to the companies. Any requests, demands or agreements made by such agent shall be deemed to have been made directly by the companies.

18. AUTHORIZATION OF FIRST NAMED INSURED

Except with respect to compliance with the obligations imposed on the *insured* by Conditions 8, 9, 10 and 11 of this Master Policy, the first named insured designated in Item 1 of a *certificate* is authorized to act for every other person and organization insured under such *certificate* in all matters pertaining to this insurance.

19. CHANGES IN SUBSCRIBING COMPANIES AND IN THEIR PROPORTIONATE LIABILITY

The members of Nuclear Energy Liability Insurance Association subscribing this Master Policy, and the proportionate liability of each, may change from time to time.

Each company subscribing this Master Policy upon its issuance shall be liable only for its stated proportion of any obligation assumed or expense incurred under this Master Policy because of *bodily injury* or *property damage* caused during the period from the effective date of this Master Policy to the close of December 31 next following. For each subsequent calendar year, beginning January 1 next following the effective date of this Master Policy, the subscribing companies and the proportionate liability of each such company shall be stated in an endorsement issued to form a part of this Master Policy, duly executed by the President of Nuclear Energy Liability Insurance Association on behalf of each such company, and mailed or delivered to the Nuclear Regulatory Commission.

20. DECLARATIONS

By acceptance of this Master Policy, the named insureds designated in a *certificate* agree that the statements in such *certificate* are their agreements and representations, that this Master Policy and such *certificate* are issued in reliance upon the truth of such representations and that this Master Policy and such *certificate* embody all agreements

between such named insureds and the companies or any of their agents relating to this insurance.

In witness whereof each of the subscribing companies has caused this Master Policy to be executed on its behalf by the Nuclear Energy Liability Insurance Association and duly countersigned on the first page by an authorized representative.

For the Subscribing Companies of NUCLEAR ENERGY LIABILITY INSURANCE ASSOCIATION

By:

Burt C. Proom,

President.

NUCLEAR ENERGY LIABILITY INSURANCE ASSOCIATION

Certificate No. _____

Forming Part of Master Policy No. _____

CERTIFICATE OF INSURANCE DECLARATIONS AND BOND FOR PAYMENT OF RETROSPECTIVE PREMIUMS

Certificate of Insurance

This is to certify that the persons and organizations designated in Item 1 of the Declarations are named insureds under the Master Policy—Nuclear Energy Liability Insurance (Secondary Financial Protection), herein called the *Master Policy*, issued by Nuclear Energy Liability Insurance Association.

Such insurance as is provided by the Master Policy applies, through this *certificate*, only:

(a) to the *insureds* identified in Items 1 and 2 of the Declarations,

(b) for the *certificate* period stated in Item 6 of the Declarations,

(c) to *bodily injury* or *property damage*

(1) with respect to which the *primary financial protection* described in Item 4 of the Declarations would apply but for exhaustion of its limit of liability as described in Condition 6 of the Master Policy, and

(2) which is caused during the *certificate* period stated in Item 6 of the Declarations by a *nuclear incident* arising out of or in connection with the nuclear reactor described in Item 3 of the Declarations, and

(3) which is discovered and for which written claim is made against the *injured* not later than ten years after the end of the *certificate* period stated in Item 6 of the Declarations. However, with respect to *bodily injury* or *property damage* caused by an *extraordinary nuclear occurrence* this subparagraph (3) shall not operate to bar coverage for *bodily injury* or *property damage* which is discovered and for which written claim is made against the *insured* not later than twenty years after the date of the *extraordinary nuclear occurrence*.

DECLARATIONS

Item 1. Named insureds and addresses:

(a)

(b)

Item 2. Additional *insureds:*

Any other person or organization who would be insured under the *primary financial protection* identified in Item 4 of the Declarations but for exhaustion of the limit of liability of such *primary financial protection*.

Item 3. Description and location of nuclear reactor:

Item 4. (a) Identification of *primary financial protection* applicable to the nuclear reactor and limit(s) of liability thereof:

Nuclear Energy Liability Insurance Association's Policy NF– $108,500,000

Mutual Atomic Energy Liability Underwriters' Policy MF– $31,500,000

(b) The following endorsements, attached to the *primary financial protection* policies listed in Item 4(a) also apply to the insurance afforded by the Master Policy through this *certificate* as though they were attached hereto:

(1) Waiver of Defense Endorsement (Extraordinary Nuclear Occurrence) and

(2) Supplementary Endorsement—Waiver of Defenses—Reactor Construction at the Facility,

(c) The limits of liability provided under the *primary financial protection* specified in Item 4(a) above are not shared with any other reactor except as follows:

Item 5. Limits of Liability: The amount of retrospective premium actually received by the companies plus the amount of the companies' contingent liability, if any, pursuant to Conditions 2, 3, and 4 of the Master Policy.

Item 6. *Certificate* Period: Beginning at 12:01 a.m. on _____ and continuing to the effective date and time of cancellation or termination of the Master Policy or this *certificate*, whichever first occurs, eastern standard time.

Item 7. Maximum retrospective premium (exclusive of allowance for premium taxes) payable pursuant to Condition 2 of the Master Policy with respect to each *nuclear incident:* $3,875,000.

Item 8. Premium payable pursuant to Condition 1 of the Master Policy for the period from _____ through December 31 following: $_____.

BOND FOR PAYMENT OF RETROSPECTIVE PREMIUMS

Know All Men By These Presents, that the undersigned do hereby acknowledge that they are named insureds under the Master Policy described in the above Certificate of Insurance and Declarations. The named insureds do hereby convenant with and are held and are firmly bound to the members of

Nuclear Energy Liability Insurance Association subscribing the Master Policy (hereinafter called the *companies*) to pay the companies all retrospective premiums and allowances for premium taxes which shall become due and payable in accordance with the Master Policy, as it may be changed from time to time, with interest on such premiums and allowances for taxes to be computed at the rate provided in the Master Policy from the date payment thereof is specified to be due the companies in written notice to the first named insured as provided in Condition 2 of the Master Policy until paid;

And it is hereby expressly agreed that copies of written notices of retrospective premiums and allowances for premium taxes due and payable or other evidence of such amounts due and payable sworn to by a duly authorized representative of the companies shall be prima facie evidence of the fact and extent of the liability of the named insureds for such amounts;

And it is further expressly agreed that the named insureds will indemnify the companies against any and all liability, losses and expenses of whatsoever kind or nature (including but not limited to interest, court cost, and counsel fees) which the companies may sustain or incur (1) by reason of the failure of the named insureds to comply with the convenants and provisions of this Bond and (2) in enforcing any of the convenants or provisions of this Bond, or any provisions of the Master Policy relating to such convenants or provisions;

For the purpose of recording this agreement, a photocopy acknowledged before a Notary Public to be a true copy hereof shall be regarded as an original.

The preceding Certificate of Insurance, Declarations and Bond form a part of the Master Policy. Cancellation or termination of the Master Policy or the Certificate of Insurance shall not affect the named insured's obligations under the policy or the Bond to pay the retrospective premiums and allowances for premium taxes, as provided in this *Certificate* and Condition 2 of the Master Policy.

In witness whereof, the named insureds have caused the Declaration and the Bond for Payment of Retrospective Premiums to be signed and sealed by a duly authorized officer, to be effective _____ eastern standard time.

Attest or Witness
Named Insureds:
By _____
(Seal)
(Signature of Officer)

_____
(type or print Name & Title of Officer)
Date: _____

In witness whereof, the companies subscribing the Master Policy have caused the Certificate of Insurance and the Declarations to be signed on their behalf by the President of Nuclear Energy Liability Insurance Association to be effective _____ eastern standard time, and countersigned below by a duly authorized representative.

For the Subscribing Companies of Nuclear Energy Liability Insurance Association.
By: President _____
Countersigned by _____
(Authorized Representative)

[49 FR 11153, Mar. 26, 1984]

PART 150—EXEMPTIONS AND CONTINUED REGULATORY AUTHORITY IN AGREEMENT STATES AND IN OFFSHORE WATERS UNDER SECTION 274

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150.33 Criminal penalties.

AUTHORITY: Atomic Energy Act of 1954, secs. 11, 53, 81, 83, 84, 122, 161, 181, 223, 234, 274 (42 U.S.C. 2014, 2201, 2231, 2273, 2282, 2021); Energy Reorganization Act of 1974, sec. 201 (42 U.S.C. 5841); Nuclear Waste Policy Act of 1982, secs. 135, 141 (42 U.S.C. 10155, 10161); 44 U.S.C. 3504 note.

Sections 150.3, 150.15, 150.15a, 150.31, 150.32 also issued under Atomic Energy Act secs. 11e(2), 81, 83, 84 (42 U.S.C. 2014e(2), 2111, 2113, 2114).

Section 150.14 also issued under Atomic Energy Act sec. 53 (42 U.S.C. 2073).

Section 150.15 also issued under Nuclear Waste Policy Act sec. 135 (42 U.S.C. 10155, 10161).

Section 150.17a also issued under Atomic Energy Act sec. 122 (42 U.S.C. 2152).

Section 150.30 also issued under Atomic Energy Act sec. 234 (42 U.S.C. 2282).

SOURCE: 27 FR 1352, Feb. 14, 1962, unless otherwise noted.

GENERAL PROVISIONS

§ 150.1 Purpose.

The regulations in this part provide certain exemptions to persons in Agreement States from the licensing requirements contained in chapters 6, 7, and 8 of the Act and from the regulations of the Commission imposing requirements upon persons who receive, possess, use or transfer byproduct material, source, or special nuclear material in quantities not sufficient to form a critical mass; and to define activities in Agreement States and in offshore waters over which the regulatory authority of the Commission continues. The provisions of the Act, and regulations of the Commission apply to all persons in Agreement States and in offshore waters engaging in activities over which the regulatory authority of the Commission continues.

[46 FR 44151, Sept. 3, 1981]

§ 150.2 Scope.

The regulations in this part apply to all States that have entered into agreements with the Commission or the Atomic Energy Commission pursuant to subsection 274b of the Act. This part also gives notice to all persons who knowingly provide to any licensee, applicant for a license or certificate or quality assurance program approval, holder of a certificate or quality assurance program approval, contractor, or subcontractor, any components, equipment, materials, or other goods or services that relate to a licensee's, certificate holder's, quality assurance program approval holder's or applicant's activities subject to this part, that they may be individually subject to NRC enforcement action for violation of §§ 30.10, 40.10, 61.9b, 70.10, and 71.8.

[63 FR 1901, Jan. 13, 1998, as amended at 80 FR 63419, Oct. 20, 2015]

§ 150.3 Definitions.

As used in this part:

Act means the Atomic Energy Act of 1954 (68 Stat. 919) including any amendments thereto;

Agreement State means any State with which the Commission or the Atomic Energy Commission has entered into an effective agreement under subsection 274b of the Act. *Nonagreement State* means any other State.

Byproduct material means—

(1) Any radioactive material (except special nuclear material) yielded in, or made radioactive by, exposure to the radiation incident to the process of producing or using special nuclear material;

(2) The tailings or wastes produced by the extraction or concentration of uranium or thorium from ore processed primarily for its source material content, including discrete surface wastes resulting from uranium solution extraction processes. Underground ore bodies depleted by these solution extraction operations do not constitute ''byproduct material'' within this definition;

(3)(i) Any discrete source of radium-226 that is produced, extracted, or converted after extraction, before, on, or after August 8, 2005, for use for a commercial, medical, or research activity; or

(ii) Any material that—

(A) Has been made radioactive by use of a particle accelerator; and

(B) Is produced, extracted, or converted after extraction, before, on, or after August 8, 2005, for use for a commercial, medical, or research activity; and

(4) Any discrete source of naturally occurring radioactive material, other than source material, that—

(i) The Commission, in consultation with the Administrator of the Environmental Protection Agency, the Secretary of Energy, the Secretary of Homeland Security, and the head of any other appropriate Federal agency, determines would pose a threat similar to the threat posed by a discrete source of radium-226 to the public health and safety or the common defense and security; and

(ii) Before, on, or after August 8, 2005, is extracted or converted after extraction for use in a commercial, medical, or research activity.

Commission means the Nuclear Regulatory Commission or its duly authorized representatives;

Discrete source means a radionuclide that has been processed so that its concentration within a material has been purposely increased for use for commercial, medical, or research activities.

Foreign obligations means the commitments entered into by the U.S. Government under Atomic Energy Act (AEA) section 123 agreements for cooperation in the peaceful uses of atomic energy. Imports and exports of material or equipment pursuant to such agreements are subject to these commitments, which in some cases involve an exchange of information on imports, exports, retransfers with foreign governments, peaceful end-use assurances, and other conditions placed on the transfer of the material or equipment. The U.S. Government informs the licensee of obligations attached to material.

Government agency means any executive department, commission, independent establishment, corporation, wholly or partly owned by the United States of America which is an instrumentality of the United States, or any board, bureau, division, service, office, officer, authority, administration, or other establishment in the executive branch of the Government.

Offshore waters means that area of land and water, beyond Agreement States' Submerged Lands Act jurisdiction, on or above the U.S. Outer Continental Shelf.

Person means: (1) Any individual, corporation, partnership, firm, association, trust, estate, public or private institution, group, agency, and State or any political subdivision of any political entity within a State, and any legal successor, representative, agent, or agency of the foregoing other than Government agencies;

Production facility means:

(1) Any equipment or device determined by rule of the Commission to be capable of the production of special nuclear material in such quantity as to be of significance to the common defense and security, or in such manner as to affect the health and safety of the public, including a uranium enrichment facility; or

(2) Any important component part especially designed for such equipment or device as determined by the Commission.

Reconciliation means the process of evaluating and comparing licensee reports required under this part to the projected material balances generated by the Nuclear Materials Management and Safeguards System. This process is considered complete when the licensee resolves any differences between the reported and projected balances, including those listed for foreign obligated materials.

Source material means:

(1) Uranium, thorium, or any other material which is determined by the Commission pursuant to the provisions of section 61 of the Act to be source material; or

(2) Ores containing one or more of the foregoing materials, in such concentration as the Commission may by regulation determine from time to time;

Special nuclear material means:

(1) Plutonium, uranium 233, uranium enriched in the isotope 233 or in the isotope 235, and any other material which the Commission, pursuant to the provisions of section 51 of the Act, determines to be special nuclear material, but does not include source material; or

(2) Any material artificially enriched by any of the foregoing but does not include source material;

State means any State, the District of Columbia, Puerto Rico, and any territory or possession of the United States; and

Utilization facility means:

(1) Any equipment or device, except an atomic weapon, determined by rule of the Commission to be capable of making use of special nuclear material in such quantity as to be of significance to the common defense and security, or in such manner as to affect the health and safety of the public, or peculiarly adapted for making use of atomic energy in such quantity as to be of significance to the common defense and security, or in such manner as to affect the health and safety of the public; or

(2) Any important component part especially designed for such equipment or device as determined by the Commission.

Uranium enrichment facility means:

(1) Any facility used for separating the isotopes of uranium or enriching uranium in the isotope 235, except laboratory scale facilities designed or used for experimental or analytical purposes only; or

(2) Any equipment or device, or important component part especially designed for such equipment or device, capable of separating the isotopes of uranium or enriching uranium in the isotope 235.

[27 FR 1352, Feb. 14, 1962, as amended at 31 FR 15145, Dec. 2, 1966; 40 FR 8794, Mar. 3, 1975; 44 FR 55327, Sept. 26, 1979; 45 FR 18906, Mar. 24, 1980; 46 FR 44152, Sept. 3, 1981; 57 FR 18394, Apr. 30, 1992; 68 FR 10365, Mar. 5, 2003; 72 FR 55934, Oct. 1, 2007; 73 FR 32464, June 9, 2008]

§ 150.4 Communications.

Except where otherwise specified in this part, all communications and reports concerning the regulations in this part should be sent by mail addressed: ATTN: Document Control Desk, Director, Office of Nuclear Material Safety and Safeguards, and sent either by mail to the U.S. Nuclear Regulatory Commission, Washington, DC 20555–0001; by hand delivery to the NRC's offices at 11555 Rockville Pike, Rockville, Maryland; or, where practicable, by electronic submission, for example, via Electronic Information Exchange, or CD–ROM. Electronic submissions must be made in a manner that enables the NRC to receive, read, authenticate, distribute, and archive the submission, and process and retrieve it a single page at a time. Detailed guidance on making electronic submissions can be obtained by visiting the NRC's Web site at *http://www.nrc.gov/site-help/e-submittals.html;* by e-mail to *MSHD.Resource@nrc.gov;* or by writing the Office of Information Services, U.S. Nuclear Regulatory Commission, Washington, DC 20555–0001. The guidance discusses, among other topics, the formats the NRC can accept, the use of electronic signatures, and the treatment of nonpublic information.

[73 FR 5727, Jan. 31, 2008, as amended at 74 FR 62686, Dec. 1, 2009; 79 FR 75742, Dec. 19, 2014; 80 FR 74982, Dec. 1, 2015]

§ 150.5 Interpretations.

Except as specifically authorized by the Commission in writing, no interpretation of the meaning of the regulations in this part by an officer or employee of the Commission other than a written interpretation by the General Counsel will be recognized to be binding upon the Commission.

CONTINUED COMMISSION REGULATORY AUTHORITY IN OFFSHORE WATERS

§ 150.7 Persons in offshore waters not exempt.

Persons in offshore waters are not exempt from the Commission's licensing and regulatory requirements with respect to byproduct, source, and special nuclear materials.

[46 FR 44152, Sept. 3, 1981]

§ 150.8 Information collection requirements: OMB approval.

(a) The Nuclear Regulatory Commission has submitted the information collection requirements contained in this part to the Office of Management and Budget (OMB) for approval as required by the Paperwork Reduction Act (44 U.S.C. 3501 *et seq.*). The NRC may not conduct or sponsor, and a person is not required to respond to, a collection of information unless it displays a currently valid OMB control

number. OMB has approved the information collection requirements contained in this part under control number 3150–0032.

(b) The approved information collection requirements contained in this part appear in §§150.16, 150.17, 150.17a, 150.19, 150.20, and 150.31.

(c) This part contains information collection requirements in addition to those approved under the control number specified in paragraph (a) of this section. These information collection requirements and the control numbers under which they are approved are as follows:

(1) In §150.16, DOE/NRC FORM 741 and its computer-readable format are approved under control number 3150–0003.

(2) In §150.17, DOE/NRC Form 742 and its computer-readable format are approved under control number 3150–0004, and DOE/NRC Form 742C and its computer-readable format are approved under control number 3150–0058.

(3) In §150.17a, Form N–71 and associated forms are approved under OMB control number 3150–0056 and DOC/NRC Forms AP–1 or AP–A and associated forms are approved under OMB control number 0694–0135.

(4) In §150.20, NRC Form 241 is approved under control number 3150–0013.

[49 FR 19629, May 9, 1984, as amended at 62 FR 52190, Oct. 6, 1997; 73 FR 32464, June 9, 2008; 73 FR 78615, Dec. 23, 2008; 74 FR 1872, Jan. 14, 2009]

EXEMPTIONS IN AGREEMENT STATES

§ 150.10 Persons exempt.

Except as provided in §§150.15, 150.16, 150.17, 150.17a, and 150.19, any person in an Agreement State who manufactures, produces, receives, possesses, uses, or transfers byproduct material, source material, or special nuclear material in quantities not sufficient to form a critical mass is exempt from the requirements for a license contained in Chapters 6, 7, and 8 of the Act, regulations of the Commission imposing licensing requirements upon persons who manufacture, produce, receive, possess, use, or transfer such materials, and from regulations of the Commission applicable to licensees. The exemptions in this section do not apply to agencies of the Federal government as defined in §150.3.

[37 FR 9208, May 6, 1972, as amended at 45 FR 50718, July 31, 1980; 75 FR 73946, Nov. 30, 2010]

§ 150.11 Critical mass.

(a) For the purposes of this part, special nuclear material in quantities not sufficient to form a critical mass means uranium enriched in the isotope U-235 in quantities not exceeding 350 grams of contained U-235; uranium-233 in quantities not exceeding 200 grams; plutonium in quantities not exceeding 200 grams; or any combination of them in accordance with the following formula: For each kind of special nuclear material, determine the ratio between the quantity of that special nuclear material and the quantity specified above for the same kind of special nuclear material. The sum of such ratios for all kinds of special nuclear materials in combination shall not exceed unity. For example, the following quantities in combination would not exceed the limitation and are within the formula, as follows:

(175 (grams contained U-235 / 350) + (50 grams U-233) / 200) + (50 grams Pu / 200) = 1

(b) To determine whether the exemption granted in §150.10 applies to the receipt, possession or use of special nuclear material at any particular plant or other authorized location of use, a person shall include in the quantity computed according to paragraph (a) of this section the total quantity of special nuclear material which he is authorized to receive, possess or use at the plant or other location of use at any one time.

[27 FR 1352, Feb. 14, 1962, as amended at 30 FR 12069, Sept. 22, 1965]

CONTINUED COMMISSION REGULATORY AUTHORITY IN AGREEMENT STATES

§ 150.14 Commission regulatory authority for physical protection.

Persons in Agreement States possessing, using or transporting special nuclear material of low strategic significance in quantities greater than 15 grams of plutonium or uranium-233 or uranium-235 (enriched to 20 percent or

more in the U–235 isotope) or any combination greater than 15 grams when computed by the equation grams = grams uranium-235 + grams plutonium + grams uranium-233 shall meet the physical protection requirements of § 73.67 of 10 CFR part 73.

[44 FR 43285, July 24, 1979, as amended at 44 FR 68199, Nov. 28, 1979]

§ 150.15 Persons not exempt.

(a) Persons in agreement States are not exempt from the Commission's licensing and regulatory requirements with respect to the following activities:

(1) The construction and operation of any production or utilization facility. As used in this subparagraph, *operation* of a facility includes, but is not limited to (i) the storage and handling of radioactive wastes at the facility site by the person licensed to operate the facility, and (ii) the discharge of radioactive effluents from the facility site.

(2) The export from or import into the United States of byproduct, source, or special nuclear material, or of any production or utilization facility.

(3) The disposal into the ocean or sea of byproduct, source, or special nuclear waste materials, as defined in regulations or orders of the Commission. For purposes of this part, ocean or sea means any part of the territorial waters of the United States and any part of the international waters.

(4) The transfer, storage or disposal of radioactive waste material resulting from the separation in a production facility of special nuclear material from irradiated nuclear reactor fuel. This subparagraph does not apply to the transfer, storage or disposal of contaminated equipment.

(5) The disposal of such other byproduct, source, or special nuclear material as the Commission determines by regulation or order should, because of the hazards or potential hazards thereof, not be so disposed of without a license from the Commission.

