[7590-01-P]

NUCLEAR REGULATORY COMMISSION

10 CFR Part 51

[NRC-2012-0246]

RIN 3150-AJ20

Continued Storage of Spent Nuclear Fuel

AGENCY: Nuclear Regulatory Commission.

ACTION: Final rule.

SUMMARY: The U.S. Nuclear Regulatory Commission (NRC) is revising its generic determination regarding the environmental impacts of the continued storage of spent nuclear fuel beyond a reactor's licensed life for operation and prior to ultimate disposal. The NRC prepared a final generic environmental impact statement that provides a regulatory basis for this final rule. The Commission concludes that the generic environmental impact statement generically determines the environmental impacts of continued storage of spent nuclear fuel beyond the licensed life for operation of a reactor. The final rule also clarifies that the generic determination applies to license renewal for an independent spent fuel storage installation (ISFSI), reactor construction permits, and early site permits. The final rule clarifies how the generic determination will be used in future NRC environmental reviews, and makes changes to improve readability. Finally, the final rule makes conforming amendments to the determinations on the environmental effects of renewing the operating license of a nuclear power plant to address issues related to the onsite storage of spent nuclear fuel and offsite radiological impacts of spent nuclear fuel and high-level waste disposal.

DATES: This final rule is effective on **[INSERT DATE 30 DAYS AFTER DATE OF PUBLICATION IN THE *FEDERAL REGISTER*].**

ADDRESSES: Please refer to Docket ID NRC-2012-0246 when contacting the NRC about the availability of information for this final rule. You may access publicly-available information related to this final rule by any of the following methods:

- **Federal Rulemaking Web Site:** Go to http://www.regulations.gov and search for Docket ID NRC-2012-0246. Address questions about NRC dockets to Carol Gallagher; telephone: 301-287-3422; e-mail: Carol.Gallagher@nrc.gov. For technical questions, contact the individual listed in the FOR FURTHER INFORMATION CONTACT section of this final rule.
- **NRC's Agencywide Documents Access and Management System (ADAMS):** You may obtain publicly available documents online in the ADAMS Public Documents collection at http://www.nrc.gov/reading-rm/adams.html. To begin the search, select "ADAMS Public Documents" and then select "Begin Web-based ADAMS Search." For problems with ADAMS, please contact the NRC's Public Document Room (PDR) reference staff at 1-800-397-4209, at 301-415-4737, or by e-mail to pdr.resource@nrc.gov**.** The ADAMS accession number for each document referenced in this final rule (if that document is available in ADAMS) is provided the first time that it is mentioned in the SUPPLEMENTARY INFORMATION section. In addition, for the convenience of the reader, the ADAMS accession numbers are provided in a table in the "Availability of Documents" section of this document.
- **NRC's PDR:** You may examine and purchase copies of public documents at the NRC's PDR, Room O1-F21, One White Flint North, 11555 Rockville Pike, Rockville, Maryland 20852.

FOR FURTHER INFORMATION CONTACT: Merri Horn, Office of Nuclear Material Safety and Safeguards, U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001; telephone: 301-287-9167; e-mail: Merri.Horn@nrc.gov.

SUPPLEMENTARY INFORMATION:

EXECUTIVE SUMMARY:

A. Need for the Regulatory Action

The purpose of this final rule (rule) is to preserve the efficiency of the NRC's licensing process by adopting into the NRC's regulations the Commission's generic determinations of the environmental impacts of the continued storage of spent nuclear fuel (spent fuel) beyond the licensed life for operations of a reactor (continued storage). The NRC has prepared a final generic environmental impact statement that addresses the environmental impacts of continued storage and provides a regulatory basis for this rule. This rule codifies the results of the analyses from the generic environmental impact statement in § 51.23 of Title 10 of the *Code of Federal Regulations* (10 CFR), "Environmental impacts of continued storage of spent nuclear fuel beyond the licensed life for operation of a reactor." The NRC's licensing proceedings for nuclear reactors and ISFSIs have historically relied upon the generic determination in 10 CFR 51.23 to satisfy the agency's obligations under the National Environmental Policy Act (NEPA) with respect to the narrow area of the environmental impacts of continued storage. Environmental impact statements for future reactor and spent-fuel-storage facility licensing actions will not separately analyze the basis for the environmental impacts of continued storage and, as discussed in 10 CFR 51.23, the impact determinations from the generic environmental impact statement are deemed to be incorporated into these environmental impact statements. Environmental assessments for future reactor and spent-fuel-storage facility licensing actions will consider the environmental impacts of continued storage, if the impacts of continued storage

of spent fuel are relevant to the proposed action.

