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## NUCLEAR REGULATORY COMMISSION

### 10 CFR Parts 50 and 70

**RIN 3150–AF87**

### Criticality Accident Requirements

**AGENCY:** Nuclear Regulatory Commission.

**ACTION:** Final rule.

**SUMMARY:** The U.S. Nuclear Regulatory Commission (NRC) is amending its regulations to give licensees of light-water nuclear power reactors greater flexibility in meeting the requirement that licensees authorized to possess more than a small amount of special nuclear material (SNM) maintain a criticality monitoring system in each area in which the material is handled, used, or stored. This action is taken as a result of the experience gained in processing and evaluating a number of exemption requests from such licensees and NRC's safety assessments in response to these requests that concluded that the likelihood of criticality was negligible.

**EFFECTIVE DATE:** The final rule is effective on December 14, 1998.

**FOR FURTHER INFORMATION CONTACT:** Michael T. Jamgochian, Office of Nuclear Reactor Regulation, U.S. Nuclear Regulatory Commission, Washington, DC 20555–0001; telephone: (301) 415–3224; e-mail: mtj1@nrc.gov.

**SUPPLEMENTARY INFORMATION:**

## I. Background

The U.S. Nuclear Regulatory Commission (NRC) is amending its regulations to give persons licensed to construct or operate light-water nuclear power reactors the option of either meeting the criticality accident requirements of paragraph (a) through (c) of 10 CFR 70.24 in handling and storage areas for SNM, or electing to comply with certain requirements that are set forth in a new Section 50.68 in 10 CFR Part 50. The requirements in Section 50.68 are generally the requirements that the NRC has used to grant specific exemptions from the requirements of 10 CFR 70.24. In addition, the NRC is deleting the current text of Section 70.24(d) concerning the granting of specific exemptions from Section 70.24 because it is redundant to 10 CFR 70.14(a). Section 70.24(d) is rewritten to provide that the requirements in paragraphs (a) through (c) of 10 CFR 70.24 do not apply to holders of a construction permit or operating license for a nuclear power reactor issued under 10 CFR Part 50, or combined licenses issued under 10 CFR Part 52, if the holders comply with the requirements of 10 CFR 50.68(b).

## II. Discussion

On December 3, 1997 (62 FR 63825), the NRC published a direct final rule in the **Federal Register** that would have provided persons licensed to construct or operate light-water nuclear power reactors with the option of either meeting the criticality accident requirements of paragraph (a) of 10 CFR 70.24 in handling and storage areas for SNM, or electing to comply with requirements that would be incorporated into 10 CFR Part 50 at 10 CFR 50.68. A direct final rule (62 FR 63825) and a parallel proposed rule (62 FR 63911) amending Parts 70 and 50 were published in the **Federal Register** on December 3, 1997. The statement of considerations for the direct final rule and the proposed rule stated that if significant adverse comments were received on the direct final rule, the NRC would withdraw the direct final rule and would address the comments in a subsequent final rule. Significant adverse comments were received from the public, and on February 25, 1998, the NRC published a notice withdrawing the direct final rule and revoking the regulatory text. Since the direct final rule had an effective date of February 17, 1998, it was necessary for the February 25, 1998 notice to revoke the regulatory text which became effective on February 17, 1998, as well as to withdraw the direct final rule. With the withdrawal and revocation, the proposed rule is the only regulatory proposal remaining. The NRC has determined to modify the proposed rule to address public comments and to make several editorial clarifications. The analysis of and response to the public comments to the proposed rule are set forth below.

## III. Comments on the Proposed Rule

The NRC received comments on the December 3, 1997, proposed rule (62 FR 63911) from Commonwealth Edison, Carolina Power & Light Company, Southern Nuclear Operating Company, Nuclear Energy Institute, Northern States Power Company, Trojan Nuclear Plant, and Detroit Edison. Copies of the letters are available for public inspection and copying for a fee at the Commission's Public Document Room, located at 2120 L Street, NW. (Lower Level), Washington, DC. Many of the comment letters suggested editorial type changes, some of which have been incorporated into this final rule. The comments are classified into nine general comments and are addressed as follows:

*Comment 1:* The proposed rule should not prohibit licensees from applying for exemptions under the guidelines of 10 CFR 70.14 and should contain provisions to note that any existing approved exemptions remain valid.