(6) The transfer of possession or control by the manufacturer, processor, or producer of any equipment, device, commodity, or other product containing source material or byproduct material whose subsequent possession, use, transfer, and disposal by all other persons are exempted from licensing and regulatory requirements of the Commission under Parts 30 and 40 of this chapter.

(7) The storage of:

(i) Spent fuel in an independent spent fuel storage installation (ISFSI) licensed under part 72 of this chapter,

(ii) Spent fuel and high-level radioactive waste in a monitored retrievable storage installation (MRS) licensed under part 72 of this chapter, or

(iii) Greater than Class C waste, as defined in part 72 of this chapter, in an ISFSI or an MRS licensed under part 72 of this chapter; the GTCC waste must originate in, or be used by, a facility licensed under part 50 of this chapter.

(8) Greater than Class C waste, as defined in part 72 of this chapter, that originates in, or is used by, a facility licensed under part 50 of this chapter and is licensed under part 30 and/or part 70 of this chapter.

(b) Notwithstanding any exemptions provided in this part, the Commission may from time to time by rule, regulation, or order, require that the manufacturer, processor, or producer of any equipment, device, commodity, or other product containing source, byproduct, or special nuclear material shall not transfer possession or control of such product except pursuant to a license or an exemption from licensing issued by the Commission.

[27 FR 1352, Feb. 14, 1962, as amended at 34 FR 7369, May 7, 1969; 53 FR 31683, Aug. 19, 1988; 66 FR 51843, Oct. 11, 2001; 73 FR 63582, Oct. 24, 2008]

§ 150.15a Continued Commission authority pertaining to byproduct material.

(a) Prior to the termination of any Agreement State license for byproduct material as defined in § 150.3(c)(2) of this part, or for any activity that results in the production of such material, the Commission shall have made a determination that all applicable standards and requirements pertaining to such material have been met.

(b) After November 8, 1981, the Commission reserves the authority to establish minimum standards regarding reclamation, long term surveillance (*i.e.*, continued site observation, monitoring and, where necessary, maintenance), and ownership of byproduct

material as defined in §150.3(c)(2) of this part and of land used as a disposal site for such material. Such reserved authority includes:

(1) Authority to establish such terms and conditions as the Commission determines necessary to assure that, prior to termination of any license for byproduct material as defined in §150.3(c)(2) of this part, or for any activity that results in the production of such material, the licensee shall comply with decontamination, decommissioning, and reclamation standards prescribed by the Commission; and with ownership requirements for such materials and its disposal site;

(2) The authority to require that prior to termination of any license for byproduct material as defined in §150.3(c)(2) of this part, or for any activity that results in the production of such material, that title to such byproduct material and its disposal site be transferred to the United States or the State in which such material and land is located, at the option of the State (provided such option is exercised prior to termination of the license);

(3) The authority to permit use of the surface or subsurface estates, or both, of the land transferred to the United States or a State pursuant to paragraph (b)(2) of this section in a manner consistent with the provisions of the Uranium Mill Tailings Radiation Control Act of 1978, provided that the Commission determines that such use would not endanger the public health, safety, welfare, or the environment;

(4) The authority to require, in the case of a license for any activity that produces such byproduct material (which license was in effect on November 8, 1981) transfer of land and material pursuant to paragraph (b)(2), of this section, taking into consideration the status of such material and land and interests therein, and the ability of the licensee to transfer title and custody thereof to the United States or a State.

(5) The authority to require the Secretary of the Department of Energy, other Federal agency, or State, whichever has custody of such property and materials, to undertake such monitoring, maintenance and emergency measures as are necessary to protect the public health and safety and other actions at the Commission deems necessary to comply with the standards promulgated pursuant to the Uranium Mill Tailings Radiation Control Act of 1978; and

(6) The authority to enter into arrangements as may be appropriate to assure Federal long term surveillance (*i.e.*, continued site observation, monitoring, and where necessary, maintenance) of such disposal sites on land held in trust by the United States for any Indian Tribe or land owned by an Indian Tribe and subject to a restriction against alienation imposed by the United States.

[45 FR 65536, Oct. 3, 1980, as amended at 80 FR 74982, Dec. 1, 2015]

CONTINUED COMMISSION AUTHORITY IN AGREEMENT STATES

§ 150.16 Submission to Commission of nuclear material transaction reports.

(a)(1) Each person who transfers or receives special nuclear material in a quantity of one gram or more of contained uranium-235, uranium-233, or plutonium under an Agreement State license shall complete and submit in computer-readable format Nuclear Material Transaction Reports as specified in the instructions in NUREG/BR–0006 and NMMSS Report D–24, ''Personal Computer Data Input for NRC Licensees.'' In addition, each person who adjusts the inventory in any manner, other than for transfers and receipts, shall submit in computer-readable format Nuclear Material Transaction Reports as specified in the instructions in NUREG/BR–0006 and NMMSS Report D–24, ''Personal Computer Data Input for NRC Licensees.'' Each licensee who receives special nuclear material in a quantity of one gram or more of contained uranium-235, uranium-233, or plutonium from a foreign source, or who ships special nuclear material in a quantity of one gram or more of contained uranium-235, uranium-233, or plutonium to a foreign source, shall submit the licensee portion of this information as specified in the instructions in this part. The applicable foreign facility portion of the form must

be completed and submitted for imports. The foreign facility portion of the form must be completed for exports only if a significant shipper-receiver difference as described in §§74.31, 74.43, or 74.59 of this part, as applicable, is identified. Each person who transfers the material shall submit a Nuclear Material Transaction Report in computer-readable format as specified in the instructions no later than the close of business the next working day. Each person who receives special nuclear material shall submit a Nuclear Material Transaction Report in the computer-readable format as specified in the instructions within ten (10) days after the special nuclear material is received. Copies of these instructions may be obtained either by writing to the U.S. Nuclear Regulatory Commission, Division of Fuel Management, Washington, DC 20555–0001, or by e-mail to *RidsNmssFcss@nrc.gov*. These prescribed computer-readable formats replace the DOE/NRC Form 741 which have been previously submitted in paper form.

(2) Except as specified in §§150.17(d) and 150.17a, each person who, under an Agreement State specific license transfers, receives, or adjusts the inventory in any manner, of uranium or thorium source material with foreign obligations by one kilogram or more; imports or exports one kilogram or more of uranium or thorium source material; or uses one kilogram or more of any uranium or thorium source material in enrichment services, downblending uranium that has an initial enrichment of the U^{235} isotope of 10 percent or more, or in the fabrication of mixed-oxide fuels, shall complete and submit in computer-readable format Nuclear Material Transaction Reports as specified in the instructions in NUREG/BR–0006 and NMMSS Report D–24, ''Personal Computer Data Input for NRC Licensees.'' Each person who, under an Agreement State specific license exports one kilogram or more of uranium or thorium source material shall complete in the format listed above the licensee's portion of the Nuclear Material Transaction Report unless there is indication of loss, theft, or diversion as discussed in §40.64(c)(1) of this chapter is identified, in which case both the licensee's and the foreign facility's information shall be reported. For imports, the shipper's portion of the form must also be completed. Copies of the instructions may be obtained either by writing to the U.S. Nuclear Regulatory Commission, Division of Fuel Management, Washington, DC 20555–0001, or by e-mail to *RidsNmssFcss@nrc.gov*. Each licensee who transfers the material shall submit a Nuclear Material Transaction Report in computer-readable format as specified in the instructions no later than the close of business the next working day. Each licensee who receives the material shall submit a Nuclear Material Transaction Report in computer-readable format in accordance with instructions within ten (10) days after the material is received. The Commission's copy of the report must be submitted to the address specified in the instructions. These prescribed computer-readable forms replace the DOE/NRC Form 741 which have been previously submitted in paper form.

(b)(1) Each person who, pursuant to an Agreement State License, possesses 1 gram or more of contained uranium-235, uranium-233, or plutonium shall report immediately to the Regional Administrator of the appropriate NRC Regional Office listed in appendix A of part 73 of this chapter, by telephone, any theft or other unlawful diversion of special nuclear material which the licensee is licensed to possess or any incident in which an attempt has been made, or is believed to have been made, to commit a theft or unlawful diversion of special nuclear material.

(2) Within 15 days, the licensee shall follow the initial report with a written report that sets forth the details of the incident. The report must be sent by an appropriate method listed in §150.4 to the Director, Office of Nuclear Material Safety and Safeguards, with a copy to the appropriate NRC Regional Office, shown in appendix A to part 73 of this chapter.

(3) Subsequent to the submission of the written report required by this paragraph, each licensee shall promptly inform the Regional Administrator of the appropriate NRC Regional Office by means of a written report of any substantive additional information

which becomes available to the licensee concerning an attempted or apparent theft or unlawful diversion of special nuclear material.

[39 FR 39559, Nov. 8, 1974, as amended at 41 FR 16447, Apr. 19, 1976; 52 FR 31613, Aug. 21, 1987; 59 FR 35622, July 13, 1994; 68 FR 58825, Oct. 10, 2003; 73 FR 5727, Jan. 31, 2008; 73 FR 32464, June 9, 2008; 79 FR 75742, Dec. 19, 2014; 84 FR 65646, Nov. 29, 2019]

§ 150.17 Submission to Commission of nuclear material status reports.

(a) Except as specified in paragraph (d) of this section and § 150.17a, each person possessing, or who had possessed in the previous reporting period, at any one time and location, under an Agreement State license, special nuclear material in a quantity totaling one gram or more of contained uranium-235, uranium-233, or plutonium, shall complete and submit, in computer-readable format Material Balance Reports concerning special nuclear material that the licensee has received, produced, possessed, transferred, consumed, disposed of, or lost. This prescribed computer-readable report replaces the DOE/NRC Form 742 which has been previously submitted in paper form. The Physical Inventory Listing Report must be submitted with each Material Balance Report. This prescribed computer-readable report replaces the DOE/NRC Form 742C which has been previously submitted in paper form. Each licensee shall prepare and submit the reports described in this paragraph as specified in the instructions in NUREG/BR–0007 and NMMSS Report D–24 ''Personal Computer Data Input for NRC Licensees.'' Copies of these instructions may be obtained from the U.S. Nuclear Regulatory Commission, Division of Fuel Management, Washington, DC 20555–0001, or by e-mail to *RidsNmssFcss@nrc.gov*. Each person subject to this requirement shall submit a report no later than March 31 of each year. The Commission may, when good cause is shown, permit a licensee to submit Material Balance Reports and Physical Inventory Listing Reports at other times. Each licensee required to report material balance, and inventory information, as described in this part, shall resolve any discrepancies identified during the report review and reconciliation process within 30 calendar days of notification of a discrepancy identified by NRC.

(b) Except as specified in paragraph (d) of this section and § 150.17a, each person possessing, or who had possessed in the previous reporting period, at any one time and location, under an Agreement State license:

(1) One kilogram or more of uranium or thorium source material with foreign obligations, shall document holdings as of September 30 of each year and submit to the Commission within 30 days. Alternatively, these reports may be submitted with the licensee's material status reports on special nuclear material filed under part 72 or 74 of this chapter. This statement must be submitted to the address specified in the reporting instructions in NUREG/BR–0007, and include the Reporting Identification Symbol (RIS) assigned by the Commission.

(2) One kilogram or more of uranium or thorium source material in the operation of enrichment services, downblending uranium that has an initial enrichment of the U^{235} isotope of 10 percent or more, or in the fabrication of mixed-oxide fuels shall complete and submit, in computer-readable format, Material Balance and Physical Inventory Listing Reports concerning source material that the licensee has received, produced, possessed, transferred, consumed, disposed, or lost. Reports must be submitted for each Reporting Identification Symbol (RIS) account including all holding accounts. Each licensee shall prepare and submit these reports as specified in the instructions in NUREG/BR–0007 and NMMSS Report D–24, ''Personal Computer Data Input for NRC Licensees.'' These reports must document holdings as of September 30 of each year and submitted to the Commission within 30 days. Alternatively, these reports may be submitted with the licensee's material status reports on special nuclear material filed under part 72 or 74 of this chapter. Copies of the reporting instructions may be obtained by writing to the U.S. Nuclear Regulatory Commission, Division of Fuel Management, Washington, DC 20555–0001, or by e-mail to

RidsNmssFcss@nrc.gov. Each licensee required to report material balance, and inventory information, as described in this part, shall resolve any discrepancies identified during the report review and reconciliation process within 30 calendar days of the notification of a discrepancy identified by the NRC.

(c)(1) Except as specified in paragraph (d) of this section, each licensee who is authorized to possess uranium or thorium pursuant to a specific license shall notify the NRC Headquarters Operations Center by telephone, at the numbers listed in appendix A to part 73 of this chapter, of any incident in which an attempt has been made or is believed to have been made to commit a theft or unlawful diversion of more than 6.8 kilograms (kg) [15 pounds] of such material at any one time or more than 68 kg [150 pounds] of such material in any one calendar year.

(2) The licensee shall notify the NRC as soon as possible, but within 4 hours, of discovery of any incident in which an attempt has been made or is believed to have been made to commit a theft or unlawful diversion of such material.

(3) The initial notification shall be followed within a period of sixty (60) days by a written followup notification submitted in accordance with § 150.4. A copy of the written followup notification shall also be sent to the appropriate NRC Regional Office as shown in appendix A to part 73 of this chapter and to Director, Division of Security Policy, Office of Nuclear Security and Incident Response, U.S. Nuclear Regulatory Commission.

(4) Subsequent to the submission of the written followup notification required by this paragraph, the licensee shall promptly update the written followup notification, in accordance with this paragraph, with any substantive additional information, which becomes available to the licensee, concerning an attempted or apparent theft or unlawful diversion of source material.

(d) The reports described in paragraphs (a), (b), and (c) of this section are not required for:

(1) Processed ores containing less than five (5) percent of uranium or thorium, or any combination of uranium and thorium, by dry weight;

(2) Thorium contained in magnesium-thorium and tungsten-thorium alloys, if the thorium content in the alloys does not exceed 4 percent by weight;

(3) Chemical catalysts containing uranium depleted in the U-235 isotope to 0.4 percent or less, if the uranium content of the catalyst does not exceed 15 percent by weight; or

(4) Any source material contained in non-nuclear end use devices or components, including but not limited to permanently installed shielding, teletherapy, radiography, X-ray, accelerator devices, or munitions.

[35 FR 12196, July 30, 1970, as amended at 36 FR 10938, June 5, 1971; 41 FR 16448, Apr. 19, 1976; 49 FR 24708, June 15, 1984; 51 FR 9767, Mar. 21, 1986; 52 FR 31613, Aug. 21, 1987; 59 FR 35622, July 13, 1994; 60 FR 24553, May 9, 1995; 68 FR 10365, Mar. 5, 2003; 68 FR 58825, Oct. 10, 2003; 73 FR 32465, June 9, 2008; 74 FR 62686, Dec. 1, 2009; 75 FR 73946, Nov. 30, 2010; 79 FR 75742, Dec. 19, 2014; 84 FR 65646, Nov. 29, 2019]

§ 150.17a Compliance with requirements of US/IAEA Safeguards Agreement.

(a) For purposes of this section, the terms *facility*, *location*, and *Eligible Facilities List* have the meanings set forth in § 75.4 of this chapter.

(b) Each person who, under an Agreement State license, is authorized to possess byproduct, source, or special nuclear material is subject to the provisions of Part 75 of this chapter and shall comply with its applicable provisions. However, regarding these persons, the Commission will issue orders under section 274m of the Act instead of making license amendments; and, to the extent Part 75 of this chapter refers to license amendments and license conditions, these references shall be deemed, for purposes of this paragraph, to refer to orders under section 274m of the Act.

(c)(1) In response to a written request by the Commission, each applicant for an Agreement State license or certificate, and each recipient of an Agreement State license or certificate shall submit facility information, as described in § 75.10 of this chapter, on Form N–71 and associated forms, and site information on DOC/NRC Form AP–A and associated forms;

(2) As required by the Additional Protocol, shall submit location information described in § 75.11 of this chapter on DOC/NRC Form AP–1 and associated forms; and

(3) Shall permit verification thereof by the International Atomic Energy Agency (IAEA); and shall take other action as may be necessary to implement the US/IAEA Safeguards Agreement, as described in Part 75 of this chapter.

(d) In response to a written request by the Commission, each applicant for an Agreement State license or certificate, and each recipient of an Agreement State license or certificate shall submit facility information, as described in § 75.10 of this chapter, on Form N–71 and associated forms, and site information on DOC/NRC Form AP–A and associated forms; shall submit location information described in § 75.11 of this chapter on DOC/NRC Form AP–1 or AP–A and associated forms; shall permit verification thereof by the International Atomic Energy Agency (IAEA); and shall take other action as may be necessary to implement the US/IAEA Safeguards Agreement, as described in part 75 of this chapter.

[73 FR 78615, Dec. 23, 2008]

§ 150.19 Submission to Commission of tritium reports.

(a)–(b) [Reserved]

(c) Except as specified in paragraph (d) of this section, each person who, pursuant to an Agreement State license, is authorized to possess tritium shall report promptly to the appropriate NRC Regional Office as shown in appendix D of part 20 of this chapter by telephone and telegraph, mailgram, or facsimile any incident in which an attempt has been made or is believed to have been made to commit a theft or unlawful diversion of more than 10 curies of such material at any one time or 100 curies of such material in any one calendar year. The initial report must be followed within a period of fifteen days by a written report that sets forth the details of the incident and its consequences. The report must be submitted to the Director, Office of Nuclear material Safety and Safeguards, using an appropriate method listed in § 150.4, with a copy to the appropriate NRC Regional Office as shown in appendix A to part 73 of this chapter. Subsequent to the submission of the written report required by this paragraph, each person subject to the provisions of this paragraph shall promptly inform the appropriate NRC Regional Office by means of a written report of any substantive additional information, which becomes available to such person, concerning an attempted or apparent theft or unlawful diversion of tritium.

(d) The reports described in this section are not required for tritium possessed pursuant to a general license issued pursuant to regulations of an Agreement State equivalent to part 31 of this chapter or for tritium in spent fuel.

[37 FR 9208, May 6, 1972, as amended at 41 FR 16448, Apr. 19, 1976; 46 FR 55085, Nov. 6, 1981; 49 FR 24708, June 15, 1984; 52 FR 31613, Aug. 21, 1987; 68 FR 58825, Oct. 10, 2003; 73 FR 5727, Jan. 31, 2008; 79 FR 75742, Dec. 19, 2014]

RECIPROCITY

§ 150.20 Recognition of Agreement State licenses.

(a)(1) Provided that the provisions of paragraph (b) of this section have been met, any person who holds a specific license from an Agreement State, where the licensee maintains an office for directing the licensed activity and retaining radiation safety records, is granted a general license to conduct the same activity in—

(i) Non-Agreement States;

(ii) Areas of Exclusive Federal jurisdiction within Agreement States; and

(iii) Offshore waters.

(2) The provisions of paragraph (a)(1) of this section do not apply if the specific Agreement State license limits the authorized activity to a specific installation or location.

(b) Notwithstanding any provision to the contrary in any specific license issued by an Agreement State to a person engaging in activities in a non-Agreement State, in an area of exclusive Federal jurisdiction within an Agreement State, or in offshore waters under the general licenses provided in this section, the general licenses provided in this section are subject to all

the provisions of the Act, now or hereafter in effect, and to all applicable rules, regulations, and orders of the Commission including the provisions of §§30.7(a) through (f), 30.9, 30.10, 30.34, 30.41, and 30.51 through 30.63 of this chapter; §§40.7(a) through (f), 40.9, 40.10, 40.41, 40.51, 40.61 through 40.63, 40.71, and 40.81 of this chapter; §§70.7(a) through (f), 70.9, 70.10, 70.32, 70.42, 70.52, 70.55, 70.56, 70.60 through 70.62 of this chapter; §§74.11, 74.15, and 74.19 of this chapter; and to the provisions of 10 CFR parts 19, 20 and 71 and subparts C through H of part 34, §§39.15 and 39.31 through 39.77 of this chapter. In addition, any person engaging in activities in non-Agreement States, in areas of exclusive Federal jurisdiction within Agreement States, or in offshore waters under the general licenses provided in this section:

(1) Shall, at least 3 days before engaging in each activity for the first time in a calendar year, file a submittal containing an NRC Form 241, ''Report of Proposed Activities in Non-Agreement States,'' a copy of its Agreement State specific license, and the appropriate fee as prescribed in §170.31 of this chapter with the Regional Administrator of the U.S. Nuclear Regulatory Commission Regional Office listed on the NRC Form 241 and in appendix D to part 20 of this chapter for the Region in which the Agreement State that issued the license is located. If a submittal cannot be filed 3 days before engaging in activities under reciprocity, because of an emergency or other reason, the Regional Administrator may waive the 3-day time requirement provided the licensee:

(i) Informs the Region by telephone, facsimile, an NRC Form 241, or a letter of initial activities or revisions to the information submitted on the initial NRC Form 241;

(ii) Receives oral or written authorization for the activity from the region; and

(iii) Within 3 days after the notification, files an NRC Form 241, a copy of the Agreement State license, and the fee payment.

(2) Shall file an amended NRC Form 241 or letter with the Regional Administrator to request approval for changes in work locations, radioactive material, or work activities different from the information contained on the initial NRC Form 241.

(3) Shall not, in any non-Agreement State, in an area of exclusive Federal jurisdiction within an Agreement State, or in offshore waters, transfer or dispose of radioactive material possessed or used under the general licenses provided in this section, except by transfer to a person who is specifically licensed by the Commission to receive this material.

(4) Shall not, under the general license concerning activities in non-Agreement States or in areas of exclusive Federal jurisdiction within Agreement States, possess or use radioactive materials, or engage in the activities authorized in paragraph (a) of this section, for more than 180 days in any calendar year, except that the general license in paragraph (a) of this section concerning activities in offshore waters authorizes that person to possess or use radioactive materials, or engage in the activities authorized, for an unlimited period of time.

(5) Shall comply with all terms and conditions of the specific license issued by an Agreement State except such terms or conditions as are contrary to the requirements of this section.

[35 FR 7725, May 20, 1970]

EDITORIAL NOTE: For FEDERAL REGISTER citations affecting §150.20, see the List of CFR Sections Affected, which appears in the Finding Aids section of the printed volume and at *www.govinfo.gov*.

§150.21 Transportation of special nuclear material by aircraft.

Except as specifically approved by the Commission no shipment of special nuclear material in excess of 20 grams or 20 curies whichever is less of plutonium or uranium-233 shall be made by a licensee of an Agreement State in passenger aircraft.

[38 FR 3039, Feb. 1, 1973]

ENFORCEMENT

§150.30 Violations.