B. Major Provisions

The major changes to the rule are summarized as follows:

- The heading of 10 CFR 51.23 is revised to "Environmental impacts of continued storage of spent nuclear fuel beyond the licensed life for operation of a reactor."
- Paragraph (a) of 10 CFR 51.23 is revised to provide the Commission's generic determination regarding the continued storage of spent nuclear fuel. The amendments state that 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" (GEIS).
- Paragraph (b) of 10 CFR 51.23 is revised to clarify that license renewals for ISFSIs, reactor construction permits, and early site permits are included in the scope of the generic determination. The rule also makes changes to improve readability and to clarify that applicants do not need to address continued storage in their environmental reports. The rule also clarifies that the NRC shall deem the impact determinations in NUREG-2157 regarding continued storage of spent fuel to be incorporated into environmental impact statements (EIS) and that the impact determinations shall be considered in environmental assessments (EA), if the impacts of continued storage are relevant to the proposed action.
- Conforming changes are made to 10 CFR 51.30, 51.50, 51.53, 51.61, 51.75, 51.80, 51.95, and 51.97 to clarify that ISFSI license renewals, construction permits, and early site permits are included in the scope of the generic determination, improve readability, clarify that applicants do not need to address continued storage in their environmental reports, clarify that the NRC shall consider the impact determinations in certain EAs, and clarify that the impact

determinations are deemed incorporated into EISs.

- In Table B-1 in appendix B of subpart A of 10 CFR part 51, "Summary of Findings on NEPA Issues for License Renewal of Nuclear Power Plants," the "Offsite radiological impacts of spent nuclear fuel and high-level waste disposal" issue is reclassified as a Category 1 issue with no impact level assigned and the finding column entry is revised to address existing radiation standards.

- In Table B-1 in appendix B of subpart A of 10 CFR part 51, the finding column entry for the "Onsite storage of spent nuclear fuel" issue is revised to include the impacts during the license renewal term and the impacts from the continued storage period.

TABLE OF CONTENTS:

I. Background

In the late 1970s, a number of environmental groups and States challenged the NRC regarding issues related to the storage and disposal of spent fuel. In 1977, the Commission

denied a petition for rulemaking (PRM), PRM-50-18, filed by the Natural Resources Defense Council (NRDC) that asked the NRC to determine whether radioactive wastes generated in nuclear power reactors can be disposed of without undue risk to public health and safety and to refrain from granting pending or future requests for reactor operating licenses until the NRC made such a determination. The Commission stated in its denial 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" (42 FR 34391, 34393; July 5, 1977, pet. for rev. dismissed sub nom., *NRDC v. NRC*, 582 F.2d 166 (2d Cir. 1978)).

At about the same time, interested parties challenged license amendments that permitted expansion of the capacity of spent fuel pools at two nuclear power plants: Vermont Yankee and Prairie Island. In 1979, the U.S. Court of Appeals for the District of Columbia Circuit, in *Minnesota v. NRC*, 602 F.2d 412 (D.C. Cir. 1979), did not stay or vacate the license amendments, but remanded to the Commission the question of whether an offsite storage or disposal solution would be available for the spent fuel at the two facilities at the expiration of their licenses—at that time scheduled for 2007 and 2009—and, if not, whether the spent fuel could be stored safely at those reactor sites until an offsite solution became available.

In 1979, the NRC initiated a generic rulemaking proceeding that stemmed from these challenges and the Court's remand in *Minnesota v. NRC*. At that time, the purpose of the Waste Confidence rulemaking was to generically assess whether the Commission could have reasonable assurance 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" (44 FR 61372, 61373; October 25, 1979). On August 31, 1984, the Commission published the Waste Confidence Decision (Decision) (49 FR 34658) and a final rule (49 FR 34688), codified at 10 CFR 51.23. This

Decision provided an EA and Finding of No Significant Impact (FONSI) to support the rule. In the 1984 Decision the Commission made five findings (Findings):

1. The Commission finds reasonable assurance that safe disposal of radioactive waste and spent fuel in a mined geologic repository is technically feasible;

2. The Commission finds reasonable assurance that one or more mined geologic repositories for commercial high-level radioactive waste and spent fuel will be available by the years 2007 – 2009[1] and that sufficient repository capacity will be available within 30 years beyond the expiration of any reactor operating license to dispose of existing commercial high-level radioactive waste and spent fuel originating in such reactor and generated up to that time;

3. The Commission finds reasonable assurance that high-level radioactive waste and spent fuel will be managed in a safe manner until sufficient repository capacity is available to assure the safe disposal of all high-level radioactive waste and spent fuel;

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 expiration of that reactor's operating license at that reactor's spent fuel storage basin or at either onsite or offsite ISFSIs; and

5. The Commission finds reasonable assurance that safe independent onsite or offsite spent fuel storage will be made available if such storage capacity is needed.

