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(D) Equipment servicing or maintenance requirements;
(E) Education, training, experience, qualification, requalification or other employment suitability requirements;
(f) Requirements for safeguard plans, including materials control, accounting, or other inventory requirements;
(G) Scheduling requirements;
(H) Surety, insurance or indemnity requirements;
(I) Requirements to update references; e.g. NRC approved ASME codes, ICPR standards, or regulatory guidance; or
(J) Other requirements of an administrative, managerial, organizational, or procedural nature.

Dated at Rockville, Maryland, this 3rd day of October 2008.

For the Nuclear Regulatory Commission.

Annette Vietti-Cook,
Secretary of the Commission.

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NUCLEAR REGULATORY COMMISSION

10 CFR Part 51

RIN: 3150–AI47

[NRC–2008–0404]

Consideration of Environmental Impacts of Temporary Storage of Spent Fuel After Cessation of Reactor Operation

AGENCY: Nuclear Regulatory Commission.

ACTION: Proposed rule.

SUMMARY: The Nuclear Regulatory Commission (NRC) is proposing to revise its generic determination on the environmental impacts of storage of spent fuel at, or away from, reactor sites after the expiration of reactor operating licenses. The proposed revision reflects findings that the Commission has reached in the “Waste Confidence” decision update published elsewhere in this issue of the Federal Register. The Commission now proposes to find that, if necessary, spent fuel generated in any reactor can be stored safely and without significant environmental impacts beyond the licensed life for operation (which may include the term of a revised or renewed license) of that reactor at its spent fuel storage basin or at either onsite or offsite independent spent fuel storage installations (ISFSIs) until a disposal facility can reasonably be expected to be available.

DATE: Submit comments on the proposed rule by December 8, 2008.

Comments received after this date will be considered if it is practical to do so, but NRC is able to assure consideration only for comments received on or before this date.

ADDRESSES: You may submit comments by any one of the following methods. Comments submitted in writing or in electronic form will be made available for public inspection. Because your comments will not be edited to remove any identifying or contact information, the NRC cautions you against including any information in your submission that you do not want to be publicly disclosed.


Mail comments to: Secretary, U.S. Nuclear Regulatory Commission, Washington, DC 20555–0001, ATTN: Rulemakings and Adjudications Staff.

E-mail comments to: Rulemaking.Comments@nrc.gov. If you do not receive a reply e-mail confirming that we have received your comments, contact us directly at 301–415–1677.

Hand deliver comments to: 11555 Rockville Pike, Rockville, Maryland 20852, between 7:30 a.m. and 4:15 p.m. Federal workdays. (Telephone 301–415–1677).

Fax comments to: Secretary, U.S. Nuclear Regulatory Commission at 301–415–1101.

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NRC’s Public Document Room (PDR): The public may examine and have copied for a fee publicly available documents at the NRC’s PDR, Public File Area O1 F21, One White Flint North, 11555 Rockville Pike, Rockville, Maryland.

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SUPPLEMENTARY INFORMATION:

Background

In 1990, the Commission concluded a generic rulemaking proceeding to reassess its degree of confidence that radioactive wastes produced by nuclear power plants can be safely disposed of, to determine when such disposal or offsite storage will be available, and to determine whether radioactive wastes can be safely stored onsite past the expiration of existing facility licenses until offsite disposal or storage is available. This proceeding reviewed findings the Commission had made in 1984 on these issues in a generic rulemaking proceeding which became known as the “Waste Confidence Proceeding.” The 1990 proceeding resulted in the following five reaffirmed or revised Waste Confidence findings:

(1) The Commission finds reasonable assurance that safe disposal of high-level radioactive waste (HLW) and spent nuclear fuel (SNF) in a mined geologic repository is technically feasible;

(2) The Commission finds reasonable assurance that at least one mined geologic repository will be available within the first quarter of the twenty-first century, and that sufficient repository capacity will be available within 30 years beyond the licensed life for operation (which may include the term of a revised or renewed license) of any reactor to dispose of the commercial HLW and SNF originating in such reactor and generated up to that time;

(3) The Commission finds reasonable assurance that HLW and SNF will be managed in a safe manner until sufficient repository capacity is available to assure the safe disposal of all HLW and SNF;

(4) The Commission finds reasonable assurance that, if necessary, spent fuel generated in any reactor can be stored safely and without significant environmental impacts for at least 30 years beyond the licensed life for operation (which may include the term of a revised or renewed license) of that reactor at its spent fuel storage basin, or at either onsite or offsite ISFSIs;

(5) The Commission finds reasonable assurance that safe independent onsite spent fuel storage or offsite spent fuel storage will be made available if such storage capacity is needed. (55 FR 38474; September 18, 1990).