*Response:* Even though the wording of paragraph (d) in the current version of 10 CFR 70.24, which provides for applying for exemptions should ''good cause'' exist, is being deleted, licensees are not prohibited from applying for such exemptions under the guidelines of paragraph (a) of 10 CFR 70.14, ''Specific Exemptions.''

The standard for issuance of exemptions under Section 70.14 is essentially the same as the ''good cause'' criterion in paragraph (d) of Section 70.24. Therefore, its removal from Section 70.24(d) will not change the standard for, or otherwise serve to limit the granting of, exemptions to Section 70.24.

This rulemaking does not affect the status of exemptions to the requirements of Section 70.24 that were previously granted by the NRC. A licensee currently holding an exemption to Section 70.24 may continue operation under its existing exemption (including any applicable conditions imposed as part of the granting of the exemption) and its current programs and commitments without any further action. Alternatively, a licensee

currently holding exemptions to Section 70.24 may elect to comply with the new alternative provided under Section 50.68(b), but if it does so, its exemption would be inapplicable and would not serve as a basis for avoiding compliance with the criteria listed in Section 50.68(b). A licensee whose exemption was issued as part of its operating license and whose exemption contained conditions imposed as part of the granting of the exemption, need not apply for a license amendment to delete the exemption conditions as a prerequisite for complying with Section 50.68(b).

*Comment 2:* For many BWRs, optimum moderation calculations are not performed for the fresh fuel storage racks because administrative controls are in place to preclude these conditions. In accordance with vendor recommendations, compensatory measures have been established to preclude an optimum moderation condition in the fresh fuel storage racks. The rule should contain a provision that exempts this requirement if adequate controls have been established to preclude an optimum moderation condition.

*Response:* The NRC agrees and has added the following provision to 10 CFR 50.68(b)(3): ''This evaluation need not be performed if administrative control and/or design features prevent such moderation, or if fresh fuel storage racks are not used.''

*Comment 3.* The rule should eliminate the reference to General Design Criterion 63 (GDC 63) and should describe the underlying monitoring requirements.

*Response:* The reference to GDC 63 was initially incorporated to ensure that licensees receiving an exemption to 10 CFR 70.24 would not erroneously view the exemption as the basis for removing from the spent fuel pool area radiation monitors that were installed to meet other monitoring requirements, such as those contained in 10 CFR 20.1501 and GDC 63. This rule change does not affect these other monitoring requirements; therefore, referencing GDC 63 has been deleted.

*Comment 4.* Placing a limit on enrichment offers no direct safety benefit and should not be included.

*Response:* The NRC disagrees with the comment. The maximum allowable nominal enrichment of reactor fuel is currently limited to 5-weight percent on the basis of possible criticality concerns even in a dry environment, as well as currently approved extensions to 10 CFR 51.52 based on an environmental impact study for enrichments higher than 5-weight percent. Any future approved enrichment extension can be readily handled by modifying this criterion.

*Comment 5.* Replace ''may not permit'' with ''shall prohibit the'' in Criterion (1).

*Response:* The NRC agrees and has used the phrase suggested by the commenters.

*Comment 6.* Use of ''pure water'' and ''unborated water'' should be consistent.

*Response:* The NRC agrees. The final rule uses the term ''unborated water.''

*Comment 7.* Criteria (2) and (3) should not be applicable if the licensee does not use the fresh fuel storage racks.

*Response:* The NRC agrees and has added the following provision to 10 CFR 50.68 (b)(2) and (b)(3): ''This evaluation need not be performed if administrative controls and/or design features prevent such moderation or if fresh fuel storage racks are not used.''