The rule, 10 CFR 51.23, codified the analysis in the Decision and found that for at least 30 years beyond the expiration of a reactor operating license, no significant environmental impacts would result from the storage of spent fuel and expressed the Commission's reasonable assurance that a repository was likely to be available by 2007 – 2009. The rule also stated that, as a result of this generic determination, the agency did not need to assess the site-

[1] The original dates by which the licenses for the facilities at issue in *Minnesota v. NRC,* 602 F.2d 412 (D.C. Cir. 1979) would have expired.

specific impacts of continuing to store the spent fuel in either an onsite or offsite storage facility in new reactor licensing EISs or EAs beyond the expiration dates of reactor licenses (10 CFR 51.23(b)). The rulemaking also amended 10 CFR part 50, "Domestic licensing of production and utilization facilities," to require operating nuclear power reactor licensees to submit their plans for managing spent fuel at their site until the fuel is transferred to the U. S. Department of Energy (DOE) for disposal (see 10 CFR 50.54(bb)).

The Commission conducted its first review of the Decision and rule in 1989 – 1990. This review resulted in the revision of the second and fourth Findings to reflect revised expectations for the date of availability of the first repository, and to clarify that the expiration of a reactor's licensed life for operation referred to the full 40-year initial license for operation and an additional 30 years (which may include the term of a revised or renewed license). On September 18, 1990, the Commission published the revised Decision (55 FR 38474) and the associated final rule (55 FR 38472). The revised Findings 2 and 4 in the 1990 revised Decision were:

Finding 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 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 high-level radioactive waste and spent fuel originating in such reactor and generated up until that time.

Finding 4: The Commission finds reasonable assurance that, if necessary, spent fuel generated at 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.

The Commission also amended 10 CFR 51.23(a) to reflect the revised timing of the availability of a geologic repository to the first quarter of the twenty-first century. The rule was also revised to reflect that the licensed life for operation may include the term of a revised or renewed license.

The Commission conducted its second review of the Decision and rule in 1999 and concluded that experience and developments after 1990 had confirmed the Findings and made a comprehensive reevaluation of the Decision and rule unnecessary (64 FR 68005; December 6, 1999).

In 2007, the NRC amended 10 CFR 51.23 to indicate that the generic determination provisions applied to combined licenses (72 FR 49352; August 28, 2007).

In 2008, the Commission decided to conduct its third review of the Decision and rule as part of an effort to enhance the efficiency of upcoming combined license application proceedings. The Commission determined that it would be more efficient to resolve certain combined-license-proceeding issues generically, including those related to Waste Confidence. This review resulted in a revision of the second and fourth Findings to reflect revised expectations for the date of availability of the first repository and that spent fuel can be stored safely for at least 60 years beyond the licensed life for operation.

In December 2010, the Commission published its revised Decision (75 FR 81032; December 23, 2010) and associated final rule (75 FR 81037; December 23, 2010). The revised Findings 2 and 4 in the 2010 Decision were:

Finding 2: The Commission finds reasonable assurance that sufficient mined geologic repository capacity will be available to dispose of the commercial high-level radioactive waste and spent fuel generated by any reactor when necessary.

Finding 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 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 ISFSIs.

Section 51.23(a) of 10 CFR was amended to reflect revised Findings 2 and 4. The changes reflected that spent fuel could be safely stored for at least 60 years beyond the licensed life for operation of a reactor and that sufficient mined geologic repository capacity would be available when necessary.