These five findings form the basis of the Commission’s generic determination of no significant environmental impact...
from temporary storage of SNF after
cessation of reactor operation codified at
10 CFR 51.23(a):

The Commission has made a generic
determination that, if necessary, spent fuel
generated in any reactor can be stored safely
and without significant environmental
impact for at least 30 years beyond the
licensed life for operation (which may
include the term of a revised or renewed
license) of that reactor at its spent fuel
storage basin or at either onsite or offsite
independent spent fuel storage installations.

Further, the Commission believes there is
reasonable assurance that at least one mined
geologic repository will be available within
the first quarter of the twenty-first century,
and sufficient repository capacity will be
available within 30 years beyond the licensed
life for operation of any reactor to dispose of
the commercial [HLW] and [SNF] originating
in such reactor and generated up to that time.

Thus, the environmental impacts of
spent fuel storage for the period
following the term of a reactor operating
license or amendment or reactor
combined license or amendment or initial
independent spent fuel storage installation license or amendment need
not be considered in proceedings on
applications for such licenses or amendments. See 10 CFR 51.23(b).

In 1999, the Commission reviewed its
Waste Confidence findings and
concluded that experience and
developments after 1990 had confirmed
the findings and made a comprehensive
reevaluation of the findings
unnecessary. See 64 FR 68005;
December 6, 1999.

Discussion

Although the Commission concluded
in 1999 that a detailed reevaluation of the
Waste Confidence findings was
unnecessary, it did state that it would
consider undertaking a comprehensive
reevaluation of the findings when the
impending repository development and
regulatory activities run their course or
if significant and pertinent unexpected
events occur, raising substantial doubt
about the continuing validity of those
findings. The Commission does not
believe that these criteria have been
met. However, the Commission is now
preparing to conduct a significant
number of proceedings on combined
operating license (COL) applications for
new reactors. This has led NRC to
explore ways in which these
proceedings may be conducted more
efficiently by resolving appropriate
issues generically in rulemaking
proceedings.

Waste confidence is such an issue.
Prior to NRC’s original Waste
Confidence report, the Commission had
stated that, as a matter of policy, it
“would not continue to license reactors
if it did not have reasonable confidence
that the wastes can and will in due
course be disposed of safely.” Natural
Resources Defense Council; Denial of
Petition for Rulemaking, 42 FR 34391,
34393; July 5, 1977. It has been 18 years
since the Commission last conducted a
formal review of its Waste Confidence
findings and there may be concerns that
one or more of the findings are now out-
of-date or at least not sufficiently
supportive of the upcoming COL
proceedings. In anticipation of these
crowns, the Commission has prepared
an update of the 1990 findings and now
proposes to revise two of the findings.
A detailed examination of its updated
findings and proposals is announced
separately in this issue of the Federal
Register.

The update and proposed revisions to
the findings have led the Commission to
propose a modification of its generic
determination of no significant
environmental impact from the
temporary storage of spent fuel after
cessation of reactor operations codified at
10 CFR 51.23(a). At present, this
determination is supported by findings
reached in 1990 that: (1) Spent fuel can
be stored safely and without significant
environmental impacts for at least 30
years beyond the licensed life for
operation of the reactor that generated
the fuel; (2) the Commission has
reasonable assurance that a geologic
repository will be available by 2025; and
(3) all reactors will be able to dispose of
their spent fuel within 30 years beyond
their licensed life for operation. As
modified, this generic determination
will be simplified to state that, if
necessary, spent fuel generated in any
reactor can be stored safely and without
significant environmental impacts
beyond the licensed life for operation
(which may include the term of a
revised or renewed license) of that
reactor at its spent fuel storage basin or
at either onsite or offsite ISFSIs until a
disposal facility can reasonably be
expected to be available. The reasons for
this modification are briefly explained
below and more fully in the separately
published update.