*Comment 8.* The meaning of ''transportation'' in criterion (1) is unclear.

*Response:* The NRC agrees and has deleted the term.

*Comment 9.* The phrase ''maximum permissible U–235 enrichment'' in Criteria (2), (3), and (4) should be replaced by the phrase ''maximum fuel assembly reactivity.''

*Response:* The NRC agrees and has used the phrase suggested by the commenter.

## IV. Section-by-Section Analysis

*10 CFR 50.68*

Paragraph (a) of Section 50.68 allows a nuclear power plant licensee (including a holder of either a construction permit or a combined operating license) the option of complying with Section 70.24 (a) through (c), or complying with the requirements in paragraph (b) of Section 50.68. The corresponding provision in Section 70.24 is paragraph (d).

Paragraph (b) sets forth eight specific requirements which a licensee must comply with so long as it chooses under the provisions of Section 50.68 to avoid compliance with the requirements of Section 70.24 (a) through (c).

A licensee currently holding an exemption to Section 70.24 may elect to comply with the new alternative provided under Section 50.68, but if it does so, its exemption to Section 70.24 is inapplicable to, and would not serve as a basis for avoiding compliance with the eight criteria in Section 50.68(b).

*10 CFR 70.24*

Paragraph (d)(1) of Section 70.24 allows a nuclear power plant licensee (including a holder of either a construction permit or a combined operating license) the option of complying with Section 70.24 (a) through (c), or complying with the requirements in 10 CFR Section 50.68. This paragraph is the corresponding provision to Section 50.68(a).

Paragraph (d)(2) clarifies that the status of exemptions to the requirements of Section 70.24 that were previously granted by the NRC continue unaffected by this rulemaking. A licensee currently holding an exemption to Section 70.24 may continue operation under its existing exemption (including any applicable conditions imposed as part of the grant of the exemption) and its current programs and commitments without any further action.

A license that seeks an exemption from the requirements of Section 70.24 must meet the criteria for an exemption under Section 70.14. The standard for issuance of exemptions remains unchanged from the old rule, since the Commission regards the former ''good cause'' criterion under the previous version of Section 70.24(d) as being essentially the same as the standard for issuance of exemptions under Paragraph 70.14.

## V. Metric Policy

On October 7, 1992, the Commission published its final Policy Statement on Metrication. According to that policy, after January 7, 1993, all new regulations and major amendments to existing regulations were to be presented in dual units. The new addition and amendment to the regulations contain no units.

## VI. Finding of No Significant Environmental Impact

The NRC has determined under the National Environmental Policy Act of 1969, as amended, and the Commission's regulations in Subpart A of 10 CFR Part 51, that this rule, would not be a major Federal action significantly affecting the quality of the human environment; and therefore, an environmental impact statement is not required. The final rule provides an alternative to existing requirements on criticality monitoring. The alternative method contained in the final rule in the new Section 50.68 represents a codification of the criteria currently used by the NRC for granting exemptions from the criticality monitoring requirements in 10 CFR 70.24(a). These criteria provide an acceptable alternative for assuring that there are no inadvertent criticality events of special nuclear material at nuclear power reactors, which is the purpose of the criticality monitoring

requirements in Section 70.24(a). Experience over 15 years has demonstrated that the alternative criteria have been effective in preventing inadvertent criticality events, and the NRC concludes that as a matter of regulatory efficiency, there is no purpose to requiring licensees to apply for and obtain exemptions from requirements of Section 70.24(a) if they adhere to the alternative criteria in the new Section 50.68. Since the alternative contained in Section 50.68 provides an equally effective method for preventing inadvertent criticality events in nuclear power plants, the NRC concludes that the final rule will not have any significant impact on the quality of the human environment. Therefore, an environmental impact statement has not been prepared for this regulation. This discussion constitutes the environmental assessment for this rulemaking.

**VII. Paperwork Reduction Act Statement**

This final rule does not contain a new or amended information collection requirement subject to the Paperwork Reduction Act of 1995 (44 U.S.C. 3501 et seq.). Existing requirements were approved by the Office of Management and Budget, approval numbers 3150–0009 and 3150–0011.