In response to the 2010 Decision and rule, the States of New York, New Jersey, Connecticut, and Vermont; several public interest groups; and the Prairie Island Indian Community filed a lawsuit in the U.S. Court of Appeals for the District of Columbia Circuit that challenged the Commission's compliance with NEPA. On June 8, 2012, the Court ruled that some aspects of the 2010 proceeding did not satisfy the NRC's NEPA obligations and vacated and remanded the Decision and rule (*New York v. NRC*, 681 F.3d 471 (D.C. Cir. 2012) (ADAMS Accession No. ML12191A407). The Court concluded that the Waste Confidence rulemaking is a major federal action necessitating either an EIS or an EA that results in a FONSI. In vacating the 2010 Decision and rule, the Court identified three specific deficiencies in the analysis:

1. Related to the Commission's conclusion that permanent disposal will be available "when necessary," the Court held that the Commission needed to examine the environmental effects of failing to establish a repository;

2. Related to continued storage of spent fuel, the Court concluded that the Commission had not adequately examined the risk of spent fuel pool leaks in a forward-looking fashion; and

3. Also related to the continued storage of spent fuel, the Court concluded that the Commission had not adequately examined the consequences of potential spent fuel pool fires.

In response to the Court's decision, on August 7, 2012, the Commission stated in Commission Order CLI-12-16 (ADAMS Accession No. ML12220A094) that it would not issue reactor or ISFSI licenses dependent upon the Waste Confidence Decision and rule until the

Court's remand is appropriately addressed. The Commission stated, however, that this determination extends only to final license issuance and that all licensing reviews and proceedings should continue to move forward.

In the September 6, 2012, Staff Requirements Memorandum (SRM), "Staff Requirements – COMSECY-12-0016 – Approach for Addressing Policy Issues Resulting from Court Decision to Vacate Waste Confidence Decision and Rule" (ADAMS Accession No. ML12250A032), the Commission directed the staff to develop a generic EIS to support an updated Waste Confidence Decision and rule. In response, the NRC formed the Waste Confidence Directorate in the Office of Nuclear Material Safety and Safeguards (NMSS) to oversee the development of the generic EIS and an update that would replace the previous Waste Confidence Decision and rule.

II. Discussion

This discussion section has been divided into three subsections to better present information on the rule and the proceeding. Section A provides general information related to the proceeding. Section B provides information related to the rule changes. Lastly, Section C provides information on the technical feasibility and availability of safe storage and a repository. Sections A, B, and C present information in a question and answer format.

A. General Information

A1. What Action Is the NRC Taking?

The NRC is issuing a rule to codify its generic determinations regarding the environmental impacts of continued storage of spent fuel at-reactor, or away-from-reactor sites beyond a reactor's licensed life for operation. The analysis in NUREG-2157, "Generic Environmental Impact Statement for Continued Storage of Spent Nuclear Fuel" (GEIS) (ADAMS

Accession No. ML14196A105) provides a regulatory basis for the rule.

A2. What Is the Waste Confidence Proceeding?

Historically, the Commission's Waste Confidence proceeding represented the Commission's generic determination and generic environmental analysis that spent fuel could be stored safely and without significant environmental impacts for a period of time past the licensed life for operation of a reactor. This generic environmental determination was reflected in 10 CFR 51.23, which addressed the NRC's NEPA obligations with respect to the continued storage of spent fuel.

This rule and GEIS represent a change in the format of the Commission's Waste Confidence proceeding. Because the Commission has prepared a generic EIS, which provides a detailed analysis of the environmental impacts associated with continued storage, it is no longer necessary to make a "finding of no significant impact," or "FONSI," as that term is used in NEPA. This final rule codifies the environmental impact determinations reflected in the GEIS. This is discussed in more detail in Question A.11.

A3. Why Is the NRC Doing This Now?

On June 8, 2012, the U.S. Court of Appeals for the District of Columbia Circuit vacated the Commission's 2010 Waste Confidence rulemaking, and remanded the rulemaking to the NRC to address deficiencies related to the NRC's NEPA analysis. On September 6, 2012, the Commission instructed NRC staff to proceed with a generic EIS to analyze the environmental impacts of continued storage, address the issues raised in the Court's decision, and update the rule in accordance with the analysis in the EIS. The GEIS and this final rule implement the Commission's direction.

A4. Whom Will This Action Affect?

This rule will affect any nuclear power reactor applicant and licensee seeking issuance or renewal of an operating license or construction permit for a nuclear power reactor under 10 CFR parts 50 or 54, "Requirements for renewal of operating licenses for nuclear power plants;" issuance of a combined license or early site permit for a nuclear power reactor under 10 CFR part 52, "Licenses, certifications, and approvals for nuclear power plants;" or some amendments of a license under 10 CFR parts 50 or 52. This rule will also affect the issuance of an initial, amended, or renewed license for storage of spent fuel at an ISFSI under 10 CFR part 72, "Licensing requirements for the independent storage of spent nuclear fuel, high-level radioactive waste, and reactor-related greater than Class C waste." The rule could also affect participants in any proceeding addressing these licensing actions.