(a) The Commission may obtain an injunction or other court order to prevent a violation of the provisions of—

(1) The Atomic Energy Act of 1954, as amended;

(2) Title II of the Energy Reorganization Act of 1974, as amended; or

(3) A regulation or order issued pursuant to those Acts.

(b) The Commission may obtain a court order for the payment of a civil penalty imposed under section 234 of the Atomic Energy Act:

(1) For violations of—

(i) Sections 53, 57, 62, 63, 81, 82, 101, 103, 104, 107, or 109 of the Atomic Energy Act of 1954, as amended;

(ii) Section 206 of the Energy Reorganization Act;

(iii) Any rule, regulation, or order issued pursuant to the sections specified in paragraph (b)(1)(i) of this section;

(iv) Any term, condition, or limitation of any license issued under the sections specified in paragraph (b)(1)(i) of this section.

(2) For any violation for which a license may be revoked under section 186 of the Atomic Energy Act of 1954, as amended.

[57 FR 55081, Nov. 24, 1992]

§ 150.31 Requirements for Agreement State regulation of byproduct material.

(a) Prior to November 8, 1981, in the licensing and regulation of byproduct material, as defined in § 150.3(c)(2) of this part, or of any activity which results in the production of such byproduct material, an Agreement State shall require compliance with the requirements in appendix A of 10 CFR part 40 of this chapter to the maximum extent practicable.

(b) After November 8, 1981, in the licensing and regulation of byproduct material, as defined in § 150.3(c)(2) of this part, or of any activity which results in the production of such byproduct material, an Agreement State shall require:

(1) Compliance with requirements in appendix A of 10 CFR part 40 of this chapter established by the Commission pertaining to ownership of such byproduct material and disposal sites for such material; and

(2) Compliance with standards which shall be adopted by the Agreement State for the protection of the public health, safety, and the environment from hazards associated with such material which are equivalent, to the extent practicable, or more stringent than, standards in appendix A of 10 CFR part 40 of this chapter adopted and enforced by the Commission for the same purposes, including requirements and standards subsequently promulgated by the Commission and the Administrator of the Environmental Protection Agency pursuant to the Uranium Mill Tailing Radiation Control Act of 1978; and

(3) Compliance with procedures which:

(i) In the case of licenses, under State law include:

(A) An opportunity, after public notice, for written comments and a public hearing, with a transcript;

(B) An opportunity for cross examination; and

(C) A written determination by the appropriate State official which is based upon findings included in such determination and upon the evidence presented during the public comment period and which is subject to judicial review;

(ii) In the case of rulemaking, provide an opportunity for public participation through written comments or a public hearing and provide for judicial review of the rule;

(iii) Require for each licensing action which has a significant impact on the human environment a written analysis by the appropriate State agency (which shall be available to the public before the commencement of any such proceedings) of the impact of such licensing action, including any activities conducted pursuant thereto, on the environment. Such analysis shall include:

(A) An assessment of the radiological and nonradiological impacts to the public health of the activities to be conducted pursuant to such licenses;

(B) An assessment of any impact on any waterway and groundwater resulting from such activities;

(C) Consideration of alternatives, including alternative sites and engineering methods, to the activities to be conducted pursuant to such license; and

(D) Consideration of the long term impacts, including decommissioning, decontamination, and reclamation impacts associated with activities to be

conducted pursuant to such license, including the management of any byproduct material, as defined in §150.3(c)(2) of this part; and

(iv) Prohibit commencement of construction with respect to such material prior to complying with the provisions of paragraph (b)(3)(iii) of this section. As used in this paragraph:

(A) The term *commencement of construction* means taking any action defined as ''construction'' or any other activity at the site of a facility subject to the regulations in this part that has a reasonable nexus to radiological health and safety.

(B) The term *construction* means the installation of foundations, or in-place assembly, erection, fabrication, or testing for any structure, system, or component of a facility or activity subject to the regulations in this part that have a reasonable nexus to radiological safety or security. The term ''construction'' does not include:

(*1*) Changes for temporary use of the land for public recreational purposes;

(*2*) Site exploration, including necessary borings to determine foundation conditions or other preconstruction monitoring to establish background information related to the suitability of the site, the environmental impacts of construction or operation, or the protection of environmental values;

(*3*) Preparation of the site for construction of the facility, including clearing of the site, grading, installation of drainage, erosion and other environmental mitigation measures, and construction of temporary roads and borrow areas;

(*4*) Erection of fences and other access control measures that are not related to the safe use of or security of radiological materials subject to this part;

(*5*) Excavation;

(*6*) Erection of support buildings (e.g., construction equipment storage sheds, warehouse and shop facilities, utilities, concrete mixing plants, docking and unloading facilities, and office buildings) for use in connection with the construction of the facility;

(*7*) Building of service facilities (e.g., paved roads, parking lots, railroad spurs, exterior utility and lighting systems, potable water systems, sanitary sewerage treatment facilities, and transmission lines);

(*8*) Procurement or fabrication of components or portions of the proposed facility occurring at other than the final, in-place location at the facility; or

(*9*) Taking any other action which has no reasonable nexus to radiological health and safety.

(c) No Agreement State shall be required under paragraph (b) to conduct proceedings concerning any license or regulation which would duplicate proceedings conducted by the Commission.

(d) In adopting requirements pursuant to paragraph (b)(2) of this section, the State may adopt alternatives (including, where appropriate, site-specific alternatives) to the requirements adopted and enforced by the Commission for the same purpose if, after notice and opportunity for public hearing, the Commission determines that the alternatives will achieve a level of stabilization and containment of the sites concerned, and a level of protection for public health, safety and the environment from radiological and nonradiological hazards associated with the sites, which is equivalent to, to the extent practicable, or more stringent than the level which would be achieved by standards and requirements adopted and enforced by the Commission for the same purpose and any final standards promulgated by the Administrator of the Environmental Protection Agency in accordance with section 275. Alternative State requirements may take into account local or regional conditions, including geology, topography, hydrology and meteorology.

[45 FR 65537, Oct. 3, 1980; 50 FR 41866, Oct. 16, 1985, as amended at 76 FR 56966, Sept. 15, 2011]

§150.32 Funds for reclamation or maintenance of byproduct material.

(a) The total amount of funds an Agreement State collects, pursuant to a license for byproduct material as defined in §150.3(c)(2) of this part or for any activity that results in the production of such material, for reclamation or long term maintenance and monitoring of such material, shall after November 8, 1981, be transferred to the

United States if title and custody of such material and its disposal site is transferred to the United States upon termination of such license. Such funds include, but are not limited to, sums collected for long term surveillance (*i.e.*, continued site observation, monitoring and, where necessary, maintenance). Such funds do not however, include monies held as surety where no default has occurred and the reclamation or other bonded activity has been performed.

(b) If an Agreement State requires such payments for reclamation or long term surveillance (*i.e.*, continued site observation, monitoring and, where necessary, maintenance), the payments must, after November 8, 1981, be sufficient to ensure compliance with those standards established by the Commission pertaining to bonds, sureties, and financial arrangements to ensure adequate reclamation and long term management of such byproduct material and its disposal site.

[45 FR 65537, Oct. 3, 1980; 48 FR 40882, Sept. 12, 1983]

§ 150.33 Criminal penalties.

(a) Section 223 of the Atomic Energy Act of 1954, as amended, provides for criminal sanctions for willful violation of, attempted violation of, or conspiracy to violate, any regulation issued under sections 161b, 161i, or 161o of the Act. For purposes of section 223, all the regulations in part 150 are issued under one or more of sections 161b, 161i, or 161o, except for sections listed in paragraph (b) of this section.

(b) The regulations in part 150 that are not issued under sections 161b, 161i, or 161o for the purposes of section 223 are as follows: §§ 150.1, 150.2, 150.3, 150.4, 150.5, 150.7, 150.8, 150.10, 150.11, 150.15, 150.15a, 150.30, 150.31, 150.32, and 150.33.

[57 FR 55081, Nov. 24, 1992]

PART 160—TRESPASSING ON COMMISSION PROPERTY

Sec.
160.1 Purpose.
160.2 Scope.
160.3 Trespass.
160.4 Unauthorized introduction of weapons or dangerous materials.
160.5 Violations and penalties.
160.6 Posting.
160.7 Effective date of prohibition on designated locations.
160.8 Applicability of other laws.

AUTHORITY: Atomic Energy Act of 1954, secs. 161, 223, 229, 234 (42 U.S.C. 2201, 2273, 2278a, 2282); Energy Reorganization Act of 1974, sec. 201 (42 U.S.C. 5841).

SOURCE: 28 FR 8400, Aug. 16, 1963, unless otherwise noted.

§ 160.1 Purpose.

The regulations in this part are issued for the protection and security of facilities, installations and real property subject to the proprietory jurisdiction or administration, or in the custody of, the Nuclear Regulatory Commission.

[28 FR 8400, Aug. 16, 1963, as amended at 40 FR 8794, Mar. 3, 1975]

§ 160.2 Scope.

The regulations in this part apply to all facilities, installations, and real property subject to the jurisdiction or administration of the Nuclear Regulatory Commission or in its custody which have been posted with a notice of the prohibitions and penalties set forth in this part.

[40 FR 8794, Mar. 3, 1975]

§ 160.3 Trespass.

Unauthorized entry upon any facility, installation or real property subject to this part is prohibited.

§ 160.4 Unauthorized introduction of weapons or dangerous materials.

Unauthorized carrying, transporting, or otherwise introducing or causing to be introduced any dangerous weapon, explosive, or other dangerous instrument or material likely to produce substantial injury or damage to persons or property, into or upon any facility, installation or real property subject to this part, is prohibited.

§ 160.5 Violations and penalties.

(a) Whoever willfully violates either §§ 160.3 or 160.4 shall, upon conviction, be punishable by a fine of not more than $1,000.

(b) Whoever willfully violates either §§ 160.3 or 160.4 with respect to any facility, installation or real property enclosed by a fence, wall, floor, roof, or other structural barrier shall be guilty of a misdemeanor and, upon conviction, shall be punished by a fine of not to exceed $5,000 or imprisonment for not more than one year, or both.

§ 160.6 Posting.

Notices stating the pertinent prohibitions of §§ 160.3 and 160.4 and penalties of § 160.5 will be conspicuously posted at all entrances of each designated facility, installation or parcel of real property and at such intervals along the perimeter as will provide reasonable assurance of notice to persons about to enter.

§ 160.7 Effective date of prohibition on designated locations.

The prohibitions in §§ 160.3 and 160.4 shall take effect as to any facility, installation or real property on publication in the FEDERAL REGISTER of the notice designating the facility, installation or real property and posting in accordance with § 160.6.

§ 160.8 Applicability of other laws.

Nothing in this part shall be construed to affect the applicability of the provisions of State or other Federal laws.

PART 170—FEES FOR FACILITIES, MATERIALS, IMPORT AND EXPORT LICENSES, AND OTHER REGULATORY SERVICES UNDER THE ATOMIC ENERGY ACT OF 1954, AS AMENDED

GENERAL PROVISIONS

Sec.
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SCHEDULE OF FEES

170.21 Schedule of fees for production and utilization facilities, review of standard referenced design approvals, special projects, inspections and import and export licenses.
170.31 Schedule of fees for materials licenses and other regulatory services, including inspections, and import and export licenses.
170.32 Schedule of fees for health and safety, and safeguards inspections for materials licenses.

ENFORCEMENT

170.41 Failure by applicant or licensee to pay prescribed fees.
170.51 Right to review and appeal of prescribed fees.

AUTHORITY: Atomic Energy Act of 1954, secs. 11, 161(w) (42U.S.C. 2014, 2201(w)); Energy Reorganization Act of 1974, sec. 201 (42 U.S.C. 5841); 42 U.S.C. 2215; 31 U.S.C. 901, 902, 9701; 44 U.S.C. 3504 note.

SOURCE: 33 FR 10924, Aug. 1, 1968; 33 FR 11587, Aug. 15, 1968, unless otherwise noted.

GENERAL PROVISIONS

§ 170.1 Purpose.

The regulations in this part set out fees charged for licensing services, inspection services, and special projects rendered by the Nuclear Regulatory Commission as authorized under title V of the Independent Offices Appropriation Act, 1952 (31 U.S.C. 9701(a)).

[86 FR 32170, June 16, 2021]

§ 170.2 Scope.

Except for persons who apply for or hold the permits, licenses, or approvals exempted in § 170.11, the regulations in this part apply to a person who is:

(a) An applicant for or holder of a specific byproduct material license issued pursuant to parts 30 and 32 through 36 and 39 of this chapter;

(b) An applicant for or holder of a specific source material license issued pursuant to part 40 of this chapter;

(c) An applicant for or holder of a specific special nuclear material license issued pursuant to part 70 of this chapter;

(d) An applicant for or holder of specific approval of spent fuel casks and shipping containers issued pursuant to part 71 of this chapter;

(e) An applicant for or holder of a specific license to possess power reactor spent fuel and other radioactive materials associated with spent fuel storage in an independent spent fuel storage installation issued pursuant to part 72 of this chapter;

(f) An applicant for or holder of a specific approval of sealed sources and devices containing byproduct material, source material, or special nuclear material;

(g) An applicant for or holder of a production or utilization facility construction permit or operating license issued under 10 CFR part 50, or an early site permit, standard design certification, standard design approval, manufacturing license, or combined license issued under 10 CFR part 52;

(h) Required to have examinations and tests performed to qualify or requalify individuals as part 55 reactor operators;

(i) Required to have routine and nonroutine safety and safeguards inspections of activities licensed pursuant to the requirements of this chapter;

(j) [Reserved]

(k) Applying for or already has applied for review, under appendix Q to 10 CFR part 50 of a facility site before the submission of an application for a construction permit;

(l) Applying for or already has applied for review of a standardized spent fuel facility design; or

(m) Applying for or has applied for since March 23, 1978, review of an item under the category of special projects in this chapter that the Commission completes or makes whether or not in conjunction with a license application on file or that may be filed.

(n) An applicant for or holder of a license, approval, determination, or other authorization issued by the Commission pursuant to 10 CFR part 61.

(o) Requesting preapplication/licensing review assistance by consulting with the NRC and/or by filing preliminary analyses, documents, or reports.

(p) An applicant for or a holder of a specific import or export license issued pursuant to 10 CFR part 110.

(q) An Agreement State licensee who files for or is holder of a general license under the reciprocity provisions of 10 CFR 150.20.

(r) An applicant for or a holder of a certificate of compliance issued under 10 CFR Part 76.

(s) A holder of a general license granted by 10 CFR Part 31 who is required to register a device(s).

(t) An owner or operator of an unlicensed site in decommissioning being conducted under NRC oversight.

(u) Submitting a Touhy request, pursuant to 10 CFR 9.200 through 9.204, as defined in § 170.3.

[49 FR 21301, May 21, 1984, as amended at 52 FR 8242, Mar. 17, 1987; 54 FR 15399, Apr. 18, 1989; 56 FR 31499, July 10, 1991; 58 FR 7737, Feb. 9, 1993; 64 FR 31469, June 10, 1999; 66 FR 32469, June 14, 2001; 70 FR 30543, May 26, 2005; 72 FR 49565, Aug. 28, 2007; 81 FR 41186, June 24, 2016]

§ 170.3 Definitions.

As used in this part:

Act means the Atomic Energy Act of 1954 (68 Stat. 919) including any amendments thereto;

Agency support (corporate support and the IG) means resources located in executive, administrative, and other support offices such as the Office of the Commission, the Office of the Secretary, the Office of the Executive Director for Operations, the Offices of Congressional and Public Affairs, the Office of the Inspector General, the Office of Administration, the Office of the Chief Financial Officer, the Office of the Chief Information Officer, the Office of the Chief Human Capital Officer and the Office of Small Business and Civil Rights. These resources administer the corporate or shared efforts that more broadly support the activities of the agency. These resources also include information technology services, human capital services, financial management, and administrative support.

Agreement State means any State with which the Commission or the Atomic Energy Commission has entered into an effective agreement under subsection 274b of the Act. ''Nonagreement State'' means any other State.

Application means any request filed with the Commission for a permit, license, approval, exemption, certificate, other permission, or for any other service.

Byproduct material means—

(1) Any radioactive material (except special nuclear material) yielded in, or made radioactive by, exposure to the radiation incident to the process of producing or using special nuclear material;

(2)(i) Any discrete source of radium-226 that is produced, extracted, or converted after extraction, before, on, or after August 8, 2005, for use for a commercial, medical, or research activity; or

(ii) Any material that—

(A) Has been made radioactive by use of a particle accelerator; and

(B) Is produced, extracted, or converted after extraction, before, on, or after August 8, 2005, for use for a commercial, medical, or research activity; and

(3) Any discrete source of naturally occurring radioactive material, other than source material, that—

(i) The Commission, in consultation with the Administrator of the Environmental Protection Agency, the Secretary of Energy, the Secretary of Homeland Security, and the head of any other appropriate Federal agency, determines would pose a threat similar to the threat posed by a discrete source of radium-226 to the public health and safety or the common defense and security; and

(ii) Before, on, or after August 8, 2005, is extracted or converted after extraction for use in a commercial, medical, or research activity.

Government agency means any executive department, commission, independent establishment, corporation, wholly or partly owned by the United States of America which is an instrumentality of the United States, or any board, bureau, division, service, office, officer, authority, administration, or other establishment in the executive branch of the Government.

Greater Than Class C Waste or *GTCC Waste* means low-level radioactive waste that exceeds the concentration limits of radionuclides established for Class C waste in 10 CFR 61.55.

High Enriched Uranium means uranium enriched to 20 percent or greater in the isotope uranium-235.

Human use means the internal or external administration of byproduct, source, or special nuclear material, or the radiation therefrom, to human beings.

Inspections means:

(1) Routine inspections designed to evaluate the licensee's activities within the context of the licensee having primary responsibility for protection of the public and environment;

(2) Non-routine inspections in response or reaction to an incident, allegation, follow up to inspection deficiencies or inspections to determine implementation of safety issues. A non-routine or reactive inspection has the same purpose as the routine inspection;

(3) Reviews and assessments of licensee performance;

(4) Evaluations, such as those performed by Diagnostic Evaluation Teams; or

(5) Incident investigations.

Low Enriched Uranium means uranium enriched below 20 percent in the isotope uranium-235.

Manufacturing license means a license pursuant to Appendix M of part 52 of this chapter to manufacture a nuclear power reactor(s) to be operated at sites not identified in the license application.

Materials license means a license, certificate, approval, registration, or other form of permission issued or granted by the NRC under the regulations in 10 CFR Parts 30, 31 through 36, 39, 40, 61, 70, 72, and 76.

Mission-direct program salaries and benefits means resources that are allocated to perform core work activities committed to fulfilling the agency's mission of protecting the public health and safety, promoting the common defense and security, and protecting the environment. These resources include the core work activities assigned within the major program business lines (Operating Reactors, New Reactors, Fuel Facilities, Nuclear Materials Users, Decommissioning and Low-Level Waste, and Spent Fuel Storage and Transportation).

Mission-indirect program support means resources that support the core mission-direct activities. These resources include supervisory and non-supervisory support and mission travel and training. Supervisory and non-supervisory support and mission travel

and training resources assigned under direct business line structure are considered mission-indirect due to their supporting role of the core mission activities.

Non-power production or utilization facility means a production or utilization facility licensed under 10 CFR 50.21(a) or (c), or 10 CFR 50.22, as applicable, that is not a nuclear power reactor or production facility as defined under paragraphs (1) and (2) of the definition of ''production facility'' in 10 CFR 50.2.

Nonprofit educational institution means a public or nonprofit educational institution whose primary function is education, whose programs are accredited by a nationally recognized accrediting agency or association, who is legally authorized to provide a program of organized instruction or study, who provides an educational program for which it awards academic degrees, and whose educational programs are available to the public.

Nuclear reactor means an apparatus, other than an atomic weapon, designed or used to sustain nuclear fission in a self-supporting chain reaction.

Other production or utilization facility means a facility other than a nuclear reactor licensed by the Commission under the authority of section 103 or 104 of the Atomic Energy Act of 1954, as amended (the Act), and pursuant to the provisions of part 50 of this chapter.

Part 55 Reviews as used in this part means those services provided by the Commission to administer requalification and replacement examinations and tests for reactor operators licensed pursuant to 10 CFR part 55 of the Commission's regulations and employed by part 50 licensees. These services also include related items such as the preparation, review, and grading of the examinations and tests.

Person as used in this part has the same meaning as found in parts 30, 40, 50, and 70 of title 10 of the Code of Federal Regulations.

Power reactor means a nuclear reactor designed to produce electrical or heat energy licensed by the Commission under the authority of section 103 or subsection 104b of the Act and pursuant to the provisions of § 50.21(b) or § 50.22 of this chapter.

Production facility means:

(1) Any nuclear reactor designed or used primarily for the formation of plutonium or uranium-233; or

(2) Any facility designed or used for the separation of the isotopes of plutonium, except laboratory scale facilities designed or used for experimental or analytical purposes only; or

(3) Any facility designed or used for the processing of irradiated materials containing special nuclear material except:

(i) Laboratory scale facilities designed or used for experimental or analytical purposes;

(ii) Facilities in which the only special nuclear materials contained in the irradiated material to be processed are uranium enriched in the isotope U^{235} and plutonium produced by the irradiation, if the material processed contains not more than 10^{-6} grams of plutonium per gram of U^{235} and has fission product activity not in excess of 0.25 millicurie of fission products per gram of U^{235}; and

(iii) Facilities in which processing is conducted pursuant to a license issued under parts 30 and 70 of this chapter, or equivalent regulations of an Agreement State, for the receipt, possession, use, and transfer of irradiated special nuclear material, which authorizes the processing of the irradiated material on a batch basis for the separation of selected fission products and limits the process batch to not more than 100 grams of uranium enriched in the isotope 235 and not more than 15 grams of any other special nuclear material.

Research reactor means a nuclear reactor licensed by the Commission under the authority of subsection 104c of the Act and pursuant to the provisions of § 50.21(c) of this chapter for operation at a thermal power level of 10 megawatts or less, and which is not a *testing facility* as defined in this section.

The phrase *review is completed* as used in this part means that the review has been brought to an end, whether by reason of issuance of a permit, license, approval, certificate, exemption, or other form of permission, or whether the application is denied, withdrawn, suspended, or action on the application is postponed by the applicant.

Sealed source means any byproduct material that is encased in a capsule

designed to prevent leakage or escape of the byproduct material.

Small modular reactor (SMR) for the purposes of calculating fees, means the class of light-water power reactors having a licensed thermal power rating less than or equal to 1,000 MWt per module. This rating is based on the thermal power equivalent of a light-water SMR with an electrical power generating capacity of 300 MWe or less per module.