Safe Storage of Spent Fuel

The Commission’s update has
strengthened its confidence in the safety
and security of SNF storage, both in
water pools and in ISFSIs. In 1990, the
Commission determined that experience
with water storage of SNF continued to
confirm that pool storage is a benign
environment for SNF that does not lead
to significant degradation of spent fuel
integrity; that the water pools in which
the assemblies are stored will remain
safe for extended periods; and that
degradation mechanisms are well
understood and allow time for
appropriate remedial action. Similarly,
by 1990, the Commission had gained
experience with dry storage systems
which confirmed the Commission’s
1984 conclusions that material
degradation processes in dry storage are
well-understood, and that dry storage
systems are simple, passive, and easily
maintained. In fact, one of the bases for
the Commission’s confidence in the
safety of dry storage was its issuance of an
amendment in 1988 to 10 CFR part
72 to address spent fuel storage in a
monitored retrievable storage
installation (MRS) for a license term of
40 years, with the possibility of renewal.
Under the environmental assessment for
the MRS rule, the Commission found
confidence in the safety and
environmental insignificance of dry
storage for 70 years following a period
of 70 years of storage in a storage pool,
for a total of 140 years of storage. See
NUREG–1092: Environmental
Assessment for 10 CFR Part 72
“Licensing Requirements for the
Independent Storage of Spent Fuel and
High-Level Radioactive Waste,” August
1984. Nothing has occurred in the
intervening years which calls into
question the Commission’s confidence
in the safety of both wet and dry storage
of SNF over long periods in the normal
operation of spent fuel pools and ISFSIs.
NRC has approved a 20-year license
renewal for a wet ISFSI and 40-year
license renewals for two dry ISFSIs.

Since 1990, the Commission’s
primary focus has been on potential
accidents and, since the tragic events of
September 11, 2001, on security events
which might lead to a radioactive
release from stored SNF. Multiple
studies have been undertaken by NRC
and by other entities, such as the
National Academy of Sciences (NAS), of
the safety and security of spent fuel
storage, including the potential for the
training of a spent fuel pool leading to a
zirconium fire and for an airplane
crashing into an ISFSI. These studies
and the Commission’s regulatory actions
in enhancing security at nuclear power
plants (including the spent fuel pool)
and at ISFSIs through issuance of orders
to licensees and through new
regulations have reinforced NRC’s view
that spent fuel storage systems are safe
and secure and without significant
environmental impacts. See, e.g., Letter
to Senator Pete V. Domenici from Nils
J. Diaz, March 14, 2005, enclosing NRC
Report to Congress on the [NAS] Study
Denial of Petitions for Rulemaking: The
In sum, the characteristics of spent fuel storage facilities, the studies of the safety and security of spent fuel storage, NRC’s extensive experience in regulating spent fuel storage and ISFSIs and in certifying dry cask storage systems, and NRC’s actions in approving 40-year license renewals for two ISFSIs (meaning that the safety of dry storage after licensed operation at these ISFSIs has been approved for at least a 60-year period) confirm the Commission’s confidence that spent fuel storage is safe and secure over long periods of time. The current generic determination is phrased in terms of confidence that SNF can be stored safely and without significant environmental impacts for at least 30 years beyond the licensed life for operation of the reactor. The Commission explained in 1990 that this time period was not intended to represent any technical limitation for safe and environmentally benign storage; rather, this time period only reflected its expectation that sufficient repository capacity would be available for any reactor’s spent fuel within 30 years of the end of its licensed operations. See 55 FR 38509; September 18, 1990. For the reasons explained briefly below, and more fully in the separately published update, the Commission no longer finds it useful to include this time limitation in its generic determination that SNF can be stored safely and without significant environmental impacts after the end of a reactor’s licensed operation.

The Availability of a Repository

The Commission’s accumulated experience of the safety of long-term spent fuel storage with no significant environmental impact and its accumulated experience of the safe management of spent fuel storage during and after the expiration of the reactor operating license have motivated it to propose that, instead of predicting a particular date (currently 2025) for the availability of a repository, it would be more appropriate to make a general finding of reasonable assurance that SNF generated in any reactor can be stored safely and without significant environmental impacts until a disposal facility can reasonably be expected to be available. Dispensing with the 2025 date does not signify a lack of confidence that a repository will be available by that date. DOE submitted its license application for the proposed repository at Yucca Mountain, Nevada on June 3, 2008 and on September 08, 2008, NRC Staff notified DOE that it found the application acceptable for docketing (73 FR 53284; September 15, 2008). The NRC has no reason at this point to conclude that the availability of a repository by 2025 is not possible and it would be premature to revise the date for that reason. However, the Commission recognizes that a repository can only be available by that date if the Commission ultimately renders a favorable decision on the application. Those decisions must await the outcome of any NRC licensing proceedings held on the application. The Commission has many times affirmed its commitment to be an impartial adjudicator of the application and does not believe that the existence of the 2025 date poses any threat to its commitment, but the Commission now has an opportunity to reconsider the issue of repository availability and believes that deleting this date will have the advantage of removing even an appearance of prejudgment in a licensing proceeding for Yucca Mountain.