**VIII. Public Protection Notification**

If an information collection does not display a currently valid OMB control number, the NRC may not conduct or sponsor, and a person is not required to respond to, the information collection.

**IX. Regulatory Analysis**

The current structure of the current 10 CFR 70.24 is overly broad and places a burden on a licensee to identify those areas or operations at its facility where the requirements are unnecessary, and to request an exemption if the licensee has sufficient reason to be relieved from the requirements. This existing structure has resulted in a large number of exemption requests.

To relieve the burden on power reactor licensees of applying for, and the burden on the NRC of granting exemptions, this amendment permits power reactor facilities with nominal fuel enrichments no greater than 5-weight percent of U–235 to be excluded from the scope of 10 CFR 70.24, provided they meet specific requirements being added to 10 CFR Part 50. This amendment is a result of the experience gained in processing and evaluating a number of exemption requests from power reactor licensees and NRC's safety assessments in response to these requests which concluded that the likelihood of criticality was negligible.

The only other viable option to this amendment is for the NRC to make no changes and allow the licensees to continue requesting exemptions. If no changes are made, the licensees will continue to incur the costs of submitting exemptions and NRC will incur the costs of reviewing them. Under this rule, an easing of the burden on licensees results from not having to request exemptions. Similarly, the NRC's burden will be reduced by avoiding the need to review and evaluate these exemption requests.

This rule is not a mandatory requirement, but an easing of burden action which results in regulatory efficiency. Also, the rule does not impose any additional costs on existing licensees and has no negative impact on public health and safety, but will provide savings to future licensees, and may provide some reduction in burden to current licensees whose current exemption includes conditions which are more restrictive than the requirements in Section 50.68. There will also be savings in resources to the NRC as well. Hence, the rule is shown to be cost beneficial.

The foregoing constitutes the regulatory analysis for this final rule.

**X. Regulatory Flexibility Certification**

In accordance with the Regulatory Flexibility Act of 1980, 5 U.S.C. 605(b), the NRC hereby certifies that this rule, if adopted, will not have a significant economic impact on a substantial number of small entities. This rule affects only the licensees of nuclear power plants. These licensee companies that are dominant in their service areas, do not fall within the scope of the definition of ''small entities'' set forth in the Regulatory Flexibility Act, 5 U.S.C. 601, or the size standards adopted by the NRC (10 CFR 2.810).

**XI. Backfit Analysis**

The NRC has determined that this rule does not impose a backfit as defined in 10 CFR 50.109(a)(1), since it provides an alternative to existing requirements on criticality monitoring. Accordingly, the NRC has not prepared a backfit analysis for this rule.

**XII. Small Business Regulatory Enforcement Fairness Act**

In accordance with the Small Business Regulatory Enforcement Fairness Act of 1996, the NRC has determined that this action is not a ''major rule'' and has verified this determination with the Office of Information and Regulatory Affairs, Office of Management and Budget.

**List of Subjects**

*10 CFR Part 50*

Antitrust, Classified information, Criminal penalties, Fire protection, Intergovernmental relations, Nuclear power plants and reactors, Radiation protection, Reactor siting criteria, Reporting and recordkeeping requirements.

*10 CFR Part 70*

Criminal penalties, Hazardous materials transportation, Material control and accounting, Nuclear materials, Packaging and containers, Radiation protection, Reporting and recordkeeping requirements, Scientific equipment, Security measures, Special nuclear material.