Small modular reactor site (SMR site) is the geographically bounded location of one or more SMRs and a basis on which SMR fees are calculated.

Source material means:

(1) Uranium or thorium, or any combination thereof, in any physical or chemical form; or

(2) Ores which contain by weight one-twentieth of one percent (0.05%) or more of

(i) Uranium,

(ii) Thorium, or

(iii) Any combination thereof. Source material does not include special nuclear material.

Special nuclear material means:

(1) Plutonium, uranium-233, uranium enriched in the isotope 233 or in the isotope 235, and any other material which the Commission, pursuant to the provisions of section 51 of the Act, determines to be special nuclear material but does not include source material; or

(2) Any material artificially enriched by any of the foregoing, but does not include source material.

Special projects means specific services provided by the Commission for which fees are not otherwise specified in this chapter. This includes, but is not limited to, contested hearings on licensing actions directly related to U.S. Government national security initiatives (as determined by the NRC), topical report reviews, early site reviews, waste solidification activities, activities related to the tracking and monitoring of shipment of classified matter, services provided to certify licensee, vendor, or other private industry personnel as instructors for 10 CFR part 55 reactor operators, reviews of financial assurance submittals that do not require a license amendment, reviews of responses to Confirmatory Action Letters, reviews of uranium recovery licensees' land-use survey reports, and reviews of 10 CFR 50.71 final safety analysis reports. Special projects does not include activities otherwise exempt from fees under this part. It also does not include those contested hearings for which a fee exemption is granted in § 170.11(a)(2), including those related to individual plant security modifications.

Testing facility means a nuclear reactor licensed by the Commission under the authority of subsection 104c of the Act and pursuant to the provisions of § 50.21(c) of this chapter for operation at:

(1) A thermal power level in excess of 10 megawatts; or

(2) A thermal power level in excess of 1 megawatt, if the reactor is to contain:

(i) A circulating loop through the core in which the applicant proposes to conduct fuel experiments; or

(ii) A liquid fuel loading; or

(iii) An experimental facility in the core in excess of 16 square inches in cross-section.

Touhy request means a request for NRC records or NRC testimony that is made pursuant to the NRC's regulations at 10 CFR 9.200 through 9.204.

Uranium enrichment facility means:

(1) Any facility used for separating the isotopes of uranium or enriching uranium in the isotope 235, except laboratory scale facilities designed or used for experimental or analytical purposes only; or

(2) Any equipment or device, or important component part especially designed for this equipment or device, capable of separating the isotopes of uranium or enriching uranium in the isotope 235.

Utilization facility means:

(1) Any nuclear reactor other than one designed or used primarily for the formation of plutonium or U–233; or

(2) An accelerator-driven subcritical operating assembly used for the irradiation of materials containing special nuclear material and described in the application assigned docket number 50–608.

[33 FR 10924, Aug. 1, 1968]

EDITORIAL NOTE: For FEDERAL REGISTER citations affecting § 170.3, see the List of CFR

Sections Affected, which appears in the Finding Aids section of the printed volume and at *www.govinfo.gov.*

§ 170.4 Interpretations.

Except as specifically authorized by the Commission in writing, no interpretation of the meaning of the regulations in this part by an officer or employee of the Commission other than a written interpretation by the General Counsel will be recognized to be binding upon the Commission.

§ 170.5 Communications.

All communications concerning the regulations in this part should be addressed to the NRC's Chief Financial Officer, either by mail to the U.S. Nuclear Regulatory Commission, Washington, DC 20555–0001; by hand delivery to the NRC's offices at 11555 Rockville Pike, Rockville, Maryland; or, where practicable, by electronic submission, for example, via Electronic Information Exchange, or CD-ROM. Electronic submissions must be made in a manner that enables the NRC to receive, read, authenticate, distribute, and archive the submission, and process and retrieve it a single page at a time. Detailed guidance on making electronic submissions can be obtained by visiting the NRC's Web site at *http://www.nrc.gov/site-help/e-submittals.html;* by e-mail to *MSHD.Resource@nrc.gov;* or by writing the Office of the Chief Information Officer, U.S. Nuclear Regulatory Commission, Washington, DC 20555–0001. The guidance discusses, among other topics, the formats the NRC can accept, the use of electronic signatures, and the treatment of nonpublic information.

[68 FR 58825, Oct. 10, 2003, as amended at 74 FR 62686, Dec. 1, 2009; 80 FR 74982, Dec. 1, 2015]

§ 170.8 Information collection requirements: OMB approval

This part contains no information collection requirements and therefore is not subject to the requirements of the Paperwork Reduction Act (44 U.S.C. 3501 *et seq.*).

[62 FR 52191, Oct. 6, 1997]

§ 170.11 Exemptions.

(a) No application fees, license fees, renewal fees, inspection fees, or special project fees shall be required for:

(1) A special project that is a request/report submitted to the NRC—

(i) In response to a Generic Letter or NRC Bulletin that does not result in an amendment to the license, does not result in the review of an alternate method or reanalysis to meet the requirements of the Generic Letter, or does not involve an unreviewed safety issue;

(ii) When the NRC, at the time the request/report is submitted, plans to use the information in response to an NRC request from the Office Director level or above to resolve an identified safety, safeguards, or environmental issue, or to assist the NRC in generic regulatory improvements or efforts (e.g., rules, regulatory guides, regulations, policy statements, generic letters, or bulletins).

(2) A contested hearing conducted by the NRC on a specific application or the authorizations and conditions of a specific NRC license, certificate, or other authorization, including those involving individual plant security modifications. This exemption does not apply to a contested hearing on a licensing action that the NRC determines directly involves a U.S. Government national security-related initiative, including those specifically associated with Presidentially-directed national security programs.

(3) [Reserved]

(4) A construction permit or license applied for by, or issued to, a non-profit educational institution for a production or utilization facility, other than a power reactor, or for the possession and use of byproduct material, source material, or special nuclear material. This exemption does not apply to those byproduct, source or special nuclear material licenses which authorize:

(i) Human use;

(ii) Remunerated services to other persons;

(iii) Distribution of byproduct material, source material, or special nuclear material or products containing byproduct material, source material or special nuclear material; or

(iv) Activities performed under a Government agency contract.

(5)–(8) [Reserved]

(9) Federally-owned and State-owned research reactors used primarily for educational training and academic research purposes. For purposes of this exemption, the term research reactor means a nuclear reactor that—

(i) Is licensed by the Nuclear Regulatory Commission under section 104c. of the Atomic Energy Act of 1954 (42 U.S.C. 2134(c)) at a thermal power level of 10 megawatts or less; and

(ii) If so licensed at a thermal power level of more than 1 megawatt, does not contain—

(A) A circulating loop through the core in which the licensee conducts fuel experiments;

(B) A liquid fuel loading; or

(C) An experimental facility in the core in excess of 16 square inches in cross-section.

(10) Activities of the Commission undertaken, pursuant to part 75 of this chapter, solely for the purpose of implementation of the US/IAEA Safeguards Agreement.

(11) [Reserved]

(12) A performance assessment or evaluation for which the licensee volunteers at the NRC's request and which is selected by the NRC.

(13) All fee exemption requests must be submitted in writing to the Chief Financial Officer in accordance with § 170.5, and the Chief Financial Officer will grant or deny such requests in writing.

(b) The Commission may, upon application by an interested person, or upon its own initiative, grant such exemptions from the requirements of this part as it determines are authorized by law and are otherwise in the public interest. Applications for exemption under this paragraph may include activities such as, but not limited to, the use of licensed materials for educational or noncommercial public displays or scientific collections.

(c) For purposes of paragraph (a)(1) of this section, a request for a fee exemption must be submitted to the CFO within 90 days of the date of the NRC's receipt of the work.

[33 FR 10924, Aug. 1, 1968]

EDITORIAL NOTE: For FEDERAL REGISTER citations affecting § 170.11, see the List of CFR Sections Affected, which appears in the Finding Aids section of the printed volume and at *www.govinfo.gov*.

§ 170.12 Payment of fees.

(a) *Application and registration fees.* Each application or registration for which a fee is prescribed must be accompanied by a remittance for the full amount of the fee. The NRC will not issue a new license or an amendment increasing the scope of an existing license to a higher fee category before receiving the prescribed application fee. The application or registration fee(s) is charged whether the Commission approves the application or not. The application or registration fee(s) is also charged if the applicant withdraws the application or registration.

(b) *Licensing fees.* (1) Licensing fees will be assessed to recover full costs for—

(i) The review of applications for new licenses and approvals;

(ii) The review of applications for amendments to and renewal of existing licenses or approvals;

(iii) Preapplication consultations and reviews; and

(iv) The full cost for project managers assigned to a specific plant or facility, excluding leave time and time spent on generic activities (such as rulemaking).

(2) Full cost fees will be determined based on the professional staff time and appropriate contractual support services expended. The full cost fees for professional staff time will be determined at the professional hourly rates in effect the time the service was provided. The full cost fees are payable upon notification by the Commission.

(3) The NRC intends to bill each applicant or licensee at quarterly intervals for all accumulated costs for each application the applicant or licensee has on file for NRC review, until the review is completed.

(4) The NRC intends to bill each applicant or licensee for costs related to project manager time on a quarterly basis. Each bill will identify the costs related to project manager time.

(c) *Inspection fees.* (1) Inspection fees will be assessed to recover full cost for each resident inspector (including the senior resident inspector), assigned to

a specific plant or facility. The fees assessed will be based on the number of hours that each inspector assigned to the plant or facility is in an official duty status (*i.e.*, all time in a non-leave status), excluding time spent by a resident inspector in support of activities at another site. The hours will be billed at the appropriate hourly rate established in 10 CFR 170.20. Resident inspectors' time related to a specific inspection will be included in the fee assessed for the specific inspection in accordance with paragraph (c)(2) of this section.

(2) Inspection fees will be assessed to recover the full cost for each specific inspection, including plant- or licensee-specific performance reviews and assessments, evaluations, and incident investigations. For inspections that result in the issuance of an inspection report, fees will be assessed for costs incurred up to approximately 30 days after the inspection report is issued. The costs for these inspections include preparation time, time on site, documentation time, and follow-up activities and any associated contractual service costs, but exclude the time involved in the processing and issuance of a notice of violation or civil penalty.

(3) The NRC intends to bill for resident inspectors' time and for specific inspections subject to full cost recovery on a quarterly basis. The fees are payable upon notification by the Commission.

(d) *Special project fees*. (1) All special projects performed by the Commission, unless otherwise exempt from fees or for which fees are otherwise specified in this part, will be assessed fees to recover the full cost of the service provided. Special projects means specific services provided by the Commission, including but not limited to—

(i) Topical reports;

(ii) Financial assurance submittals that do not require a license amendment;

(iii) Responses to Confirmatory Action Letters;

(iv) Uranium recovery licensees' land-use survey reports;

(v) 10 CFR 50.71 final safety analysis reports;

(vi) Contested hearings on licensing actions directly involving U.S Government national security initiatives, as determined by the NRC; and

(vii) Responses to Touhy requests that require the NRC staff to expend more than 50 hours of official time. Fees for Touhy requests will be billed at the appropriate hourly rate established in § 170.20.

(2) The NRC intends to bill each applicant or licensee at quarterly intervals until the special project is completed. Each bill will identify the special project, including any documents submitted for review or the specific contested hearing, and the related costs. The fees are payable upon notification by the Commission.

(e) *Part 55 review fees*. Fees for Part 55 review services are based on NRC time spent in administering the examinations and tests and any related contractual costs. The fees assessed will also include related activities such as preparing, reviewing, and grading of the examinations and tests. The NRC intends to bill the costs at quarterly intervals to the licensee employing the operators.

(f) *Method of payment*. All license fee payments are to be made payable to the U.S. Nuclear Regulatory Commission. The payments are to be made in U.S. funds by electronic funds transfer such as ACH (Automated Clearing House) using E.D.I. (Electronic Data Interchange), check, draft, money order, or credit card. Payment of invoices of $5,000 or more should be paid via ACH through NRC's Lockbox Bank at the address indicated on the invoice. Credit card payments should be made up to the limit established by the credit card bank at the address indicated on the invoice. Specific written instructions for making electronic payments and credit card payments may be obtained by contacting the License Fee and Accounts Receivable Branch at 301–415–7554. In accordance with Department of the Treasury requirements, refunds will only be made upon receipt of information on the payee's financial institution and bank accounts.

(g) *Collection of underpayment of fees.* The NRC is entitled to collect any underpayment of fees as a result of an error by the NRC.

[64 FR 31469, June 10, 1999, as amended at 65 FR 11204, Mar. 2, 2000; 65 FR 36959, June 12, 2000; 66 FR 32469, June 14, 2001; 67 FR 64037, Oct. 17, 2002; 72 FR 31420, June 6, 2007; 79 FR 37144, June 30, 2014; 81 FR 41186, June 24, 2016]

§ 170.20 Average cost per professional staff-hour.

Fees for permits, licenses, amendments, renewals, special projects, 10 CFR part 55 re-qualification and replacement examinations and tests, other required reviews, approvals, and inspections under §§ 170.21 and 170.31 will be calculated using the professional staff-hour rate of $288 per hour.

[83 FR 29645, June 25, 2018, as amended at 85 FR 37270, June 19, 2020; 86 FR 32170, June 16, 2021]

SCHEDULE OF FEES

§ 170.21 Schedule of fees for production and utilization facilities, review of standard referenced design approvals, special projects, inspections and import and export licenses.

Applicants for construction permits, manufacturing licenses, operating licenses, import and export licenses, approvals of facility standard reference designs, re-qualification and replacement examinations for reactor operators, and special projects and holders of construction permits, licenses, and other approvals shall pay fees for the following categories of services:

TABLE 1 TO § 170.21—SCHEDULE OF FACILITY FEES

[See footnotes at end of table]

Facility categories and type of fees	Fees [1 2]
A. Nuclear Power Reactors:	
Application for Construction Permit	Full Cost.
Early Site Permit, Construction Permit, Combined License, Operating License	Full Cost.
Amendment, Renewal, Dismantling-Decommissioning and Termination, Other Approvals	Full Cost.
Inspections [3]	Full Cost.
B. Standard Reference Design Review:ROW≤	
Preliminary Design Approvals, Final Design Approvals, Certification	Full Cost.
Amendment, Renewal, Other Approvals	Full Cost.
C. Test Facility/Research Reactor/Critical Facility:	
Application for Construction Permit	Full Cost.
Construction Permit, Operating License	Full Cost.
Amendment, Renewal, Dismantling-Decommissioning and Termination, Other Approvals	Full Cost.
Inspections [3]	Full Cost.
D. Manufacturing License:	
Application for Construction	Full Cost.
Preliminary Design Approval, Final Design Approval	Full Cost.
Amendment Renewal, Other Approvals	Full Cost.
Inspections [3]	Full Cost.
E. [Reserved]	
F. [Reserved]	
G. Other Production or Utilization Facility:	
Application for Construction Permit	Full Cost.
Construction Permit, Operating License	Full Cost.
Amendment, Renewal, Other Approvals	Full Cost.
Inspections [3]	Full Cost.
H. Production or Utilization Facility Permanently Closed Down:	
Inspections [3]	Full Cost.
I. Part 55 Reviews:	
Requalification and Replacement Examinations for Reactors Operators	Full Cost.
J. Special Projects:	
Approvals and preapplication/licensing activities	Full Cost.
Inspections [3]	Full Cost.
Contested hearings on licensing actions directly related to U.S. Government national security initiatives.	Full Cost.
Touhy requests [5]	Full Cost.
K. Import and export licenses:	

TABLE 1 TO § 170.21—SCHEDULE OF FACILITY FEES—Continued

[See footnotes at end of table]

Facility categories and type of fees	Fees [1 2]
Licenses for the import and export only of production or utilization facilities or the export only of components for production or utilization facilities issued under 10 CFR part 110.	
1. Application for import or export of production or utilization facilities [4] (including reactors and other facilities) and exports of components requiring Commission and Executive Branch review, for example, actions under 10 CFR 110.40(b).	
Application—new license, or amendment; or license exemption request	$20,200
2. Application for export of reactor and other components requiring Executive Branch review, for example, those actions under 10 CFR 110.41(a).	
Application—new license, or amendment; or license exemption request	10,100
3. Application for export of components requiring the assistance of the Executive Branch to obtain foreign government assurances.	
Application—new license, or amendment; or license exemption request	7,200
4. Application for export of facility components and equipment not requiring Commission or Executive Branch review, or obtaining foreign government assurances.	
Application—new license, or amendment; or license exemption request	4,900
5. Minor amendment of any active export or import license, for example, to extend the expiration date, change domestic information, or make other revisions which do not involve any substantive changes to license terms or conditions or to the type of facility or component authorized for export and, therefore, do not require in-depth analysis or review or consultation with the Executive Branch, U.S. host state, or foreign government authorities.	
Minor amendment to license	4,300

[1] Fees will be charged for approvals issued under a specific exemption provision of the Commission's regulations under title 10 of the *Code of Federal Regulations* (*e.g.*, 10 CFR 50.12, 10 CFR 73.5) and any other sections in effect now or in the future, regardless of whether the approval is in the form of a license amendment, letter of approval, safety evaluation report, or other form.

[2] Full cost fees will be determined based on the professional staff time and appropriate contractual support services expended. For applications currently on file and for which fees are determined based on the full cost expended for the review, the professional staff hours expended for the review of the application up to the effective date of the final rule will be determined at the professional rates in effect when the service was provided.

[3] Inspections covered by this schedule are both routine and non-routine safety and safeguards inspections performed by NRC for the purpose of review or follow-up of a licensed program. Inspections are performed through the full term of the license to ensure that the authorized activities are being conducted in accordance with the Atomic Energy Act of 1954, as amended, other legislation, Commission regulations or orders, and the terms and conditions of the license. Non-routine inspections that result from third-party allegations will not be subject to fees.

[4] Imports only of major components for end-use at NRC-licensed reactors are authorized under NRC general import license in 10 CFR 110.27.

[5] Full cost fees will be assessed once NRC work on a Touhy request exceeds 50 hours, in accordance with § 170.12(d).

[53 FR 52648, Dec. 29, 1988]

EDITORIAL NOTE: For FEDERAL REGISTER citations affecting § 170.21, see the List of CFR Sections Affected, which appears in the Finding Aids section of the printed volume and at *www.govinfo.gov*.

§ 170.31 Schedule of fees for materials licenses and other regulatory services, including inspections, and import and export licenses.

Applicants for materials licenses, import and export licenses, and other regulatory services, and holders of materials licenses or import and export licenses shall pay fees for the following categories of services. For those fee categories identified to be subject to full cost fees, full cost fees will be assessed for all licensing and inspection activities, unless otherwise indicated.

TABLE 1 TO § 170.31—SCHEDULE OF MATERIALS FEES

[See footnotes at end of table]

Category of materials licenses and type of fees [1]	Fees [2 3]
1. Special nuclear material: [11]	
A. (1) Licenses for possession and use of U–235 or plutonium for fuel fabrication activities.	
(a) Strategic Special Nuclear Material (High Enriched Uranium) [6] [Program Code(s): 21213].	Full Cost.
(b) Low Enriched Uranium in Dispersible Form Used for Fabrication of Power Reactor Fuel [6] [Program Code(s): 21210].	Full Cost.
(2) All other special nuclear materials licenses not included in Category 1.A. (1) which are licensed for fuel cycle activities [6].	
(a) Facilities with limited operations [6] [Program Code(s): 21240, 21310, 21320]	Full Cost.
(b) Gas centrifuge enrichment demonstration facilities.[6] [Program Code(s): 21205]	Full Cost.
(c) Others, including hot cell facilities.[6] [Program Code(s): 21130, 21133]	Full Cost.

TABLE 1 TO § 170.31—SCHEDULE OF MATERIALS FEES—Continued

[See footnotes at end of table]

Category of materials licenses and type of fees [1]	Fees [2 3]
B. Licenses for receipt and storage of spent fuel and reactor-related Greater than Class C (GTCC) waste at an independent spent fuel storage installation (ISFSI) [6] [Program Code(s): 23200].	Full Cost.
C. Licenses for possession and use of special nuclear material of less than a critical mass as defined in § 70.4 of this chapter in sealed sources contained in devices used in industrial measuring systems, including x-ray fluorescence analyzers.[4].	
Application [Program Code(s): 22140]	$1,300.
D. All other special nuclear material licenses, except licenses authorizing special nuclear material in sealed or unsealed form in combination that would constitute a critical mass, as defined in § 70.4 of this chapter, for which the licensee shall pay the same fees as those under Category 1.A.[4].	
Application [Program Code(s): 22110, 22111, 22120, 22131, 22136, 22150, 22151, 22161, 22170, 23100, 23300, 23310].	$2,700.
E. Licenses or certificates for construction and operation of a uranium enrichment facility [6] [Program Code(s): 21200].	Full Cost.
F. Licenses for possession and use of special nuclear material greater than critical mass as defined in § 70.4 of this chapter, for development and testing of commercial products, and other non-fuel-cycle activities.[4 6] [Program Code(s): 22155].	Full Cost.
2. Source material: [11]	
A. (1) Licenses for possession and use of source material for refining uranium mill concentrates to uranium hexafluoride or for deconverting uranium hexafluoride in the production of uranium oxides for disposal.[6] [Program Code(s): 11400].	Full Cost.
(2) Licenses for possession and use of source material in recovery operations such as milling, *in-situ* recovery, heap-leaching, ore buying stations, ion-exchange facilities, and in processing of ores containing source material for extraction of metals other than uranium or thorium, including licenses authorizing the possession of byproduct waste material (tailings) from source material recovery operations, as well as licenses authorizing the possession and maintenance of a facility in a standby mode [6].	
(a) Conventional and Heap Leach facilities [6] [Program Code(s): 11100]	Full Cost.
(b) Basic *In Situ* Recovery facilities [6] [Program Code(s): 11500]	Full Cost.
(c) Expanded *In Situ* Recovery facilities [6] [Program Code(s): 11510]	Full Cost.
(d) *In Situ* Recovery Resin facilities [6] [Program Code(s): 11550]	Full Cost.
(e) Resin Toll Milling facilities [6] [Program Code(s): 11555]	Full Cost.
(f) Other facilities [6] [Program Code(s): 11700]	Full Cost.
(3) Licenses that authorize the receipt of byproduct material, as defined in Section 11e.(2) of the Atomic Energy Act, from other persons for possession and disposal, except those licenses subject to the fees in Category 2.A.(2) or Category 2.A.(4) [6] [Program Code(s): 11600, 12000].	Full Cost.
(4) Licenses that authorize the receipt of byproduct material, as defined in Section 11e.(2) of the Atomic Energy Act, from other persons for possession and disposal incidental to the disposal of the uranium waste tailings generated by the licensee's milling operations, except those licenses subject to the fees in Category 2.A.(2) [6] [Program Code(s): 12010].	Full Cost.
B. Licenses which authorize the possession, use, and/or installation of source material for shielding.[7 8].	
Application [Program Code(s): 11210]	$1,300.
C. Licenses to distribute items containing source material to persons exempt from the licensing requirements of part 40 of this chapter.	
Application [Program Code(s): 11240]	$6,200.
D. Licenses to distribute source material to persons generally licensed under part 40 of this chapter..	
Application [Program Code(s): 11230, 11231]	$2,900.
E. Licenses for possession and use of source material for processing or manufacturing of products or materials containing source material for commercial distribution.	
Application [Program Code(s): 11710]	$2,700.
F. All other source material licenses..	
Application [Program Code(s): 11200, 11220, 11221, 11300, 11800, 11810, 11820]	$2,700.
3. Byproduct material: [11]	
A. Licenses of broad scope for the possession and use of byproduct material issued under parts 30 and 33 of this chapter for processing or manufacturing of items containing byproduct material for commercial distribution. Number of locations of use: 1–5.	
Application [Program Code(s): 03211, 03212, 03213]	$13,500.
(1). Licenses of broad scope for the possession and use of byproduct material issued under parts 30 and 33 of this chapter for processing or manufacturing of items containing byproduct material for commercial distribution. Number of locations of use: 6–20.	
Application [Program Code(s): 04010, 04012, 04014]	$17,900.
(2). Licenses of broad scope for the possession and use of byproduct material issued under parts 30 and 33 of this chapter for processing or manufacturing of items containing byproduct material for commercial distribution. Number of locations of use: More than 20.	
Application [Program Code(s): 04011, 04013, 04015]	$22,400.