A5. How Can the NRC Conduct a Generic Review When Spent Fuel Is Stored at Specific Sites?

Since 1984, the NRC has generically addressed the environmental impacts of continued storage though a generic NEPA analysis and rule. Without a generic environmental impact analysis, site-specific consideration of the environmental impacts of continued storage would be necessary. In remanding the 2010 Waste Confidence rule to the NRC for additional analysis, the Court of Appeals for the District of Columbia Circuit continued the long history of federal courts approving a generic approach to the analysis of the environmental impacts of nuclear power reactor operation. In *New York v. NRC*, the Court of Appeals endorsed the NRC's generic approach, stating that there is "no reason that a comprehensive general analysis would be insufficient to examine on-site risks that are essentially common to all plants." (New York, 681 F.3d at 480). After conducting the analysis in the GEIS, the NRC concludes that the impacts of continued storage will not vary significantly across sites, despite variations in site-specific characteristics. Accordingly, the NRC believes that a generic approach is appropriate for this proceeding.

The NRC has determined in the GEIS that the direct and indirect environmental impacts of continued storage at reactors can be analyzed generically. This means that, for each of the resource areas analyzed in the GEIS, the NRC has reached a generic determination (SMALL, MODERATE, LARGE, or a range) that is appropriate for all sites. As discussed in the GEIS, these impact determinations are not expected to differ from those that would result from individual site-specific reviews for the continued storage period.

The NRC's evaluation of the environmental impacts of continued storage builds upon substantial operating experience over the licensed life of the reactor. The environmental impacts associated with spent fuel storage during the licensed life for operation are addressed during the NRC's review of license applications and license renewal applications. The environmental impacts associated with spent fuel storage in an at-reactor ISFSI during the licensed life for operation of a reactor are addressed through the 1989 environmental assessment supporting the final rule for 10 CFR part 72 general licenses, in the environmental assessments prepared to support rules approving Certificates of Compliance for dry cask systems, in a site-specific environmental assessment for specifically licensed ISFSIs, or during the NRC's review of license renewal applications. Site-specific analyses capture the characteristics that most obviously vary from site to site, such as seismic activity, land use, ecosystem, and local population variations. During operation, facility operators and the NRC gain significant additional experience with site-specific issues, including those related to issues of site configuration and maintenance history. During the licensed life of a facility, many factors ensure that operational impacts, including those from accidents or off-normal releases, are within regulatory limits at any given site. These factors include the plant's operating experience, licensee compliance with NRC regulations, site-specific mitigation and controls informed by the licensing reviews, and ongoing regulatory oversight and enforcement actions. In the continued storage period, many of the environmental impacts related to storage of spent fuel are not expected to vary beyond the range experienced during operations. Changes in the environment

during the continued storage periods examined in the GEIS are expected to be gradual and predictable. There are inherent uncertainties in determining impacts for the long-term and indefinite timeframes, and, with respect to some resource areas, those uncertainties could result in impacts that, although unlikely, could be larger than those that are to be expected at most sites and have therefore been presented as ranges rather than as a single impact level. Those uncertainties exist, however, regardless of whether the impacts are analyzed generically or site-specifically. Despite variations in site-specific characteristics, a generic analysis is capable of determining and expressing the environmental impacts that may result from continued storage.

The reasonableness of NRC's determinations about continued storage is supported by numerous environmental reviews of spent fuel storage. Spent fuel storage during the period of operations has been considered in site-specific licensing of new reactors (for spent fuel pools only), ISFSIs, and license renewals. Finally, concerned parties who meet the waiver criteria in 10 CFR 2.335 will be able to raise site-specific issues related to continued storage at the time of a specific license application.

A6. What Types of Wastes Are Addressed by the GEIS and Rule?

The environmental analysis in the GEIS and the rule covers low and high burn-up spent fuel generated in light-water nuclear power reactors. It also covers mixed oxide (MOX) fuel,[2] since MOX fuel is substantially similar to existing light-water reactor fuel and is, in fact, being considered for use in existing light-water reactors in the United States. It also covers spent fuel from small modular light-water reactors. Small modular light-water reactors being developed will use fuel very similar in form and materials to the existing operating reactors and will not, therefore, introduce new technical challenges to the storage of spent fuel. The environmental analysis in the GEIS also covers the spent fuel from one high-temperature gas-cooled reactor

[2] Mixed oxide fuel (often called MOX fuel) is a type of nuclear power reactor fuel that contains plutonium oxide mixed with either natural or depleted uranium oxide in ceramic pellet form.