The Commission’s proposal with respect to the availability of a repository focuses attention on when it may be reasonable to expect that a repository will be available. The Commission proposes to use a “target date” approach as described in its proposed revision of Waste Confidence Finding 2. This approach is used by many nations with geologic repository programs and can be a useful vehicle for considering the complex technical and institutional issues involved in predicting repository availability. The NRC believes that it is reasonable to assume that it will be known by 2025 whether a repository is available at the Yucca Mountain site and intends to use this date as the starting-off point for a new repository program on the assumption that, for whatever reason, a repository does not become available at Yucca Mountain. The Commission remains confident that disposal of SNF and HLW in a geologic repository is technically feasible and that DOE should be able to locate a suitable site for repository development in no more time than was needed for the Yucca Mountain repository program (about 20 years). However, both domestic and international developments have made clear that confidence in the technical feasibility of a repository alone is not sufficient to bring about the broader societal and political acceptance for a repository. Achieving this broader support for construction of a repository at a particular site involves many different types of public outreach which, based on international examples described in the update, suggests a range of 25–35 years to obtain. This means that if a new repository program began in 2025, it would be reasonable to expect that a repository would become available by 2050–2060. It must be emphasized that this does not represent a hard and fast date by which a repository must be available for safety reasons. The Commission did not define a period when a repository will be needed for safety or environmental reasons in 1990 and it is not doing so now; it is only explaining its view of when repository capacity may be reasonably expected to be available. For this reason, the Commission proposes to delete reference to the availability date for the repository from its generic determination.

Availability of Repository Capacity for Disposal of Spent Fuel From All Reactors

At present, the Commission’s generic determination of no significant environmental impact from the temporary storage of spent fuel after cessation of reactor operation includes a prediction that sufficient repository capacity will be available within 30 years beyond the licensed life for operation of any reactor for disposal of its spent fuel. This prediction was not based on safety or environmental considerations; it was based on finding that 30 years beyond the licensed life for operation of even the earliest reactors would not occur until after 2025. Thus, the Commission’s confidence that a repository would be available by 2025 still meant that no reactor would need to store its SNF for more than 30 years beyond its licensed life for operation. If it is assumed that a repository will not be available until 2050–2060, this prediction can no longer be maintained. There are 18 reactor licenses that will expire between 2009 and 2020 and an additional 44 licenses that will expire between 2021 and 2030. See 2007–2008 USNRC Information Digest, NUREG–1350, Vol. 19, Table 11, p.48 (Information Digest). For licenses that are not renewed, some spent fuel will need to be stored for 30 years beyond the licensed life for operation. There are 22 reactors which were...
formerly licensed to operate, but which have been permanently shut down. See Information Digest, Appendix B. For most of these plants, 30 years beyond the licensed life for operation will fall in the 2030s and 2040s. Thus, for virtually all of these plants, spent fuel will have to be stored beyond 30 years from the expiration of the license if a repository is not available until 2050–2060. For this reason, the Commission is proposing to modify its generic determination to delete the prediction that sufficient repository capacity will be available within 30 years beyond the expiration of the licensed life for operation on all reactors. As stated above, this was not a safety finding and the deletion is made solely to be consistent with an assumption that a repository will not be available until 2050–2060. The Commission is proposing to revise Finding 2 to predict that repository capacity will be available within 50–60 years beyond the licensed life for operation of all reactors (and is requesting public comment on whether a timeframe should be included at all in Finding 2—see below) and, consistent with this, is proposing to revise Finding 4 to find that spent fuel generated in any reactor can be stored safely and without significant environmental impact for at least 60 years beyond the licensed life for operation of the reactor.

Specific Question for Public Comment

The Commission’s proposed revision of Finding 2 to include a timeframe for availability of repository capacity within 50–60 years beyond the licensed life for operation of all reactors is based on its assessment not only of its understanding of the technical issues involved, but also predictions of the time needed to bring about the necessary societal and political acceptance for a repository site. Recognizing the inherent difficulties in making such predictions, the Commission seeks specific comment on whether it should revise its approach to Finding 2 and adopt a more general finding of reasonable assurance that SNF generated in any reactor can be stored safely and without significant environmental impacts until a disposal facility can reasonably be expected to be available. In other words, in response to the concerns raised by the U.S. Court of Appeals for the District of Columbia Circuit in State of Minnesota v. NRC, 602 F.2d 412 (1979) that precipitated the original Waste Confidence proceeding, the Commission could now say that there is no need to be concerned that spent fuel may need to be stored at onsite or offsite storage facilities at the expiration of the license (including a renewed license) until such time as a repository is available because we have reasonable assurance that spent fuel can be so stored for long periods of time, safely and without significant environmental impact. Such a finding would be made on the basis of the Commission’s accumulated experience of the safety of long-term spent fuel storage with no significant environmental impact. Such a finding would be made on the basis of the Commission’s accumulated experience of the safety of long-term spent fuel storage with no significant environmental impact. Such a finding would be made on the basis of the Commission’s accumulated experience of the safety of long-term spent fuel storage with no significant environmental impact. Such a finding would be made on the basis of the Commission’s accumulated experience of the safety of long-term spent fuel storage with no significant environmental impact. Such a finding would be made on the basis of the Commission’s accumulated experience of the safety of long-term spent fuel storage with no significant environmental impact.
displays a currently valid OMB control number.