TABLE 1 TO § 170.31—SCHEDULE OF MATERIALS FEES—Continued

[See footnotes at end of table]

Category of materials licenses and type of fees [1]	Fees [2 3]
B. Other licenses for possession and use of byproduct material issued under part 30 of this chapter for processing or manufacturing of items containing byproduct material for commercial distribution. Number of locations of use: 1–5.	
Application [Program Code(s): 03214, 03215, 22135, 22162]	$3,700.
(1). Other licenses for possession and use of byproduct material issued under part 30 of this chapter for processing or manufacturing of items containing byproduct material for commercial distribution. Number of locations of use: 6–20.	
Application [Program Code(s): 04110, 04112, 04114, 04116]	$5,000.
(2). Other licenses for possession and use of byproduct material issued under part 30 of this chapter for processing or manufacturing of items containing byproduct material for commercial distribution. Number of locations of use: More than 20.	
Application [Program Code(s): 04111, 04113, 04115, 04117]	$6,200.
C. Licenses issued under §§ 32.72 and/or 32.74 of this chapter that authorize the processing or manufacturing and distribution or redistribution of radiopharmaceuticals, generators, reagent kits, and/or sources and devices containing byproduct material. This category does not apply to licenses issued to nonprofit educational institutions whose processing or manufacturing is exempt under § 170.11(a)(4). Number of locations of use: 1–5.	
Application [Program Code(s): 02500, 02511, 02513]	$5,400.
(1). Licenses issued under §§ 32.72 and/or 32.74 of this chapter that authorize the processing or manufacturing and distribution or redistribution of radiopharmaceuticals, generators, reagent kits, and/or sources and devices containing byproduct material. This category does not apply to licenses issued to nonprofit educational institutions whose processing or manufacturing is exempt under § 170.11(a)(4). Number of locations of use: 6–20.	
Application [Program Code(s): 04210, 04212, 04214]	$7,200.
(2). Licenses issued under §§ 32.72 and/or 32.74 of this chapter that authorize the processing or manufacturing and distribution or redistribution of radiopharmaceuticals, generators, reagent kits, and/or sources and devices containing byproduct material. This category does not apply to licenses issued to nonprofit educational institutions whose processing or manufacturing is exempt under § 170.11(a)(4). Number of locations of use: More than 20.	
Application [Program Code(s): 04211, 04213, 04215]	$8,900.
D. [Reserved]	N/A.
E. Licenses for possession and use of byproduct material in sealed sources for irradiation of materials in which the source is not removed from its shield (self-shielded units).	
Application [Program Code(s): 03510, 03520]	$3,300.
F. Licenses for possession and use of less than or equal to 10,000 curies of byproduct material in sealed sources for irradiation of materials in which the source is exposed for irradiation purposes. This category also includes underwater irradiators for irradiation of materials where the source is not exposed for irradiation purposes.	
Application [Program Code(s): 03511]	$6,700.
G. Licenses for possession and use of greater than 10,000 curies of byproduct material in sealed sources for irradiation of materials in which the source is exposed for irradiation purposes. This category also includes underwater irradiators for irradiation of materials where the source is not exposed for irradiation purposes.	
Application [Program Code(s): 03521]	$64,300.
H. Licenses issued under subpart A of part 32 of this chapter to distribute items containing byproduct material that require device review to persons exempt from the licensing requirements of part 30 of this chapter. The category does not include specific licenses authorizing redistribution of items that have been authorized for distribution to persons exempt from the licensing requirements of part 30 of this chapter.	
Application [Program Code(s): 03254, 03255, 03257]	$6,900.
I. Licenses issued under subpart A of part 32 of this chapter to distribute items containing byproduct material or quantities of byproduct material that do not require device evaluation to persons exempt from the licensing requirements of part 30 of this chapter. This category does not include specific licenses authorizing redistribution of items that have been authorized for distribution to persons exempt from the licensing requirements of part 30 of this chapter..	
Application [Program Code(s): 03250, 03251, 03253, 03256]	$15,300.
J. Licenses issued under subpart B of part 32 of this chapter to distribute items containing byproduct material that require sealed source and/or device review to persons generally licensed under part 31 of this chapter. This category does not include specific licenses authorizing redistribution of items that have been authorized for distribution to persons generally licensed under part 31 of this chapter.	
Application [Program Code(s): 03240, 03241, 03243]	$2,100.
K. Licenses issued under subpart B of part 32 of this chapter to distribute items containing byproduct material or quantities of byproduct material that do not require sealed source and/or device review to persons generally licensed under part 31 of this chapter. This category does not include specific licenses authorizing redistribution of items that have been authorized for distribution to persons generally licensed under part 31 of this chapter.	
Application [Program Code(s): 03242, 03244]	$1,200.

TABLE 1 TO § 170.31—SCHEDULE OF MATERIALS FEES—Continued

[See footnotes at end of table]

Category of materials licenses and type of fees [1]	Fees [2 3]
L. Licenses of broad scope for possession and use of byproduct material issued under parts 30 and 33 of this chapter for research and development that do not authorize commercial distribution. Number of locations of use: 1–5.	
Application [Program Code(s): 01100, 01110, 01120, 03610, 03611, 03612, 03613]	$5,700.
(1) Licenses of broad scope for possession and use of byproduct material issued under parts 30 and 33 of this chapter for research and development that do not authorize commercial distribution. Number of locations of use: 6–20..	
Application [Program Code(s): 04610, 04612, 04614, 04616, 04618, 04620, 04622].	$7,500.
(2) Licenses of broad scope for possession and use of byproduct material issued under parts 30 and 33 of this chapter for research and development that do not authorize commercial distribution. Number of locations of use: More than 20.	
Application [Program Code(s): 04611, 04613, 04615, 04617, 04619, 04621, 04623].	$9,400.
M. Other licenses for possession and use of byproduct material issued under part 30 of this chapter for research and development that do not authorize commercial distribution.	
Application [Program Code(s): 03620]	$8,600.
N. Licenses that authorize services for other licensees, except: (1) Licenses that authorize only calibration and/or leak testing services are subject to the fees specified in fee Category 3.P.; and (2) Licenses that authorize waste disposal services are subject to the fees specified in fee Categories 4.A., 4.B., and 4.C.	
Application [Program Code(s): 03219, 03225, 03226]	$9,200.
O. Licenses for possession and use of byproduct material issued under part 34 of this chapter for industrial radiography operations. Number of locations of use: 1–5.	
Application [Program Code(s): 03310, 03320]	$9,200.
(1). Licenses for possession and use of byproduct material issued under part 34 of this chapter for industrial radiography operations. Number of locations of use: 6–20.	
Application [Program Code(s): 04310, 04312]	$12,200.
(2). Licenses for possession and use of byproduct material issued under part 34 of this chapter for industrial radiography operations. Number of locations of use: More than 20.	
Application [Program Code(s): 04311, 04313]	$15,300.
P. All other specific byproduct material licenses, except those in Categories 4.A. through 9.D.[9] Number of locations of use: 1–5.	
Application [Program Code(s): 02400, 02410, 03120, 03121, 03122, 03123, 03124, 03130, 03140, 03220, 03221, 03222, 03800, 03810, 22130].	$6,600.
(1). All other specific byproduct material licenses, except those in Categories 4.A. through 9.D.[9] Number of locations of use: 6–20.	
Application [Program Code(s): 04410, 04412, 04414, 04416, 04418, 04420, 04422, 04424, 04426, 04428, 04430, 04432, 04434, 04436, 04438].	$8,800.
(2). All other specific byproduct material licenses, except those in Categories 4.A. through 9.D.[9] Number of locations of use: More than 20.	
Application [Program Code(s): 04411, 04413, 04415, 04417, 04419, 04421, 04423, 04425, 04427, 04429, 04431, 04433, 04435, 04437, 04439].	$10,900.
Q. Registration of a device(s) generally licensed under part 31 of this chapter. Registration	$800.
R. Possession of items or products containing radium-226 identified in § 31.12 of this chapter which exceed the number of items or limits specified in that section [5].	
1. Possession of quantities exceeding the number of items or limits in § 31.12(a)(4) or (5) of this chapter but less than or equal to 10 times the number of items or limits specified.	
Application [Program Code(s): 02700]	$2,600.
2. Possession of quantities exceeding 10 times the number of items or limits specified in § 31.12(a)(4) or (5) of this chapter.	
Application [Program Code(s): 02710]	$2,600.
S. Licenses for production of accelerator-produced radionuclides.	
Application [Program Code(s): 03210]	$14,700.
4. Waste disposal and processing: [11]	
A. Licenses specifically authorizing the receipt of waste byproduct material, source material, or special nuclear material from other persons for the purpose of contingency storage or commercial land disposal by the licensee; or licenses authorizing contingency storage of low-level radioactive waste at the site of nuclear power reactors; or licenses for receipt of waste from other persons for incineration or other treatment, packaging of resulting waste and residues, and transfer of packages to another person authorized to receive or dispose of waste material.	
Application [Program Code(s): 03231, 03233, 03236, 06100, 06101]	Full Cost.
B. Licenses specifically authorizing the receipt of waste byproduct material, source material, or special nuclear material from other persons for the purpose of packaging or repackaging the material. The licensee will dispose of the material by transfer to another person authorized to receive or dispose of the material.	
Application [Program Code(s): 03234]	$7,200.

TABLE 1 TO § 170.31—SCHEDULE OF MATERIALS FEES—Continued

[See footnotes at end of table]

Category of materials licenses and type of fees [1]	Fees [2 3]
C. Licenses specifically authorizing the receipt of prepackaged waste byproduct material, source material, or special nuclear material from other persons. The licensee will dispose of the material by transfer to another person authorized to receive or dispose of the material.	
Application [Program Code(s): 03232]	$5,200.
5. Well logging: [11]	
A. Licenses for possession and use of byproduct material, source material, and/or special nuclear material for well logging, well surveys, and tracer studies other than field flooding tracer studies.	
Application [Program Code(s): 03110, 03111, 03112]	$4,800.
B. Licenses for possession and use of byproduct material for field flooding tracer studies.	
Licensing [Program Code(s): 03113]	Full Cost.
6. Nuclear laundries: [11]	
A. Licenses for commercial collection and laundry of items contaminated with byproduct material, source material, or special nuclear material.	
Application [Program Code(s): 03218]	$22,900.
7. Medical licenses: [11]	
A. Licenses issued under parts 30, 35, 40, and 70 of this chapter for human use of byproduct material, source material, or special nuclear material in sealed sources contained in gamma stereotactic radiosurgery units, teletherapy devices, or similar beam therapy devices. Number of locations of use: 1–5.	
Application [Program Code(s): 02300, 02310]	$11,500.
(1). Licenses issued under parts 30, 35, 40, and 70 of this chapter for human use of byproduct material, source material, or special nuclear material in sealed sources contained in gamma stereotactic radiosurgery units, teletherapy devices, or similar beam therapy devices. Number of locations of use: 6–20.	
Application [Program Code(s): 04510, 04512]	$15,300.
(2). Licenses issued under parts 30, 35, 40, and 70 of this chapter for human use of byproduct material, source material, or special nuclear material in sealed sources contained in gamma stereotactic radiosurgery units, teletherapy devices, or similar beam therapy devices. Number of locations of use: More than 20.	
Application [Program Code(s): 04511, 04513]	$19,100.
B. Licenses of broad scope issued to medical institutions or two or more physicians under parts 30, 33, 35, 40, and 70 of this chapter authorizing research and development, including human use of byproduct material, except licenses for byproduct material, source material, or special nuclear material in sealed sources contained in teletherapy devices. This category also includes the possession and use of source material for shielding when authorized on the same license. Number of locations of use: 1–5.	
Application [Program Code(s): 02110]	$9,000.
(1). Licenses of broad scope issued to medical institutions or two or more physicians under parts 30, 33, 35, 40, and 70 of this chapter authorizing research and development, including human use of byproduct material, except licenses for byproduct material, source material, or special nuclear material in sealed sources contained in teletherapy devices. This category also includes the possession and use of source material for shielding when authorized on the same license. Number of locations of use: 6–20.	
Application [Program Code(s): 04710]	$11,900.
(2). Licenses of broad scope issued to medical institutions or two or more physicians under parts 30, 33, 35, 40, and 70 of this chapter authorizing research and development, including human use of byproduct material, except licenses for byproduct material, source material, or special nuclear material in sealed sources contained in teletherapy devices. This category also includes the possession and use of source material for shielding when authorized on the same license. Number of locations of use: More than 20.	
Application [Program Code(s): 04711]	$14,900.
C. Other licenses issued under parts 30, 35, 40, and 70 of this chapter for human use of byproduct material, source material, and/or special nuclear material, except licenses for byproduct material, source material, or special nuclear material in sealed sources contained in teletherapy devices.[10] Number of locations of use: 1–5.	
Application [Program Code(s): 02120, 02121, 02200, 02201, 02210, 02220, 02230, 02231, 02240, 22160].	$10,900.
(1). Other licenses issued under parts 30, 35, 40, and 70 of this chapter for human use of byproduct material, source material, and/or special nuclear material, except licenses for byproduct material, source material, or special nuclear material in sealed sources contained in teletherapy devices.[10] Number of locations of use: 6–20.	
Application [Program Code(s): 04810, 04812, 04814, 04816, 04818, 04820, 04822, 04824, 04826, 04828].	$9,000.

TABLE 1 TO § 170.31—SCHEDULE OF MATERIALS FEES—Continued

[See footnotes at end of table]

Category of materials licenses and type of fees [1]	Fees [2 3]
(2). Other licenses issued under parts 30, 35, 40, and 70 of this chapter for human use of byproduct material, source material, and/or special nuclear material, except licenses for byproduct material, source material, or special nuclear material in sealed sources contained in teletherapy devices.[10] Number of locations of use: More than 20.	
Application [Program Code(s): 04811,04813, 04815, 04817, 04819, 04821,04823, 04825, 04827, 04829].	$11,300.
8. Civil defense: [11]	
A. Licenses for possession and use of byproduct material, source material, or special nuclear material for civil defense activities.	
Application [Program Code(s): 03710]	$2,600.
9. Device, product, or sealed source safety evaluation:	
A. Safety evaluation of devices or products containing byproduct material, source material, or special nuclear material, except reactor fuel devices, for commercial distribution.	
Application—each device	$17,900.
B. Safety evaluation of devices or products containing byproduct material, source material, or special nuclear material manufactured in accordance with the unique specifications of, and for use by, a single applicant, except reactor fuel devices.	
Application—each device	$9,300.
C. Safety evaluation of sealed sources containing byproduct material, source material, or special nuclear material, except reactor fuel, for commercial distribution.	
Application—each source	$5,500.
D. Safety evaluation of sealed sources containing byproduct material, source material, or special nuclear material, manufactured in accordance with the unique specifications of, and for use by, a single applicant, except reactor fuel.	
Application—each source	$1,100.
10. Transportation of radioactive material:	
A. Evaluation of casks, packages, and shipping containers.	
1. Spent Fuel, High-Level Waste, and plutonium air packages	Full Cost.
2. Other Casks	Full Cost.
B. Quality assurance program approvals issued under part 71 of this chapter.	
1. Users and Fabricators. Application	$4,300.
Inspections	Full Cost.
2. Users. Application	$4,300.
Inspections	Full Cost.
C. Evaluation of security plans, route approvals, route surveys, and transportation security devices (including immobilization devices).	Full Cost.
11. Review of standardized spent fuel facilities	Full Cost.
12. Special projects: Including approvals, pre-application/licensing activities, and inspections.	
Application [Program Code: 25110]	Full Cost.
13. A. Spent fuel storage cask Certificate of Compliance	Full Cost.
B. Inspections related to storage of spent fuel under § 72.210 of this chapter	Full Cost.
14. Decommissioning/Reclamation: [11]	
A. Byproduct, source, or special nuclear material licenses and other approvals authorizing decommissioning, decontamination, reclamation, or site restoration activities under parts 30, 40, 70, 72, and 76 of this chapter, including master materials licenses (MMLs). The transition to this fee category occurs when a licensee has permanently ceased principal activities. [Program Code(s): 03900, 11900, 21135, 21215, 21325, 22200].	Full Cost.
B. Site-specific decommissioning activities associated with unlicensed sites, including MMLs, regardless of whether or not the sites have been previously licensed.	Full Cost.
15. Import and Export licenses:	
Licenses issued under part 110 of this chapter for the import and export only of special nuclear material, source material, tritium and other byproduct material, and the export only of heavy water, or nuclear grade graphite (fee categories 15.A. through 15.E.).	
A. Application for export or import of nuclear materials, including radioactive waste requiring Commission and Executive Branch review, for example, those actions under § 110.40(b) of this chapter.	
Application—new license, or amendment; or license exemption request	$20,200.
B. Application for export or import of nuclear material, including radioactive waste, requiring Executive Branch review, but not Commission review. This category includes applications for the export and import of radioactive waste and requires the NRC to consult with domestic host state authorities (*i.e.,* Low-Level Radioactive Waste Compact Commission, the U.S. Environmental Protection Agency, etc.).	
Application—new license, or amendment; or license exemption request	$10,100.
C. Application for export of nuclear material, for example, routine reloads of low enriched uranium reactor fuel and/or natural uranium source material requiring the assistance of the Executive Branch to obtain foreign government assurances.	
Application—new license, or amendment; or license exemption request	$7,200.
D. Application for export or import of nuclear material not requiring Commission or Executive Branch review, or obtaining foreign government assurances.	
Application—new license, or amendment; or license exemption request	$4,900.

TABLE 1 TO § 170.31—SCHEDULE OF MATERIALS FEES—Continued

[See footnotes at end of table]

Category of materials licenses and type of fees [1]	Fees [2 3]
E. Minor amendment of any active export or import license, for example, to extend the expiration date, change domestic information, or make other revisions which do not involve any substantive changes to license terms and conditions or to the type/quantity/chemical composition of the material authorized for export and, therefore, do not require in-depth analysis, review, or consultations with other Executive Branch, U.S. host state, or foreign government authorities. Minor amendment.	$4,900.
Licenses issued under part 110 of this chapter for the import and export only of Category 1 and Category 2 quantities of radioactive material listed in appendix P to part 110 of this chapter (fee categories 15.F. through 15.R.).	
Category 1 (Appendix P, 10 CFR Part 110) Exports:	
F. Application for export of appendix P Category 1 materials requiring Commission review (*e.g.* exceptional circumstance review under § 110.42(e)(4) of this chapter) and to obtain one government-to-government consent for this process. For additional consent see fee category 15.I.	
Application—new license, or amendment; or license exemption request	$17,300.
G. Application for export of appendix P Category 1 materials requiring Executive Branch review and to obtain one government-to-government consent for this process. For additional consents see fee category 15.I.	
Application—new license, or amendment; or license exemption request	$8,600.
H. Application for export of appendix P Category 1 materials and to obtain one government-to-government consent for this process. For additional consents see fee category 15.I.	
Application—new license, or amendment; or license exemption request	$4,900.
I. Requests for each additional government-to-government consent in support of an export license application or active export license.	
Application—new license, or amendment; or license exemption request	$1,400.
Category 2 (Appendix P, 10 CFR Part 110) Exports:	
J. Application for export of appendix P Category 2 materials requiring Commission review (*e.g.* exceptional circumstance review under § 110.42(e)(4) of this chapter).	
Application—new license, or amendment; or license exemption request	$17,300.
K. Applications for export of appendix P Category 2 materials requiring Executive Branch review.	
Application—new license, or amendment; or license exemption request	$8,600.
L. Application for the export of Category 2 materials.	
Application—new license, or amendment; or license exemption request	$4,300.
M. [Reserved]	N/A.
N. [Reserved]	N/A.
O. [Reserved]	N/A.
P. [Reserved]	N/A.
Q. [Reserved]	N/A.
Minor Amendments (Category 1 and 2, Appendix P, 10 CFR Part 110, Export):	
R. Minor amendment of any active export license, for example, to extend the expiration date, change domestic information, or make other revisions which do not involve any substantive changes to license terms and conditions or to the type/quantity/chemical composition of the material authorized for export and, therefore, do not require in-depth analysis, review, or consultations with other Executive Branch, U.S. host state, or foreign authorities. Minor amendment.	$1,400.
16. Reciprocity:	
Agreement State licensees who conduct activities under the reciprocity provisions of § 150.20 of this chapter.	
Application	$2,700.
17. Master materials licenses of broad scope issued to Government agencies.	
Application [Program Code(s): 03614]	Full Cost.
18. Department of Energy:	
A. Certificates of Compliance. Evaluation of casks, packages, and shipping containers (including spent fuel, high-level waste, and other casks, and plutonium air packages).	Full Cost.
B. Uranium Mill Tailings Radiation Control Act (UMTRCA) activities	Full Cost.