For the reasons stated in the preamble and under the authority of the Atomic Energy Act of 1954, as amended, the Energy Reorganization Act of 1974, as amended, the National Environmental Policy Act of 1969, as amended, and 5 U.S.C. 553, the NRC is adopting the following amendments to 10 CFR Parts 50 and 70:

## PART 50—DOMESTIC LICENSING OF PRODUCTION AND UTILIZATION FACILITIES

The authority citation for 10 CFR part 50 continues to read as follows:

1. **Authority:** Secs. 102, 103, 104, 105, 161, 182, 183, 186, 189, 68 Stat. 936, 937, 938, 948, 953, 954, 955, 956, as amended, sec. 234, 83 Stat. 444, as amended (42 U.S.C. 2132, 2133, 2134, 2135, 2201, 2232, 2233, 2236, 2239, 2282); secs. 201, as amended, 202, 206, 88 Stat. 1242, as amended 1244, 1246, (42 U.S.C. 5841, 5842, 5846).

Section 50.7 also issued under Pub. L. 95–601, sec. 10, 92 Stat. 2951, as amended by Pub. L. 102–486, sec. 2902, 106 Stat. 3123, (42 U.S.C. 5851). Section 50.10 also issued under secs. 101, 185, 68 Stat. 936, 955, as amended (42 U.S.C. 2131, 2235); sec. 102, Pub. L. 91–190, 83 Stat. 853 (42 U.S.C. 4332). Sections 50.13, 50.54(dd), and 50.103 also issued under sec. 108, 68 Stat. 939, as amended (42 U.S.C. 2138). Sections 50.23, 50.35, 50.55, and 50.56 also issued under sec. 185, 68 Stat. 955 (42 U.S.C. 2235). Sections 50.33a, 50.55a and Appendix Q also issued under sec. 102, Pub. L. 91–190, 83 Stat. 853 (42 U.S.C. 4332). Sections 50.34 and 50.54 also issued under sec. 204, 88 Stat. 1245 (42 U.S.C. 5844). Sections 50.58, 50.91, and 50.92 also issued under Pub. L. 97–415, 96 Stat. 2073 (42 U.S.C. 2239). Section 50.78 also issued under sec. 122, 68 Stat. 939 (42 U.S.C. 2152). Sections 50.80 and 50.81

also issued under sec. 184, 68 Stat. 954, as amended (42 U.S.C. 2234). Appendix F also issued under sec. 187, 68 Stat. 955 (42 U.S.C. 2237).

2. Section 50.68 is added under the center heading ''Issuance, Limitations, and Conditions of Licenses and Construction Permits'' to read as follows:

**§ 50.68 Criticality accident requirements.**

(a) Each holder of a construction permit or operating license for a nuclear power reactor issued under this part or a combined license for a nuclear power reactor issued under Part 52 of this chapter, shall comply with either 10 CFR 70.24 of this chapter or the requirements in paragraph (b) of this section.

(b) Each licensee shall comply with the following requirements in lieu of maintaining a monitoring system capable of detecting a criticality as described in 10 CFR 70.24:

(1) Plant procedures shall prohibit the handling and storage at any one time of more fuel assemblies than have been determined to be safely subcritical under the most adverse moderation conditions feasible by unborated water.

(2) The estimated ratio of neutron production to neutron absorption and leakage (k-effective) of the fresh fuel in the fresh fuel storage racks shall be calculated assuming the racks are loaded with fuel of the maximum fuel assembly reactivity and flooded with unborated water and must not exceed 0.95, at a 95 percent probability, 95 percent confidence level. This evaluation need not be performed if administrative controls and/or design features prevent such flooding or if fresh fuel storage racks are not used.

(3) If optimum moderation of fresh fuel in the fresh fuel storage racks occurs when the racks are assumed to be loaded with fuel of the maximum fuel assembly reactivity and filled with low-density hydrogenous fluid, the k-effective corresponding to this optimum moderation must not exceed 0.98, at a 95 percent probability, 95 percent confidence level. This evaluation need not be performed if administrative controls and/or design features prevent such moderation or if fresh fuel storage racks are not used.

(4) If no credit for soluble boron is taken, the k-effective of the spent fuel storage racks loaded with fuel of the maximum fuel assembly reactivity must not exceed 0.95, at a 95 percent probability, 95 percent confidence level, if flooded with unborated water. If credit is taken for soluble boron, the k-effective of the spent fuel storage racks loaded with fuel of the maximum fuel assembly reactivity must not exceed 0.95, at a 95 percent probability, 95 percent confidence level, if flooded with borated water, and the k-effective must remain below 1.0 (subcritical), at a 95 percent probability, 95 percent confidence level, if flooded with unborated water.