**Regulatory Analysis**

A draft regulatory analysis has not been prepared for this proposed regulation because this regulation does not establish any requirements that would place a burden on licensees.

**Regulatory Flexibility Certification**

Under the Regulatory Flexibility Act of 1990, 5 U.S.C. 605(b), the Commission certifies that this rule, if adopted, would not have a significant economic impact on a substantial number of small entities. The proposed rule would describe a revised basis for continuing in effect the current provisions of 10 CFR 51.23(b) which provides that no discussion of any environmental impact of spent fuel storage in reactor facility storage pools or ISFSIs for the period following the term of the reactor operating license or amendment or initial ISFSI license or amendment for which application is made is required in any environmental report, environmental impact statement, environmental assessment, or other analysis prepared in connection with certain actions. This rule affects only the licensing and operation of nuclear power plants or ISFSIs. Entities seeking or holding Commission licenses for these facilities do not fall within the scope of the definition of “small entities” set forth in the Regulatory Flexibility Act or the size standards established by the NRC at 10 CFR 2.810.

**Backfit Analysis**

The NRC has determined that the backfit rule (§§ 50.109, 70.76, 72.62, or 76.76) does not apply to this proposed rule because this amendment would not involve any provisions that would impose backfits as defined in the backfit rule. Therefore, a backfit analysis is not required.

**List of Subjects in 10 CFR Part 51**

Administrative practice and procedure, Environmental impact statement, Nuclear materials, Nuclear power plants and reactors, Reporting and recordkeeping requirements.

For the reasons set out in the preamble and under the authority of the Atomic Energy Act of 1954, as amended; the Energy Reorganization Act of 1974, as amended; and 5 U.S.C. 553, the NRC is proposing to adopt the following amendment to 10 CFR Part 51.

**PART 51—ENVIRONMENTAL PROTECTION REGULATIONS FOR DOMESTIC LICENSING AND RELATED REGULATORY FUNCTIONS**

1. The authority citation for Part 51 continues to read as follows:


2. In § 51.23, paragraph (a) is revised to read as follows:

   **§ 51.23 Temporary storage of spent fuel after cessation of reactor operation—generic determination of no significant environmental impact.**

   (a) The Commission has made a generic determination that, if necessary, spent fuel generated in any reactor can be stored safely and without significant environmental impacts beyond the licensed life for operation (which may include the term of a revised or renewed license) of that reactor at its spent fuel storage basin or at either onsite or offsite independent spent fuel storage installations until a disposal facility can be safely stored onsite past the expiration of existing facility licenses until offsite disposal or storage is available. The Commission has decided to again undertake a review of its Waste Confidence findings as part of an effort to enhance the efficiency of combined operating license proceedings for applications for nuclear power plants anticipated in the near future. To assure that its Waste Confidence findings are up-to-date, the Commission has prepared an update of the findings and proposes to revise two of the findings. The purpose of this notice is to seek public comment on the update and the proposed revisions.

   The Commission proposes that the second and fourth findings in the Waste Confidence Decision be revised as follows:

   Finding 2: The Commission finds reasonable assurance that sufficient mined geologic repository capacity can reasonably be expected to be available within 50–60 years beyond the licensed life for operation (which may include the term of a revised or renewed license) of any reactor to dispose of the commercial high-level radioactive waste and spent fuel originating in such reactor and generated up to that time.

   Finding 4: The Commission finds reasonable assurance that, if necessary, spent fuel generated in any reactor can be stored safely without significant environmental impacts for at least 60 years beyond the licensed life for operation (which may include the term of a revised or renewed license) of that reactor in a combination of storage in its spent fuel storage basin and either onsite or offsite independent spent fuel storage installations.

   The Commission proposes to reaffirm the remaining findings. Each finding, any proposed revisions, and the reasons for revising or reaffirming them are discussed below. In keeping with the proposed revised Findings 2 and 4, the Commission is publishing concurrently