[1] *Types of fees*—Separate charges, as shown in the schedule, will be assessed for pre-application consultations and reviews; applications for new licenses, approvals, or license terminations; possession-only licenses; issuances of new licenses and approvals; certain amendments and renewals to existing licenses and approvals; safety evaluations of sealed sources and devices; generally licensed device registrations; and certain inspections. The following guidelines apply to these charges:

(1) *Application and registration fees.* Applications for new materials licenses and export and import licenses; applications to reinstate expired, terminated, or inactive licenses, except those subject to fees assessed at full costs; applications filed by Agreement State licensees to register under the general license provisions of 10 CFR 150.20; and applications for amendments to materials licenses that would place the license in a higher fee category or add a new fee category must be accompanied by the prescribed application fee for each category.

(i) Applications for licenses covering more than one fee category of special nuclear material or source material must be accompanied by the prescribed application fee for the highest fee category.

(ii) Applications for new licenses that cover both byproduct material and special nuclear material in sealed sources for use in gauging devices will pay the appropriate application fee for fee category 1.C. only.

(2) *Licensing fees.* Fees for reviews of applications for new licenses, renewals, and amendments to existing licenses, pre-application consultations and other documents submitted to the NRC for review, and project manager time for fee categories subject to full cost fees are due upon notification by the Commission in accordance with § 170.12(b).

(3) *Amendment fees.* Applications for amendments to export and import licenses must be accompanied by the prescribed amendment fee for each license affected. An application for an amendment to an export or import license or approval classified in more than one fee category must be accompanied by the prescribed amendment fee for the category affected by the amendment, unless the amendment is applicable to two or more fee categories, in which case the amendment fee for the highest fee category would apply.

(4) *Inspection fees.* Inspections resulting from investigations conducted by the Office of Investigations and nonroutine inspections that result from third-party allegations are not subject to fees. Inspection fees are due upon notification by the Commission in accordance with § 170.12(c).

(5) *Generally licensed device registrations under 10 CFR 31.5.* Submittals of registration information must be accompanied by the prescribed fee.

[2] Fees will be charged for approvals issued under a specific exemption provision of the Commission's regulations under title 10 of the *Code of Federal Regulations* (*e.g.,* 10 CFR 30.11, 40.14, 70.14, 73.5, and any other sections in effect now or in the future), regardless of whether the approval is in the form of a license amendment, letter of approval, safety evaluation report, or other form. In addition to the fee shown, an applicant may be assessed an additional fee for sealed source and device evaluations as shown in fee categories 9.A. through 9.D.

[3] Full cost fees will be determined based on the professional staff time multiplied by the appropriate professional hourly rate established in § 170.20 in effect when the service is provided, and the appropriate contractual support services expended.

[4] Licensees paying fees under categories 1.A., 1.B., and 1.E. are not subject to fees under categories 1.C., 1.D. and 1.F. for sealed sources authorized in the same license, except for an application that deals only with the sealed sources authorized by the license.

[5] Persons who possess radium sources that are used for operational purposes in another fee category are not also subject to the fees in this category. (This exception does not apply if the radium sources are possessed for storage only.)

[6] Licensees subject to fees under fee categories 1.A., 1.B., 1.E., or 2.A. must pay the largest applicable fee and are not subject to additional fees listed in this table.

[7] Licensees paying fees under 3.C., 3.C.1, or 3.C.2 are not subject to fees under 2.B. for possession and shielding authorized on the same license.

[8] Licensees paying fees under 7.C. are not subject to fees under 2.B. for possession and shielding authorized on the same license.

[9] Licensees paying fees under 3.N. are not subject to paying fees under 3.P., 3.P.1, or 3.P.2 for calibration or leak testing services authorized on the same license.

[10] Licensees paying fees under 7.B., 7.B.1, or 7.B.2 are not subject to paying fees under 7.C., 7.C.1, or 7.C.2. for broad scope licenses issued under parts 30, 35, 40, and 70 of this chapter for human use of byproduct material, source material, and/or special nuclear material, except licenses for byproduct material, source material, or special nuclear material in sealed sources contained in teletherapy devices authorized on the same license.

[11] A materials license (or part of a materials license) that transitions to fee category 14.A is assessed full-cost fees under 10 CFR part 170, but is not assessed an annual fee under 10 CFR part 171. If only part of a materials license is transitioned to fee category 14.A, the licensee may be charged annual fees (and any applicable 10 CFR part 170 fees) for other activities authorized under the license that are not in decommissioning status.

[71 FR 30747, July 31, 2006, as amended at 75 FR 34235, June 16, 2010; 76 FR 36797, June 22, 2011; 76 FR 72087, Nov. 22, 2011; 77 FR 35827, June 13, 2012; 78 FR 32341, May 29, 2013; 78 FR 39428, July 1, 2013; 78 FR 54959, Sept. 9, 2013; 79 FR 37145, June 30, 2014; 79 FR 51471, Aug. 29, 2014; 80 FR 37455, June 30, 2015; 81 FR 41186, June 24, 2016; 82 FR 30699, June 30, 2017; 83 FR 29646, June 25, 2018; 84 FR 22350, May 17, 2019; 85 FR 37271, June 19, 2020; 86 FR 32171, June 16, 2021]

§ 170.32 Schedule of fees for health and safety, and safeguards inspections for materials licenses.

Materials licensees shall pay inspection fees as set forth in § 170.31.

[53 FR 52652, Dec. 29, 1988]

ENFORCEMENT

§ 170.41 Failure by applicant or licensee to pay prescribed fees.

If the Commission determines that an applicant or a licensee has failed to pay a prescribed fee required in this part, the Commission will not process any application and may suspend or revoke any license or approval issued to the applicant or licensee. The Commission may issue an order with respect to licensed activities that the Commission determines to be appropriate or necessary to carry out the provisions of this part, parts 30, 31, 32 through 35, 40, 50, 61, 70, 71, 72, 73, and 76 of this chapter, and of the act.

[66 FR 32474, June 14, 2001]

§ 170.51 Right to dispute assessed fees.

All debtors' disputes of fees assessed must be submitted in accordance with 10 CFR 15.31.

[86 FR 32176, June 16, 2021]

PART 171—ANNUAL FEES FOR REACTOR LICENSES AND FUEL CYCLE LICENSES AND MATERIALS LICENSES, INCLUDING HOLDERS OF CERTIFICATES OF COMPLIANCE, REGISTRATIONS, AND QUALITY ASSURANCE PROGRAM APPROVALS AND GOVERNMENT AGENCIES LICENSED BY THE NRC

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171.23 Enforcement.
171.25 Collection, interest, penalties, and administrative costs.

AUTHORITY: Atomic Energy Act of 1954, secs. 11, 161(w), 223, 234 (42 U.S.C. 2014, 2201(w), 2273, 2282); Energy Reorganization Act of 1974, sec. 201 (42 U.S.C. 5841); 42 U.S.C. 2215; 44 U.S.C. 3504 note.

SOURCE: 51 FR 33230, Sept. 18, 1986, unless otherwise noted.

§ 171.1 Purpose.

The regulations in this part set out the annual fees charged to persons who hold licenses, Certificates of Compliance, sealed source and device registrations, and quality assurance program approvals issued by the United States Nuclear Regulatory Commission, including licenses, registrations, approvals, and certificates issued to a Government agency.

[56 FR 31504, July 10, 1991]

§ 171.3 Scope.

The regulations in this part apply to any person holding an operating license for a non-power production or utilization facility issued under 10 CFR part 50 that has provided notification to the Nuclear Regulatory Commission (NRC) that the licensee has successfully completed startup testing, and to any person holding an operating license for a power reactor or small modular reactor licensed under 10 CFR part 50 or a combined license issued under 10 CFR part 52 that has provided notification to the NRC that the licensee has successfully completed power ascension testing. The regulations in this part also apply to any person holding a materials license as defined in this part, a certificate of compliance, a sealed source or device registration, a quality assurance program approval, and to a Government agency as defined in this part. Notwithstanding the other provisions in this section, the regulations in this part do not apply to uranium recovery and fuel facility licensees until after the Commission verifies through inspection that the facility has been constructed in accordance with the requirements of the license.

[86 FR 32176, June 16, 2021]

§ 171.5 Definitions.

Budget means the funds appropriated by Congress for the NRC for each fiscal year, and if that appropriation is not passed on or before September 1 for that fiscal year, the funds most recently appropriated by Congress for the most recent fiscal year.

Budget authority means the authority, in the form of an appropriation, provided by law and becoming available during the year, to enter into obligations that will result in immediate or future outlays involving Federal Government funds. The appropriation is an authorization by an Act of Congress that permits the NRC to incur obligations and to make payments out of the Treasury for specified purposes. Fees assessed pursuant to Public Law 115–439 are based on the NRC's budget authority.

Bundled unit means the cumulative licensed thermal power rating of a number of SMR reactors on the same site that, for 10 CFR part 171 purposes only, is considered a single fee unit. The maximum capacity of a bundled unit is 4,500 MWt. A single SMR reactor can be part of two bundled units if it completes the capacity of one unit and begins the capacity of an additional unit. For a given site, the use of the bundled unit concept is independent of the number of SMR plants, the number of SMR licenses issued, or the sequencing of the SMR licenses that have been issued. The first bundled unit on a site is assessed a minimum fee for capacity less than or equal to 250 MWt, plus a variable fee for capacity greater than 250 MWt and less than or equal to 2,000 MWt. Bundled units with capacities greater than 2,000 MWt and less than or equal to

4,500 MWt are assessed a maximum fee that is equivalent to the annual fee paid by the current reactor fleet. The maximum fee replaces the minimum and variable fee for the first bundled unit. Each additional increment of 4,500 MWt of SMR capacity on the same site constitutes an additional bundled unit. No minimum fee is assessed to additional bundled units. For any additional bundled unit, a variable fee applies to capacities less than or equal to 2,000 MWt and the maximum fee applies to capacities greater than 2,000 MWt and less than or equal to 4,500 MWT. For additional bundled units, the maximum fee replaces the variable fee.

Byproduct material means—

(1) Any radioactive material (except special nuclear material) yielded in, or made radioactive by, exposure to the radiation incident to the process of producing or using special nuclear material;

(2)(i) Any discrete source of radium–226 that is produced, extracted, or converted after extraction, before, on, or after August 8, 2005, for use for a commercial, medical, or research activity; or

(ii) Any material that—

(A) Has been made radioactive by use of a particle accelerator; and

(B) Is produced, extracted, or converted after extraction, before, on, or after August 8, 2005, for use for a commercial, medical, or research activity; and

(3) Any discrete source of naturally occurring radioactive material, other than source material, that—

(i) The Commission, in consultation with the Administrator of the Environmental Protection Agency, the Secretary of Energy, the Secretary of Homeland Security, and the head of any other appropriate Federal agency, determines would pose a threat similar to the threat posed by a discrete source of radium–226 to the public health and safety or the common defense and security; and

(ii) Before, on, or after August 8, 2005, is extracted or converted after extraction for use in a commercial, medical, or research activity.

Certificate holder means a person who holds a certificate of compliance, or other package approval issued by the Commission.

Commission means the U.S. Nuclear Regulatory Commission or its duly authorized representatives.

Federal fiscal year means a year that begins on October 1 of each calendar year and ends on September 30 of the following calendar year. Federal fiscal years are identified by the year in which they end (e.g., fiscal year 1987 begins in 1986 and ends in 1987).

Government agency means any executive department, commission, independent establishment, corporation, wholly or partly owned by the United States of America which is an instrumentality of the United States, or any board, bureau, division, service, office, officer, authority, administration, or other establishment in the executive branch of the government.

Greater Than Class C Waste or *GTCC Waste* means low-level radioactive waste that exceeds the concentration limits of radionuclides established for Class C waste in 10 CFR 61.55.

High enriched uranium fuel means uranium enriched to 20 percent or greater in the isotope uranium–235.

Low enriched uranium fuel means uranium enriched below 20 percent in the isotope uranium–235.

Materials license means a license, certificate, approval, registration or other form of permission issued or granted by the NRC under the regulations in 10 CFR parts 30, 31 through 36, 39, 40, 61, 70, 71, 72, and 76.

Maximum fee is the highest fee paid by a single bundled unit. It is applied to all bundled units on an SMR site with a licensed thermal power rating greater than 2,000 MWt and less than or equal to 4,500 MWt and is equal to the flat annual fee paid by existing fleet power reactors.

Minimum fee means one annual fee component paid by the first bundled unit on a site with a cumulative licensed thermal power rating of 2,000 MWt or less. For the first bundled unit on a site with a licensed thermal power rating of 250 MWt or less, it is the only annual fee that a licensee pays.

Non-power production or utilization facility means a production or utilization facility licensed under 10 CFR 50.21(a) or (c), or 10 CFR 50.22, as applicable,

that is not a nuclear power reactor or production facility as defined under paragraphs (1) and (2) of the definition of ''production facility'' in 10 CFR 50.2.

Nonprofit educational institution means a public or nonprofit educational institution whose primary function is education, whose programs are accredited by a nationally recognized accrediting agency or association, who is legally authorized to provide a program of organized instruction or study, who provides an educational program for which it awards academic degrees, and whose educational programs are available to the public.

Nuclear reactor means an apparatus, other than an atomic weapon, used to sustain fission in a self-supporting chain reaction.

Operating license means having a license issued pursuant to § 50.57 of this chapter. It does not include licenses that only authorize possession of special nuclear material after the Commission has received a request from the licensee to amend its licensee to permanently withdraw its authority to operate or the Commission has permanently revoked such authority.

Person means:

(1) Any individual, corporation, partnership, firm, association, trust, estate, public or private institution, group, Government agency other than the Commission; any state or any political subdivision of, or any political entity within, a state; any foreign Government or nation or any political subdivision of any such government or nation; or other entity; and

(2) Any legal successor, representative, agent, or agency of the foregoing.

Power reactor means a nuclear reactor designed to produce electrical or heat energy and licensed by the Commission under the authority of section 103 or subsection 104b of the Atomic Energy Act of 1954, as amended, and pursuant to the provisions of § 50.21(b) or § 50.22 of this chapter.

Quality assurance program approval is the document issued by the NRC to approve the quality assurance program submitted to the NRC as meeting the requirements of § 71.101 of this chapter. Activities covered by the quality assurance program may be divided into two major groups: those activities including design, fabrication and use of packaging and those activities for use only of packaging.

Registration holder as used in this part means any manufacturer or initial distributor of a sealed source or device containing a sealed source that holds a certificate of registration issued by the NRC or a holder of a registration for a sealed source or device manufactured in accordance with the unique specifications of, and for use by, a single applicant.

Research reactor means a nuclear reactor licensed by the Commission under the authority of subsection 104c of the Act and pursuant to the provisions of § 50.21(c) of this chapter for operation at a thermal power level of 10 megawatts or less, and which is not a testing facility as defined in this section.

Small modular reactor (SMR) for the purposes of calculating fees, means the class of light-water power reactors having a licensed thermal power rating less than or equal to 1,000 MWt per module. This rating is based on the thermal power equivalent of a light-water SMR with an electrical power generating capacity of 300 MWe or less per module.

Small modular reactor site (SMR site) is the geographically bounded location of one or more SMRs and a basis on which SMR fees are calculated.

Source material means:

(1) Uranium or thorium, or any combination thereof, in any physical or chemical form; or

(2) Ores which contain by weight one-twentieth of one percent (0.05%) or more of

(i) Uranium,

(ii) Thorium, or

(iii) Any combination thereof.

Source material does not include special nuclear material.

Special nuclear material means:

(1) Plutonium, uranium-233, uranium enriched in the isotope 233 or in the isotope 235, and any other material which the Commission, pursuant to the provisions of section 51 of the Atomic Energy Act of 1954, as amended, determines to be special nuclear material, but does not include source material; or

(2) Any material artificially enriched by any of the foregoing, but does not include source material.

Testing facility means a nuclear reactor licensed by the Commission under the authority of subsection 104c of the Act and pursuant to the provisions of § 50.21(c) of this chapter for operation at:

(1) A thermal power level in excess of 10 megawatts; or

(2) A thermal power level in excess of 1 megawatt, if the reactor is to contain:

(i) A circulating loop through the core in which the applicant proposes to conduct fuel experiments; or

(ii) A liquid fuel loading; or

(iii) An experimental facility in the core in excess of 16 square inches in cross-section.

Variable fee means the annual fee component paid by the first bundled unit on a site with a licensed thermal power rating greater than 250 MWt and less than or equal to 2,000 MWt; or the annual fee component paid by additional bundled units on a site that have a licensed thermal power rating of less than or equal to 2,000 MWt. The variable fee is the product of the bundled unit thermal power capacity (in the applicable range) and the variable rate.

Variable rate means a per-MWt fee factor applied to all bundled units on site with a licensed thermal power rating less than or equal to 2,000 MWt. For the first bundled unit on a site with a licensed thermal power rating greater than 250 MWt and less than or equal to 2,000 MWt, the variable rate is based on the difference between the maximum fee and the minimum fee, divided by 1,750 MWt (the variable fee licensed thermal rating range). For additional bundled units with a licensed thermal power rating less than or equal to 2,000 MWt, the variable rate is based on the maximum fee divided by 2,000 MWt.

[51 FR 33230, Sept. 18, 1986, as amended at 53 FR 52652, Dec. 29, 1988; 56 FR 31505, July 10, 1991; 57 FR 32714, July 23, 1992; 58 FR 38695, July 20, 1993; 65 FR 36964, June 12, 2000; 66 FR 32474, June 14, 2001; 67 FR 42634, June 24, 2002; 71 FR 30752, May 30, 2006; 72 FR 35936, Oct. 1, 2007; 81 FR 32627, May 24, 2016; 81 FR 45964, July 15, 2016; 83 FR 29652, June 25, 2018; 86 FR 32177, June 16, 2021]

§ 171.7 Interpretations.

Except as specifically authorized by the Commission in writing, no interpretation of the regulations in this part by an officer or employee of the Commission, other than a written interpretation by the General Counsel, will be recognized as binding on the Commission.

§ 171.8 Information collection requirements: OMB approval

This part contains no information collection requirements and therefore is not subject to the requirements of the Paperwork Reduction Act (44 U.S.C. 3501 *et seq.*).

[62 FR 52191, Oct. 6, 1997]

§ 171.9 Communications.

All communications concerning the regulations in this part should be addressed to the NRC's Chief Financial Officer, either by mail to the U.S. Nuclear Regulatory Commission, Washington, DC 20555–0001; by hand delivery to the NRC's offices at 11555 Rockville Pike, Rockville, Maryland; or, where practicable, by electronic submission, for example, via Electronic Information Exchange, or CD-ROM. Electronic submissions must be made in a manner that enables the NRC to receive, read, authenticate, distribute, and archive the submission, and process and retrieve it a single page at a time. Detailed guidance on making electronic submissions can be obtained by visiting the NRC's Web site at *http://www.nrc.gov/site-help/e-submittals.html;* by e-mail to *MSHD.Resource@nrc.gov;* or by writing the Office of the Chief Information Officer, U.S. Nuclear Regulatory Commission, Washington, DC 20555–0001. The guidance discusses, among other topics, the formats the NRC can accept, the use of electronic signatures, and the treatment of nonpublic information.

[68 FR 58826, Oct. 10, 2003, as amended at 74 FR 62687, Dec. 1, 2009; 80 FR 74982, Dec. 1, 2015]

§ 171.11 Exemptions.

(a) All requests for exemptions must be filed with the NRC within 90 days from the effective date of the final rule establishing the annual fees for which

the exemption is sought in order to be considered. Absent extraordinary circumstances, any exemption requests filed beyond that date will not be considered. The filing of an exemption request does not extend the date on which the bill is payable. Only timely payment in full ensures avoidance of interest and penalty charges. If a partial or full exemption is granted, any overpayment will be refunded. Requests for clarification of or questions relating to an annual fee bill must also be filed within 90 days from the date of the initial invoice to be considered.

(b) An annual fee is not required for:

(1) A construction permit or license applied for by, or issued to, a nonprofit educational institution for a production or utilization facility, other than a power reactor, or for the possession and use of byproduct material, source material, or special nuclear material. This exemption does not apply to those byproduct, source, or special nuclear material licenses which authorize:

(i) Human use;

(ii) Remunerated services to other persons;

(iii) Distribution of byproduct material, source material, or special nuclear material or products containing byproduct material, source material, or special nuclear material; or

(iv) Activities performed under a Government contract.

(2) Federally-owned and State-owned research reactors used primarily for educational training and academic research purposes. For purposes of this exemption, the term research reactor means a nuclear reactor that—

(i) Is licensed by the Nuclear Regulatory Commission under section 104c. of the Atomic Energy Act of 1954 (42 U.S.C. 2134(c)) for operation at a thermal power level of 10 megawatts or less; and

(ii) If so licensed for operation at a thermal power level of more than 1 megawatt, does not contain—

(A) A circulating loop through the core in which the licensee conducts fuel experiments;

(B) A liquid fuel loading; or

(C) An experimental facility in the core in excess of 16 square inches in cross-section.

(c) The Commission may, upon application by an interested person or on its own initiative, grant an exemption from the requirements of this part that it determines is authorized by law and otherwise in the public interest.

(d) An exemption for reactors licensed to operate may be granted by the Commission taking into consideration each of the following factors:

(1) Age of the reactor;

(2) Number of customers in rate base;

(3) Net increase in KWh cost for each customer directly related to the annual fee assessed under this part; and

(4) Any other relevant matter which the licensee believes justifies the reduction of the annual fee.

(e) The Commission may grant a materials licensee an exemption from the annual fee if it determines that the annual fee is not based on a fair and equitable allocation of the NRC costs. The following factors must be fulfilled as determined by the Commission for an exemption to be granted:

(1) There are data specifically indicating that the assessment of the annual fee will result in a significantly disproportionate allocation of costs to the licensee, or class of licensees; or

(2) There is clear and convincing evidence that the budgeted generic costs attributable to the class of licensees are neither directly or indirectly related to the specific class of licensee nor explicitly allocated to the licensee by Commission policy decisions; or

(3) Any other relevant matter that the licensee believes shows that the annual fee was not based on a fair and equitable allocation of NRC costs.

[56 FR 31505, July 10, 1991, as amended at 57 FR 32714, July 23, 1992; 58 FR 38695, July 20, 1993; 59 FR 12543, Mar. 17, 1994; 59 FR 36924, July 20, 1994; 67 FR 42634, June 24, 2002; 70 FR 30548, May 29, 2005; 79 FR 37150, June 30, 2014; 86 FR 32177, June 16, 2021]

§ 171.13 Notice.