(5) The quantity of SNM, other than nuclear fuel stored onsite, is less than the quantity necessary for a critical mass.

(6) Radiation monitors are provided in storage and associated handling areas when fuel is present to detect excessive radiation levels and to initiate appropriate safety actions.

(7) The maximum nominal U–235 enrichment of the fresh fuel assemblies is limited to five (5.0) percent by weight.

(8) The FSAR is amended no later than the next update which § 50.71(e) of this part requires, indicating that the licensee has chosen to comply with § 50.68(b).

## PART 70—DOMESTIC LICENSING OF SPECIAL NUCLEAR MATERIAL

The authority citation for 10 CFR part 70 continues to read as follows:

**1. Authority:** Secs. 51, 53, 161, 182, 183, 68 Stat. 929, 930, 948, 953, 954, as amended, sec. 234, 83 Stat. 444, as amended, sec. 1701, 106 Stat. 2951, 2952, 2953 (42 U.S.C. 2071, 2073, 2201, 2232, 2233, 2282, 2297f); secs. 201, as amended, 202, 204, 206, 88 Stat. 1242, as amended, 1244, 1245, 1246, (42 U.S.C. 5841, 5842, 5845, 5846).

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 70.7 also issued under Pub. L. 95–601, sec. 10, 92 Stat. 2951 (42 U.S.C. 5851). Section 70.21(g) also issued under sec. 122, 68 Stat. 939 (42 U.S.C. 2152). Section 70.31 also issued under sec. 57d, Pub. L. 93–377, 88 Stat. 475 (42 U.S.C. 2077). Sections 70.36 and 70.44 also issued under sec. 184, 68 Stat. 954, as amended (42 U.S.C. 2234).

Section 70.61 also issued under secs. 186, 187, 68 Stat. 955 (42 U.S.C. 2236, 2237). Section 70.62 also issued under sec. 108, 68 Stat. 939, as amended (42 U.S.C. 2138).

2. In § 70.24, paragraph (d) is revised to read as follows:

**§ 70.24 Criticality accident requirements.**

* * * * *

(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.

Dated at Rockville, Maryland this 28th day of October, 1998.

For the Nuclear Regulatory Commission.

**William D. Travers,**

*Executive Director for Operations.*

[FR Doc. 98–30253 Filed 11–10–98; 8:45 am]

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## DEPARTMENT OF TRANSPORTATION

## Federal Aviation Administration

## 14 CFR Part 39

**[Docket No. 98–NM–217–AD; Amendment 39–10880; AD 98–23–13]**

**RIN 2120–AA64**

## Airworthiness Directives; British Aerospace Model Viscount 744, 745, 745D, and 810 Series Airplanes

**AGENCY:** Federal Aviation Administration, DOT.

**ACTION:** Final rule.

**SUMMARY:** This amendment supersedes an existing airworthiness directive (AD), applicable to all British Aerospace Model Viscount 700, 800, and 810 series airplanes, that currently requires repetitive inspections to detect cracks and corrosion in the inboard and outboard engine nacelle structures on the wings; replacement of any cracked fittings and mating struts; and treatment or replacement of any corroded fittings or struts. This amendment requires repetitive inspections to detect cracking or corrosion of the eye end fittings of the outboard engine lower support or of the bore of the taper pin holes, and repair, if necessary. This amendment also limits the applicability of the existing AD. This amendment is prompted by reports of cracked and separated lower eye end fittings. The actions specified by this AD are intended to detect and correct cracking of the eye end fittings of the outboard engine lower support, which could result in reduced structural integrity of the engine nacelle support structures.

**DATES:** Effective December 17, 1998.

The incorporation by reference of certain publications listed in the regulations is approved by the Director