The annual fees applicable to any NRC licensee subject to this part and calculated in accordance with §§ 171.15 and 171.16, will be published as a notice in the FEDERAL REGISTER as soon as possible but no later than the third quarter of the fiscal year. The annual fees will become due and payable to the NRC as indicated in § 171.19. Quarterly

payments of the annual fee of $100,000 or more will continue during the fiscal year and be based on the applicable annual fees as shown in §§ 171.15 and 171.16 until a notice concerning the revised amount of the fees for the fiscal year is published by the NRC. If the NRC is unable to publish a final fee rule that becomes effective during the current fiscal year, fees would be assessed based on the rates in effect for the previous fiscal year.

[64 FR 31475, June 10, 1999]

§ 171.15 Annual fees: Non-power production or utilization licenses, reactor licenses, and independent spent fuel storage licenses.

(a) Each person holding an operating license for one or more non-power production or utilization facilities under 10 CFR part 50 that has provided notification to the NRC of the successful completion of startup testing; each person holding an operating license for a power reactor licensed under 10 CFR part 50 or a combined license under 10 CFR part 52 that has provided notification to the NRC of the successful completion of power ascension testing; each person holding a 10 CFR part 50 or 52 power reactor license that is in decommissioning or possession only status, except those that have no spent fuel onsite; and each person holding a 10 CFR part 72 license who does not hold a 10 CFR part 50 or 52 license and provides notification in accordance with 10 CFR 72.80(g), shall pay the annual fee for each license held during the Federal fiscal year in which the fee is due. This paragraph (a) does not apply to test or research reactors exempted under § 171.11(b).

(b)(1) The FY 2021 annual fee for each operating power reactor that must be collected by September 30, 2021, is $4,749,000.

(2) The FY 2021 annual fees are comprised of a base annual fee for power reactors licensed to operate, a base spent fuel storage/reactor decommissioning annual fee, and associated additional charges. The activities comprising the spent fuel storage/reactor decommissioning base annual fee are shown in paragraphs (c)(2)(i) and (ii) of this section. The activities comprising the FY 2021 base annual fee for operating power reactors are as follows:

(i) Power reactor safety and safeguards regulation except licensing and inspection activities recovered under part 170 of this chapter and generic reactor decommissioning activities.

(ii) Research activities directly related to the regulation of power reactors, except those activities specifically related to reactor decommissioning.

(iii) Generic activities required largely for NRC to regulate power reactors (e.g., updating part 50 or 52 of this chapter, operating the Incident Response Center, new reactor regulatory infrastructure). The base annual fee for operating power reactors does not include generic activities specifically related to reactor decommissioning.

(c)(1) The FY 2021 annual fee for each power reactor holding a 10 CFR part 50 license or combined license issued under 10 CFR part 52 that is in a decommissioning or possession-only status and has spent fuel onsite, and for each independent spent fuel storage 10 CFR part 72 licensee who does not hold a 10 CFR part 50 license or a 10 CFR part 52 combined license, is $237,000.

(2) The FY 2021 annual fee is comprised of a base spent fuel storage/reactor decommissioning annual fee (which is also included in the operating power reactor annual fee shown in paragraph (b) of this section). The activities comprising the FY 2021 spent fuel storage/reactor decommissioning rebaselined annual fee are:

(i) Generic and other research activities directly related to reactor decommissioning and spent fuel storage; and

(ii) Other safety, environmental, and safeguards activities related to reactor decommissioning and spent fuel storage, except costs for licensing and inspection activities that are recovered under part 170 of this chapter.

(d)(1) Each person holding an operating license for an SMR issued under 10 CFR part 50 or a combined license issued under 10 CFR part 52 that has provided notification to the NRC of the successful completion startup testing, shall pay the annual fee for all licenses held for an SMR site. The annual fee will be determined using the cumulative licensed thermal power rating of

all SMR units and the bundled unit concept, during the fiscal year in which the fee is due. For a given site, the use of the bundled unit concept is independent of the number of SMR plants, the number of SMR licenses issued, or the sequencing of the SMR licenses that have been issued.

(2) The annual fees for a small modular reactor(s) located on a single site to be collected by September 30 of each year, are as follows:

TABLE 1 TO PARAGRAPH (d)(2)

Bundled unit thermal power rating	Minimum fee	Variable fee	Maximum fee
First Bundled Unit:			
0 MWt ≤250 MWt	TBD	N/A	N/A.
>250 MWt ≤2,000 MWt	TBD	TBD	N/A.
>2,000 MWt ≤4,500 MWt	N/A	N/A	TBD.
Additional Bundled Units:			
0 MWt ≤2,000 MWt	N/A	TBD	N/A.
>2,000 MWt ≤4,500 MWt	N/A	N/A	TBD.

(3) The annual fee for an SMR collected under this paragraph (d) is in lieu of any fee otherwise required under paragraph (b) of this section. The annual fee under this paragraph (d) covers the same activities listed for the power reactor base annual fee and the spent fuel storage/reactor decommissioning reactor fee.

(e) The FY 2021 annual fee for licensees authorized to operate one or more non-power production or utilization facilities under a single 10 CFR part 50 license, unless the reactor is exempted from fees under § 171.11(b), is $80,000.

[72 FR 31426, June 6, 2007, as amended at 72 FR 49566, Aug. 28, 2007; 73 FR 32407, June 6, 2008; 74 FR 27665, June 10, 2009; 75 FR 34240, June 16, 2010; 76 FR 36802, June 22, 2011; 77 FR 35831, June 15, 2012; 78 FR 39487, July 1, 2013; 79 FR 37150, June 30, 2014; 80 FR 37460, June 30, 2015; 81 FR 32628, May 24, 2016; 81 FR 45964, July 15, 2016; 81 FR 41192, June 24, 2016; 82 FR 30704, June 30, 2017; 83 FR 29652, June 25, 2018; 84 FR 22356, May 17, 2019; 85 FR 37277, June 19, 2020; 86 FR 32177, June 16, 2021]

§ 171.16 Annual fees: Materials licensees, holders of certificates of compliance, holders of sealed source and device registrations, holders of quality assurance program approvals, and government agencies licensed by the NRC.

(a)(1) The provisions of this section apply to person(s) who are authorized to conduct activities under—

(i) 10 CFR part 30 for byproduct material;

(ii) 10 CFR part 40 for source material;

(iii) 10 CFR part 70 for special nuclear material;

(iv) 10 CFR part 71 for packaging and transportation of radioactive material; and

(v) 10 CFR part 76 for uranium enrichment.

(2) Notwithstanding the other provisions in this section, the regulations in this part do not apply to uranium recovery and fuel facility licensees until after the Commission verifies through inspection that the facility has been constructed in accordance with the requirements of the license.

(3) In accordance with § 171.17, each person identified in paragraph (a)(1) of this section shall pay the applicable annual fee for each license the person holds during the FY. Annual fees will be prorated for new licenses issued and for licenses for which termination is requested and activities permanently ceased during the FY as provided in § 171.17. If a single license authorizes more than one activity (e.g., human use and irradiator activities), annual fees will be assessed for each fee category applicable to the license. If a person holds more than one license, the total annual fee assessed will be the cumulative total of the annual fees applicable to each license held.

(b) The annual fee is comprised of a base annual fee and an allocation for fee-relief adjustment. The activities comprising the fee-relief adjustment are shown in paragraph (e) of this section. The base annual fee is the sum of budgeted costs for the following activities:

(1) Generic and other research activities directly related to the regulation

of materials licenses as defined in this part; and

(2) Other safety, environmental, and safeguards activities for materials licenses, except costs for licensing and inspection activities that are recovered under Part 170 of this chapter.

(c) A licensee who is required to pay an annual fee under this section, in addition to 10 CFR part 72 licenses, may qualify as a small entity. If a licensee qualifies as a small entity and provides the Commission with the proper certification along with its annual fee payment, the licensee may pay reduced annual fees as shown in Table 1 to this paragraph (c). Failure to file a small entity certification in a timely manner could result in the receipt of a delinquent invoice requesting the outstanding balance due and/or denial of any refund that might otherwise be due. The small entity fees are as follows:

TABLE 1 TO PARAGRAPH (c)

NRC small entity classification	Maximum annual fee per licensed category
Small Businesses Not Engaged in Manufacturing (Average gross receipts over last 3 completed fiscal years):	
$485,000 to $7 million	$4,900
Less than $485,000	1,000
Small Not-For-Profit Organizations (Annual Gross Receipts):	
$485,000 to $7 million	4,900
Less than $485,000	1,000
Manufacturing Entities that Have An Average of 500 Employees or Fewer:	
35 to 500 employees	4,900
Fewer than 35 employees	1,000
Small Governmental Jurisdictions (Including publicly supported educational institutions) (Population):	
20,000 to 49,999	4,900
Fewer than 20,000	1,000
Educational Institutions that are not State or Publicly Supported, and have 500 Employees or Fewer:	
35 to 500 employees	4,900
Fewer than 35 employees	1,000

(d) The FY 2021 annual fees for materials licensees and holders of certificates, registrations, or approvals subject to fees under this section are shown table 2 to this paragraph (d):

TABLE 2 TO PARAGRAPH (d)—SCHEDULE OF MATERIALS ANNUAL FEES AND FEES FOR GOVERNMENT AGENCIES LICENSED BY NRC

[See footnotes at end of table]

Category of materials licenses	Annual fees [1 2 3]
1. Special nuclear material:	
A. (1) Licenses for possession and use of U–235 or plutonium for fuel fabrication activities.	
(a) Strategic Special Nuclear Material (High Enriched Uranium) [15] [Program Code(s): 21213]	$4,643,000
(b) Low Enriched Uranium in Dispersible Form Used for Fabrication of Power Reactor Fuel [15] [Program Code(s): 21210]	$1,573,000
(2) All other special nuclear materials licenses not included in Category 1.A.(1) which are licensed for fuel cycle activities.	
(a) Facilities with limited operations [15] [Program Code(s): 21310, 21320]	$1,037,000
(b) Gas centrifuge enrichment demonstration facility [15] [Program Code(s): 21205]	N/A
(c) Others, including hot cell facility [15] [Program Code(s): 21130, 21133]	N/A
B. Licenses for receipt and storage of spent fuel and reactor-related Greater than Class C (GTCC) waste at an independent spent fuel storage installation (ISFSI) [11 15] [Program Code(s): 23200]	N/A
C. Licenses for possession and use of special nuclear material of less than a critical mass, as defined in § 70.4 of this chapter, in sealed sources contained in devices used in industrial measuring systems, including x-ray fluorescence analyzers. [Program Code(s): 22140]	$2,400
D. All other special nuclear material licenses, except licenses authorizing special nuclear material in sealed or unsealed form in combination that would constitute a critical mass, as defined in § 70.4 of this chapter, for which the licensee shall pay the same fees as those under Category 1.A. [Program Code(s): 22110, 22111, 22120, 22131, 22136, 22150, 22151, 22161, 22170, 23100, 23300, 23310]	$5,700
E. Licenses or certificates for the operation of a uranium enrichment facility [15] [Program Code(s): 21200]	$2,023,000

TABLE 2 TO PARAGRAPH (d)—SCHEDULE OF MATERIALS ANNUAL FEES AND FEES FOR GOVERNMENT AGENCIES LICENSED BY NRC—Continued

[See footnotes at end of table]

Category of materials licenses	Annual fees [1 2 3]
F. Licenses for possession and use of special nuclear materials greater than critical mass, as defined in § 70.4 of this chapter, for development and testing of commercial products, and other non-fuel cycle activities.[4] [Program Code: 22155]	$4,300
2. Source material:	
A. (1) Licenses for possession and use of source material for refining uranium mill concentrates to uranium hexafluoride or for deconverting uranium hexafluoride in the production of uranium oxides for disposal.[15] [Program Code: 11400]	$467,000
(2) Licenses for possession and use of source material in recovery operations such as milling, in-situ recovery, heap-leaching, ore buying stations, ion-exchange facilities and in-processing of ores containing source material for extraction of metals other than uranium or thorium, including licenses authorizing the possession of byproduct waste material (tailings) from source material recovery operations, as well as licenses authorizing the possession and maintenance of a facility in a standby mode.	
(a) Conventional and Heap Leach facilities.[15] [Program Code(s): 11100]	N/A
(b) Basic *In Situ* Recovery facilities.[15] [Program Code(s): 11500]	$47,200
(c) Expanded *In Situ* Recovery facilities [15] [Program Code(s): 11510]	N/A
(d) *In Situ* Recovery Resin facilities.[15] [Program Code(s): 11550]	[5] N/A
(e) Resin Toll Milling facilities.[15] [Program Code(s): 11555]	[5] N/A
(f) Other facilities [6] [Program Code(s): 11700]	[5] N/A
(3) Licenses that authorize the receipt of byproduct material, as defined in Section 11e.(2) of the Atomic Energy Act, from other persons for possession and disposal, except those licenses subject to the fees in Category 2.A.(2) or Category 2.A.(4).[15] [Program Code(s): 11600, 12000]	[5] N/A
(4) Licenses that authorize the receipt of byproduct material, as defined in Section 11e.(2) of the Atomic Energy Act, from other persons for possession and disposal incidental to the disposal of the uranium waste tailings generated by the licensee's milling operations, except those licenses subject to the fees in Category 2.A.(2).[15] [Program Code(s): 12010]	N/A
B. Licenses which authorize the possession, use, and/or installation of source material for shielding.[16 17] Application [Program Code(s): 11210]	$2,700
C. Licenses to distribute items containing source material to persons exempt from the licensing requirements of part 40 of this chapter. [Program Code: 11240]	$8,900
D. Licenses to distribute source material to persons generally licensed under part 40 of this chapter. [Program Code(s): 11230 and 11231]	$5,100
E. Licenses for possession and use of source material for processing or manufacturing of products or materials containing source material for commercial distribution. [Program Code: 11710]	$6,300
F. All other source material licenses. [Program Code(s): 11200, 11220, 11221, 11300, 11800, 11810, 11820]	$8,500
3. Byproduct material:	
A. Licenses of broad scope for possession and use of byproduct material issued under parts 30 and 33 of this chapter for processing or manufacturing of items containing byproduct material for commercial distribution. Number of locations of use: 1–5. [Program Code(s): 03211, 03212, 03213]	$27,400
(1). Licenses of broad scope for the possession and use of byproduct material issued under parts 30 and 33 of this chapter for processing or manufacturing of items containing byproduct material for commercial distribution. Number of locations of use: 6–20. [Program Code(s): 04010, 04012, 04014]	$36,400
(2). Licenses of broad scope for the possession and use of byproduct material issued under parts 30 and 33 of this chapter for processing or manufacturing of items containing byproduct material for commercial distribution. Number of locations of use: More than 20. [Program Code(s): 04011, 04013, 04015]	$45,500
B. Other licenses for possession and use of byproduct material issued under part 30 of this chapter for processing or manufacturing of items containing byproduct material for commercial distribution. Number of locations of use: 1–5. [Program Code(s): 03214, 03215, 22135, 22162]	$9,600
(1). Other licenses for possession and use of byproduct material issued under part 30 of this chapter for processing or manufacturing of items containing byproduct material for commercial distribution. Number of locations of use: 6–20. [Program Code(s): 04110, 04112, 04114, 04116]	$12,700
(2). Other licenses for possession and use of byproduct material issued under part 30 of this chapter for processing or manufacturing of items containing byproduct material for commercial distribution. Number of locations of use: More than 20. [Program Code(s): 04111, 04113, 04115, 04117]	$15,800
C. Licenses issued under §§ 32.72 and/or 32.74 of this chapter that authorize the processing or manufacturing and distribution or redistribution of radiopharmaceuticals, generators, reagent kits, and/or sources and devices containing byproduct material. This category does not apply to licenses issued to nonprofit educational institutions whose processing or manufacturing is exempt under § 170.11(a)(4) of this chapter. Number of locations of use: 1–5. [Program Code(s): 02500, 02511, 02513]	$9,000

TABLE 2 TO PARAGRAPH (d)—SCHEDULE OF MATERIALS ANNUAL FEES AND FEES FOR GOVERNMENT AGENCIES LICENSED BY NRC—Continued

[See footnotes at end of table]

Category of materials licenses	Annual fees [1 2 3]
(1). Licenses issued under §§ 32.72 and/or 32.74 of this chapter that authorize the processing or manufacturing and distribution or redistribution of radiopharmaceuticals, generators, reagent kits, and/or sources and devices containing byproduct material. This category does not apply to licenses issued to nonprofit educational institutions whose processing or manufacturing is exempt under § 170.11(a)(4). Number of locations of use: 6–20. [Program Code(s): 04210, 04212, 04214]	$12,000
(2). Licenses issued under §§ 32.72 and/or 32.74 of this chapter that authorize the processing or manufacturing and distribution or redistribution of radiopharmaceuticals, generators, reagent kits, and/or sources and devices containing byproduct material. This category does not apply to licenses issued to nonprofit educational institutions whose processing or manufacturing is exempt under § 170.11(a)(4). Number of locations of use: more than 20. [Program Code(s): 04211, 04213, 04215]	$16,200
D. [Reserved]	[5] N/A
E. Licenses for possession and use of byproduct material in sealed sources for irradiation of materials in which the source is not removed from its shield (self-shielded units) [Program Code(s): 03510, 03520]	$9,900
F. Licenses for possession and use of less than or equal to 10,000 curies of byproduct material in sealed sources for irradiation of materials in which the source is exposed for irradiation purposes. This category also includes underwater irradiators for irradiation of materials in which the source is not exposed for irradiation purposes [Program Code(s): 03511]	$8,900
G. Licenses for possession and use of greater than 10,000 curies of byproduct material in sealed sources for irradiation of materials in which the source is exposed for irradiation purposes. This category also includes underwater irradiators for irradiation of materials in which the source is not exposed for irradiation purposes [Program Code(s): 03521]	$72,100
H. Licenses issued under subpart A of part 32 of this chapter to distribute items containing byproduct material that require device review to persons exempt from the licensing requirements of part 30 of this chapter, except specific licenses authorizing redistribution of items that have been authorized for distribution to persons exempt from the licensing requirements of part 30 of this chapter [Program Code(s): 03254, 03255, 03257]	$8,700
I. Licenses issued under subpart A of part 32 of this chapter to distribute items containing byproduct material or quantities of byproduct material that do not require device evaluation to persons exempt from the licensing requirements of part 30 of this chapter, except for specific licenses authorizing redistribution of items that have been authorized for distribution to persons exempt from the licensing requirements of part 30 of this chapter [Program Code(s): 03250, 03251, 03253, 03256]	$17,400
J. Licenses issued under subpart B of part 32 of this chapter to distribute items containing byproduct material that require sealed source and/or device review to persons generally licensed under part 31 of this chapter, except specific licenses authorizing redistribution of items that have been authorized for distribution to persons generally licensed under part 31 of this chapter [Program Code(s): 03240, 03241, 03243]	$3,600
K. Licenses issued under subpart B of part 32 of this chapter to distribute items containing byproduct material or quantities of byproduct material that do not require sealed source and/or device review to persons generally licensed under part 31 of this chapter, except specific licenses authorizing redistribution of items that have been authorized for distribution to persons generally licensed under part 31 of this chapter [Program Code(s): 03242, 03244]	$2,700
L. Licenses of broad scope for possession and use of byproduct material issued under parts 30 and 33 of this chapter for research and development that do not authorize commercial distribution. Number of locations of use: 1–5. [Program Code(s): 01100, 01110, 01120, 03610, 03611, 03612, 03613]	$12,500
(1) Licenses of broad scope for possession and use of product material issued under parts 30 and 33 of this chapter for research and development that do not authorize commercial distribution. Number of locations of use: 6–20. [Program Code(s): 04610, 04612, 04614, 04616, 04618, 04620, 04622]	$16,600
(2) Licenses of broad scope for possession and use of byproduct material issued under parts 30 and 33 of this chapter for research and development that do not authorize commercial distribution. Number of locations of use: More than 20. [Program Code(s): 04611, 04613, 04615, 04617, 04619, 04621, 04623]	$20,700
M. Other licenses for possession and use of byproduct material issued under part 30 of this chapter for research and development that do not authorize commercial distribution [Program Code(s): 03620]	$13,400
N. Licenses that authorize services for other licensees, except: (1) Licenses that authorize only calibration and/or leak testing services are subject to the fees specified in fee Category 3.P.; and (2) Licenses that authorize waste disposal services are subject to the fees specified in fee categories 4.A., 4.B., and 4.C.[21] [Program Code(s): 03219, 03225, 03226]	$15,200
O. Licenses for possession and use of byproduct material issued under part 34 of this chapter for industrial radiography operations. This category also includes the possession and use of source material for shielding authorized under part 40 of this chapter when authorized on the same license Number of locations of use: 1–5. [Program Code(s): 03310, 03320]	$29,100

TABLE 2 TO PARAGRAPH (d)—SCHEDULE OF MATERIALS ANNUAL FEES AND FEES FOR GOVERNMENT AGENCIES LICENSED BY NRC—Continued

[See footnotes at end of table]

Category of materials licenses	Annual fees [1 2 3]
(1). Licenses for possession and use of byproduct material issued under part 34 of this chapter for industrial radiography operations. This category also includes the possession and use of source material for shielding authorized under part 40 of this chapter when authorized on the same license. Number of locations of use: 6–20. [Program Code(s): 04310, 04312]	$38,700
(2). Licenses for possession and use of byproduct material issued under part 34 of this chapter for industrial radiography operations. This category also includes the possession and use of source material for shielding authorized under part 40 of this chapter when authorized on the same license. Number of locations of use: More than 20. [Program Code(s): 04311, 04313]	$48,600
P. All other specific byproduct material licenses, except those in Categories 4.A. through 9.D.[18] Number of locations of use: 1–5. [Program Code(s): 02400, 02410, 03120, 03121, 03122, 03123, 03124, 03140, 03130, 03220, 03221, 03222, 03800, 03810, 22130]	$9,900
(1). All other specific byproduct material licenses, except those in Categories 4.A. through 9.D.[18] Number of locations of use: 6–20. [Program Code(s): 04410, 04412, 04414, 04416, 04418, 04420, 04422, 04424, 04426, 04428, 04430, 04432, 04434, 04436, 04438]	$13,100
(2). All other specific byproduct material licenses, except those in Categories 4.A. through 9.D.[18] Number of locations of use: More than 20. [Program Code(s): 04411, 04413, 04415, 04417, 04419, 04421, 04423, 04425, 04427, 04429, 04431, 04433, 04435, 04437, 04439]	$16,300
Q. Registration of devices generally licensed under part 31 of this chapter	[13] N/A
R. Possession of items or products containing radium–226 identified in § 31.12 of this chapter which exceed the number of items or limits specified in that section: [14]	
(1). Possession of quantities exceeding the number of items or limits in § 31.12(a)(4), or (5) of this chapter but less than or equal to 10 times the number of items or limits specified [Program Code(s): 02700]	$6,000
(2). Possession of quantities exceeding 10 times the number of items or limits specified in § 31.12(a)(4) or (5) of this chapter [Program Code(s): 02710]	$6,400
S. Licenses for production of accelerator-produced radionuclides [Program Code(s): 03210]	$23,800
4. Waste disposal and processing:	
A. Licenses specifically authorizing the receipt of waste byproduct material, source material, or special nuclear material from other persons for the purpose of contingency storage or commercial land disposal by the licensee; or licenses authorizing contingency storage of low-level radioactive waste at the site of nuclear power reactors; or licenses for receipt of waste from other persons for incineration or other treatment, packaging of resulting waste and residues, and transfer of packages to another person authorized to receive or dispose of waste material. [Program Code(s): 03231, 03233, 03236, 06100, 06101]	$22,500
B. Licenses specifically authorizing the receipt of waste byproduct material, source material, or special nuclear material from other persons for the purpose of packaging or repackaging the material. The licensee will dispose of the material by transfer to another person authorized to receive or dispose of the material. [Program Code(s): 03234]	$15,800
C. Licenses specifically authorizing the receipt of prepackaged waste byproduct material, source material, or special nuclear material from other persons. The licensee will dispose of the material by transfer to another person authorized to receive or dispose of the material. [Program Code(s): 03232]	$8,700
5. Well logging:	
A. Licenses for possession and use of byproduct material, source material, and/or special nuclear material for well logging, well surveys, and tracer studies other than field flooding tracer studies. [Program Code(s): 03110, 03111, 03112]	$12,500
B. Licenses for possession and use of byproduct material for field flooding tracer studies. [Program Code(s): 03113]	[5] N/A
6. Nuclear laundries:	
A. Licenses for commercial collection and laundry of items contaminated with byproduct material, source material, or special nuclear material. [Program Code(s): 03218]	$28,100
7. Medical licenses:	
A. Licenses issued under parts 30, 35, 40, and 70 of this chapter for human use of byproduct material, source material, or special nuclear material in sealed sources contained in gamma stereotactic radiosurgery units, teletherapy devices, or similar beam therapy devices. This category also includes the possession and use of source material for shielding when authorized on the same license.[9] Number of locations of use: 1–5. [Program Code(s): 02300, 02310]	$27,100
(1). Licenses issued under parts 30, 35, 40, and 70 of this chapter for human use of byproduct material, source material, or special nuclear material in sealed sources contained in gamma stereotactic radiosurgery units, teletherapy devices, or similar beam therapy devices. This category also includes the possession and use of source material for shielding when authorized on the same license.[9] Number of locations of use: 6–20. [Program Code(s): 04510, 04512]	$36,100

TABLE 2 TO PARAGRAPH (d)—SCHEDULE OF MATERIALS ANNUAL FEES AND FEES FOR GOVERNMENT AGENCIES LICENSED BY NRC—Continued

[See footnotes at end of table]

Category of materials licenses	Annual fees [1 2 3]
(2). Licenses issued under parts 30, 35, 40, and 70 of this chapter for human use of byproduct material, source material, or special nuclear material in sealed sources contained in gamma stereotactic radiosurgery units, teletherapy devices, or similar beam therapy devices. This category also includes the possession and use of source material for shielding when authorized on the same license.[9] Number of locations of use: More than 20. [Program Code(s): 04511, 04513]	$45,200
B. Licenses of broad scope issued to medical institutions or two or more physicians under parts 30, 33, 35, 40, and 70 of this chapter authorizing research and development, including human use of byproduct material, except licenses for byproduct material, source material, or special nuclear material in sealed sources contained in teletherapy devices. This category also includes the possession and use of source material for shielding when authorized on the same license.[9] Number of locations of use: 1–5. [Program Code(s): 02110]	$37,000
(1). Licenses of broad scope issued to medical institutions or two or more physicians under parts 30, 33, 35, 40, and 70 of this chapter authorizing research and development, including human use of byproduct material, except licenses for byproduct material, source material, or special nuclear material in sealed sources contained in teletherapy devices. This category also includes the possession and use of source material for shielding when authorized on the same license.[9] Number of locations of use: 6–20. [Program Code(s): 04710]	$49,300
(2). Licenses of broad scope issued to medical institutions or two or more physicians under parts 30, 33, 35, 40, and 70 of this chapter authorizing research and development, including human use of byproduct material, except licenses for byproduct material, source material, or special nuclear material in sealed sources contained in teletherapy devices. This category also includes the possession and use of source material for shielding when authorized on the same license.[9] Number of locations of use: More than 20. [Program Code(s): 04711]	$61,500
C. Other licenses issued under parts 30, 35, 40, and 70 of this chapter for human use of byproduct material, source material, and/or special nuclear material, except licenses for byproduct material, source material, or special nuclear material in sealed sources contained in teletherapy devices. This category also includes the possession and use of source material for shielding when authorized on the same license.[9 19] Number of locations of use: 1-5. [Program Code(s): 02120, 02121, 02200, 02201, 02210, 02220, 02230, 02231, 02240, 22160]	$16,800
(1). Other licenses issued under parts 30, 35, 40, and 70 of this chapter for human use of byproduct material, source material, and/or special nuclear material, except licenses for byproduct material, source material, or special nuclear material in sealed sources contained in teletherapy devices. This category also includes the possession and use of source material for shielding when authorized on the same license.[9 19] Number of locations of use: 6–20. [Program Code(s): 04810, 04812, 04814, 04816, 04818, 04820, 04822, 04824, 04826, 04828]	$16,900
(2). Other licenses issued under parts 30, 35, 40, and 70 of this chapter for human use of byproduct material, source material, and/or special nuclear material, except licenses for byproduct material, source material, or special nuclear material in sealed sources contained in teletherapy devices. This category also includes the possession and use of source material for shielding when authorized on the same license.[9 19] Number of locations of use: More than 20. [Program Code(s): 04811, 04813, 04815, 04817, 04819, 04821, 04823, 04825, 04827, 04829]	$20,900
8. Civil defense:	
A. Licenses for possession and use of byproduct material, source material, or special nuclear material for civil defense activities. [Program Code(s): 03710]	$6,000
9. Device, product, or sealed source safety evaluation:	
A. Registrations issued for the safety evaluation of devices or products containing byproduct material, source material, or special nuclear material, except reactor fuel devices, for commercial distribution	$17,900
B. Registrations issued for the safety evaluation of devices or products containing byproduct material, source material, or special nuclear material manufactured in accordance with the unique specifications of, and for use by, a single applicant, except reactor fuel devices	$9,300
C. Registrations issued for the safety evaluation of sealed sources containing byproduct material, source material, or special nuclear material, except reactor fuel, for commercial distribution	$5,500
D. Registrations issued for the safety evaluation of sealed sources containing byproduct material, source material, or special nuclear material, manufactured in accordance with the unique specifications of, and for use by, a single applicant, except reactor fuel	$1,100
10. Transportation of radioactive material:	
A. Certificates of Compliance or other package approvals issued for design of casks, packages, and shipping containers.	
1. Spent Fuel, High-Level Waste, and plutonium air packages	[6]
2. Other Casks	[6]
B. Quality assurance program approvals issued under part 71 of this chapter.	
1. Users and Fabricators	[6] N/A
2. Users	[6] N/A

TABLE 2 TO PARAGRAPH (d)—SCHEDULE OF MATERIALS ANNUAL FEES AND FEES FOR GOVERNMENT AGENCIES LICENSED BY NRC—Continued

[See footnotes at end of table]

Category of materials licenses	Annual fees [1 2 3]
C. Evaluation of security plans, route approvals, route surveys, and transportation security devices (including immobilization devices)	[6] N/A
11. Standardized spent fuel facilities	[6] N/A
12. Special Projects [Program Code(s): 25110]	[6] N/A
13. A. Spent fuel storage cask Certificate of Compliance	[6] N/A
B. General licenses for storage of spent fuel under § 72.210 of this chapter	[12] N/A
14. Decommissioning/Reclamation:	
A. Byproduct, source, or special nuclear material licenses and other approvals authorizing decommissioning, decontamination, reclamation, or site restoration activities under parts 30, 40, 70, 72, and 76 of this chapter, including master materials licenses (MMLs). The transition to this fee category occurs when a licensee has permanently ceased principal activities. [Program Code(s): 03900, 11900, 21135, 21215, 21325, 22200]	[7 20] N/A
B. Site-specific decommissioning activities associated with unlicensed sites, including MMLs, whether or not the sites have been previously licensed	[7] N/A
15. Import and Export licenses	[8] N/A
16. Reciprocity	[8] N/A
17. Master materials licenses of broad scope issued to Government agencies.[15] [Program Code(s): 03614]	$340,000
18. Department of Energy:	
A. Certificates of Compliance	[10] $1,354,000
B. Uranium Mill Tailings Radiation Control Act (UMTRCA) activities [Program Code(s): 03237, 03238]	$117,000

[1] Annual fees will be assessed based on whether a licensee held a valid license with the NRC authorizing possession and use of radioactive material during the current FY. The annual fee is waived for those materials licenses and holders of certificates, registrations, and approvals who either filed for termination of their licenses or approvals or filed for possession only/storage licenses before October 1 of the current FY, and permanently ceased licensed activities entirely before this date. Annual fees for licensees who filed for termination of a license, downgrade of a license, or for a possession-only license during the FY and for new licenses issued during the FY will be prorated in accordance with the provisions of § 171.17. If a person holds more than one license, certificate, registration, or approval, the annual fee(s) will be assessed for each license, certificate, registration, or approval held by that person. For licenses that authorize more than one activity on a single license (*e.g.,* human use and irradiator activities), annual fees will be assessed for each category applicable to the license.

[2] Payment of the prescribed annual fee does not automatically renew the license, certificate, registration, or approval for which the fee is paid. Renewal applications must be filed in accordance with the requirements of part 30, 40, 70, 71, 72, or 76 of this chapter.

[3] Each FY, fees for these materials licenses will be calculated and assessed in accordance with § 171.13 and will be published in the **Federal Register** for notice and comment.

[4] Other facilities include licenses for extraction of metals, heavy metals, and rare earths.

[5] There are no existing NRC licenses in these fee categories. If NRC issues a license for these categories, the Commission will consider establishing an annual fee for this type of license.

[6] Standardized spent fuel facilities, 10 CFR parts 71 and 72 Certificates of Compliance and related Quality Assurance program approvals, and special reviews, such as topical reports, are not assessed an annual fee because the generic costs of regulating these activities are primarily attributable to users of the designs, certificates, and topical reports.

[7] Licensees in this category are not assessed an annual fee because they are charged an annual fee in other categories while they are licensed to operate.

[8] No annual fee is charged because it is not practical to administer due to the relatively short life or temporary nature of the license.

[9] Separate annual fees will not be assessed for pacemaker licenses issued to medical institutions that also hold nuclear medicine licenses under fee categories 7.A, 7.A.1, 7.A.2, 7.B., 7.B.1, 7.B.2, 7.C, 7.C.1, or 7.C.2.

[10] This includes Certificates of Compliance issued to the U.S. Department of Energy that are not funded from the Nuclear Waste Fund.

[11] See § 171.15(c).

[12] See § 171.15(c).

[13] No annual fee is charged for this category because the cost of the general license registration program applicable to licenses in this category will be recovered through 10 CFR part 170 fees.

[14] Persons who possess radium sources that are used for operational purposes in another fee category are not also subject to the fees in this category. (This exception does not apply if the radium sources are possessed for storage only.)

[15] Licensees subject to fees under categories 1.A., 1.B., 1.E., 2.A., and licensees paying fees under fee category 17 must pay the largest applicable fee and are not subject to additional fees listed in this table.

[16] Licensees paying fees under 3.C. are not subject to fees under 2.B. for possession and shielding authorized on the same license.

[17] Licensees paying fees under 7.C. are not subject to fees under 2.B. for possession and shielding authorized on the same license.

[18] Licensees paying fees under 3.N. are not subject to paying fees under 3.P., 3.P.1, or 3.P.2 for calibration or leak testing services authorized on the same license.

[19] Licensees paying fees under 7.B., 7.B.1, or 7.B.2 are not subject to paying fees under 7.C., 7.C.1, or 7.C.2 for broad scope license licenses issued under parts 30, 35, 40, and 70 of this chapter for human use of byproduct material, source material, and/or special nuclear material, except licenses for byproduct material, source material, or special nuclear material in sealed sources contained in teletherapy devices authorized on the same license.

[20] No annual fee is charged for a materials license (or part of a materials license) that has transitioned to this fee category because the decommissioning costs will be recovered through 10 CFR part 170 fees, but annual fees may be charged for other activities authorized under the license that are not in decommissioning status.

[21] Licensees paying fees under 4.A., 4.B. or 4.C. are not subject to paying fees under 3.N. licenses that authorize services for other licensees authorized on the same license.

[64 FR 31476, June 10, 1999; 64 FR 38816, July 20, 1999]

EDITORIAL NOTE: For FEDERAL REGISTER citations affecting § 171.16, see the List of CFR Sections Affected, which appears in the Finding Aids section of the printed volume and at *www.govinfo.gov*.

§ 171.17 Proration.

Annual fees will be prorated for NRC licensees as follows:

(a) Reactors, 10 CFR part 72 licensees who do not hold 10 CFR part 50 or 10 CFR part 52 licenses, and materials licenses with annual fees of $100,000 or greater for a single fee category. The NRC will base the proration of annual fees for terminated and downgraded licenses on the fee rule in effect at the time the action is official. The NRC will base the determinations on the proration requirements under paragraphs (a)(2) and (3) of this section.

(1) *New licenses.* (i) The annual fees for new licenses for power reactors and small modular reactors that are subject to fees under this part, for which the licensee has notified the NRC on or after October 1 of a fiscal year (FY) that the licensee has successfully completed power ascension testing, are prorated on the basis of the number of days remaining in the FY. Thereafter, the full annual fee is due and payable each subsequent FY.

(ii) The annual fees for new licenses for non-power production or utilization facilities, 10 CFR part 72 licensees who do not hold 10 CFR part 50 or 52 licenses, and materials licenses with annual fees of $100,000 or greater for a single fee category for the current FY, that are subject to fees under this part and are granted a license to operate on or after October 1 of a FY, are prorated on the basis of the number of days remaining in the FY. Thereafter, the full annual fee is due and payable each subsequent FY.

(2) *Terminations.* The base operating power reactor annual fee for operating reactor licensees or the annual fee for small modular reactor licensees, who have requested amendment to withdraw operating authority permanently during the FY will be prorated based on the number of days during the FY the license was in effect before docketing of the certifications for permanent cessation of operations and permanent removal of fuel from the reactor vessel or when a final legally effective order to permanently cease operations has come into effect. The spent fuel storage/reactor decommissioning annual fee for reactor licensees who permanently cease operations and have permanently removed fuel from the site during the FY will be prorated on the basis of the number of days remaining in the FY after docketing of both the certifications of permanent cessation of operations and permanent removal of fuel from the site. The spent fuel storage/reactor decommissioning annual fee will be prorated for those 10 CFR part 72 licensees who do not hold a 10 CFR part 50 or 52 license who request termination of the 10 CFR part 72 license and permanently cease activities authorized by the license during the FY based on the number of days the license was in effect before receipt of the termination request. The annual fee for materials licenses with annual fees of $100,000 or greater for a single fee category for the current FY will be prorated based on the number of days remaining in the FY when a termination request or a request for a possession-only license is received by the NRC, provided the licensee permanently ceased licensed activities during the specified period. The annual fee for non-power production or utilization facilities will be prorated based on the number of days remaining in the FY when the authorization to operate the facility has been permanently removed from the license during the FY.

(3) *Downgraded licenses.* The annual fee for a materials license with an annual fee of $100,000 or greater for a single fee category for the current FY, that is subject to fees under this part and downgraded on or after October 1 of a FY, is automatically prorated by the agency on the basis of the number of days remaining in the FY when the application for downgrade is received and approved by the NRC, provided the licensee permanently ceased the stated activities during the specified period.

(b) Materials licenses (excluding 10 CFR part 72 licenses and materials license with annual fees of $100,000 or greater for a single fee category, included in § 171.17(a)).

(1) *New licenses.* The annual fee for a materials license that is subject to fees under this part and issued on or after October 1 of the FY is prorated on the basis of when the NRC issues the new license. New licenses issued during the period October 1 through March 31 of the FY will be assessed one-half the annual fee for that FY. New licenses issued on or after April 1 of the FY will not be assessed an annual fee for that FY. Thereafter, the full fee is due and payable each subsequent FY.

(2) *Terminations.* The annual fee will be prorated for licenses for which a termination request or a request for a POL has been received on or after October 1 of a FY on the basis of when the application for termination or POL is received by the NRC provided the licensee permanently ceased licensed activities during the specified period. Licenses for which applications for termination or POL are filed during the period October 1 through March 31 of the FY are assessed one-half the annual fee for the applicable category(ies) for that FY. Licenses for which applications for termination or POL are filed on or after April 1 of the FY are assessed the full annual fee for that FY. Materials licenses transferred to a new Agreement State during the FY are considered terminated by the NRC, for annual fee purposes, on the date that the Agreement with the State becomes effective; therefore, the same proration provisions will apply as if the licenses were terminated.

(3) *Downgraded licenses.* (i) The annual fee for a materials license that is subject to fees under this part and downgraded on or after October 1 of a FY is automatically prorated on the basis of the date when the application for downgrade is received and approved by the NRC, provided the licensee permanently ceased the stated activities during the specified period.

(ii) Annual fees for licenses for which applications to downgrade are filed during the period October 1 through March 31 of the FY will be prorated as follows:

(A) Licenses for which applications have been filed to reduce the scope of the license from a higher fee category(ies) to a lower fee category(ies) will be assessed one-half the annual fee for the higher fee category and one-half the annual fee for the lower fee category(ies), and, if applicable, the full annual fee for fee categories not affected by the downgrade; and

(B) Licenses with multiple fee categories for which applications have been filed to downgrade by deleting a fee category will be assessed one-half the annual fee for the fee category being deleted and the full annual fee for the remaining categories.

(iii) Licenses for which applications to downgrade are filed on or after April 1 of the FY are assessed the full fee for that FY.

[72 FR 31431, June 6, 2007, as amended at 77 FR 35835, June 15, 2012; 83 FR 29657, June 25, 2018; 85 FR 37277, June 19, 2020; 86 FR 32183, June 16, 2021]

§ 171.19 Payment.

(a) *Method of payment.* Annual fee payments, made payable to the U.S. Nuclear Regulatory Commission, are to be made in U.S. funds by electronic funds transfer such as ACH (Automated Clearing House) using EDI (Electronic Data Interchange), check, draft, money order, or credit card. Federal agencies may also make payment by the On-line Payment and Collection System (OPAC's). Where specific payment instructions are provided on the invoices to applicants and licensees, payment should be made accordingly, e.g. invoices of $5,000 or more should be paid via ACH through NRC's Lockbox Bank at the address indicated on the invoice. Credit card payments should be made up to the limit established by the credit card bank, in accordance with specific instructions provided with the invoices, to the Lockbox Bank designated for credit card payments. In accordance with Department of the Treasury requirements, refunds will only be made upon receipt of information on the payee's financial institution and bank accounts.

(b) Annual fees in the amount of $100,000 or more and described in the FEDERAL REGISTER document issued under § 171.13, must be paid in quarterly installments of 25 percent as billed by the NRC. The quarters begin on October 1, January 1, April 1, and July 1 of each fiscal year. The NRC will adjust the fourth quarterly invoice to recover

the full amount of the revised annual fee. If the amounts collected in the first three quarters exceed the amount of the revised annual fee, the overpayment will be refunded. Licensees whose annual fee for the previous fiscal year was less than $100,000 (billed on the anniversary date of the license), and whose revised annual fee for the current fiscal year is $100,000 or greater (subject to quarterly billing), will be issued a bill upon publication of the final rule for the full amount of the revised annual fee for the current fiscal year, less any payments received for the current fiscal year based on the anniversary date billing process.

(c) Annual fees that are less than $100,000 are billed on the anniversary date of the license. For annual fee purposes, the anniversary date of the license is considered to be the first day of the month in which the original license was issued by the NRC. Licensees that are billed on the license anniversary date will be assessed the annual fee in effect on the anniversary date of the license. Materials licenses subject to the annual fee that are terminated during the fiscal year but before the anniversary month of the license will be billed upon termination for the fee in effect at the time of the billing. New materials licenses subject to the annual fee will be billed in the month the license is issued or in the next available monthly billing for the fee in effect on the anniversary date of the license. Thereafter, annual fees for new licenses will be assessed in the anniversary month of the license.

(d) Annual fees of less than $100,000 must be paid as billed by the NRC. Materials license annual fees that are less than $100,000 are billed on the anniversary date of the license. The materials licensees that are billed on the anniversary date of the license are those covered by fee categories 1.C., 1.D., 1.F., and 2.A.(2) through 9.D.

(e) Payment is due on the invoice date and interest accrues from the date of the invoice. However, interest will be waived if payment is received within 30 days from the invoice date.

(f) The NRC is entitled to collect any underpayment of fees as a result of an error by the NRC.

[65 FR 36968, June 12, 2000, as amended at 66 FR 32478, June 14, 2001; 71 FR 30755, May 30, 2006; 71 FR 33190, June 8, 2006; 72 FR 31432, June 6, 2007; 78 FR 39491, July 1, 2013; 79 FR 37154, June 30, 2014; 82 FR 30708, June 30, 2017]

§ 171.21 [Reserved]

§ 171.23 Enforcement.

If any person required to pay the annual fee fails to pay when the fee is due, or files a false certification with respect to qualifying as a small entity under the Regulatory Flexibility Criteria, the Commission may refuse to process any application submitted by or on behalf of the person with respect to any license issued to the person and may suspend or revoke any licenses held by the person. The filing of a false certification to qualify as a small entity under § 171.16(c) of this part may also result in punitive action pursuant to 18 U.S.C. 1001.

[56 FR 31510, July 10, 1991]

§ 171.25 Collection, interest, penalties, and administrative costs.

All annual fees in §§ 171.15 and 171.16 will be collected pursuant to the procedures of 10 CFR part 15. Interest, penalties and administrative costs for late payments will be assessed in accordance with 10 CFR part 15, of this chapter, 4 CFR part 102, and other relevant regulations of the United States Government, as appropriate. In the event a quarterly installment is not made by the appropriate due date specified in § 171.19, the full fee becomes due and payable, with interest, penalties, and administrative costs of collection calculated from the date that quarterly installment was due.

[56 FR 31511, July 10, 1991]

§ 171.26 Right to dispute assessed fees.

All debtors' disputes of fees assessed must be submitted in accordance with 10 CFR 15.31.

[86 FR 32183, June 16, 2021]

PARTS 172–199 [RESERVED]