(HTGR) built and commercially operated: Fort Saint Vrain.

A7. What Activities Are Not Covered by the GEIS and Rule?

The GEIS and rule do not consider disposal of spent fuel or storage of spent fuel during the licensed life for operation of the power reactor. Additionally, the GEIS and rule do not address foreign spent fuel, non-power reactor spent fuel (e.g., fuel from research and test reactors), defense waste, Greater-than-Class C low-level waste, reprocessing of commercial spent fuel, or the need for nuclear power (see also question A9).

A8. How Does this Rulemaking Relate to the Licensing of Future Away-from-Reactor ISFSIs?

The GEIS and rule do not satisfy the NRC's obligations under NEPA to analyze the environmental impacts of spent fuel storage during the term of a facility's license. The NRC must conduct a site-specific environmental analysis to support the licensing of any future away-from-reactor ISFSI. The NRC cannot use the rule and GEIS as a substitute for the environmental analysis associated with constructing and operating an away-from-reactor ISFSI. The site-specific NEPA analysis for an away-from-reactor ISFSI can only rely on the analysis in the GEIS and the requirements in the rule to satisfy the NRC's NEPA obligations with respect to the storage of spent fuel during the applicable continued storage period.

A9. Will the Rulemaking Authorize the Storage of Spent Fuel at the Operating Reactor Site Near Me?

No, the rule does not authorize the storage of spent fuel at any site. The rule reflects only the generic environmental analysis for the period of spent fuel storage beyond a reactor's licensed life for operation and before disposal in a repository. This proceeding is not a substitute for licensing actions that typically include site-specific NEPA analysis and site-specific safety analyses (see also question A10).

In addition, the NRC's GEIS and final rule do not pre-approve any particular waste storage or disposal site technology, nor do they require that a specific cask design be used for

storage. Individual licensees and applicants, including any applicant for a high-level radioactive waste repository, are required to have a license from the NRC before storing or disposing of any spent fuel. Separately, every 10 CFR part 50 or part 52 nuclear power reactor licensee, by virtue of 10 CFR part 72, subpart K, has a general license authorizing storage of spent fuel in cask designs that are approved by the NRC.

A10. How Will the Rule and GEIS Be Used in Site-Specific Licensing Actions?

The rule, which adopts the generic impact determinations regarding continued storage from the GEIS, satisfies the NRC's NEPA obligations with respect to continued storage for initial, renewed, and amended licenses for reactors and ISFSIs, as well as for construction permits and early site permits. The rule does not satisfy the NRC's obligation to assess the environmental impacts of spent fuel storage during a facility's licensed life for operation. The impacts of storage during a proposed license term at a specific site, as distinct from the timeframes of continued storage covered by the rule, would be subject to the safety and environmental review as part of other licensing reviews.

The GEIS (NUREG-2157) only satisfies a portion of the NRC's NEPA obligations related to the issuance of a reactor or spent fuel storage facility license by generically evaluating the environmental impacts of continued storage. These generic determinations will not be revisited and may not be challenged in individual licensing proceedings without the grant of a waiver under 10 CFR 2.335. Taken together, the GEIS, the site-specific environmental review, and other applicable environmental reviews will provide the decision-maker in a licensing proceeding with a complete environmental analysis of the impacts associated with spent fuel storage prior to disposal in a geologic repository.

Under final 10 CFR 51.23, the impact determinations in NUREG-2157 are deemed incorporated into an EIS that is prepared to support a licensing action for a power reactor or ISFSI. For a licensing action supported by an EA, the NRC will consider the impact

determinations in NUREG-2157 in the EA, if the impacts of continued storage of spent fuel are relevant to the proposed action. This means that NUREG-2157 provides the determinations of the environmental impacts of continued storage to be used in site-specific environmental reviews. No additional analysis of the impacts of continued storage is required.

The findings of the site-specific environmental review may be challenged during the initial licensing of a facility and at license renewal. As a result of this rulemaking, what may not be considered in those proceedings—due to the generic determination in 10 CFR 51.23(a)—are the environmental impacts of continued storage of spent fuel beyond the licensed life for operation of the reactor contained in NUREG-2157. The NRC's regulations at 10 CFR 2.335, however, allow participants in NRC's licensing proceedings to request that a rule, including 10 CFR 51.23, not be applied, or be waived, in a particular proceeding because special circumstances are present that would prevent the application of the rule from satisfying the purpose of the rule.

The GEIS and rule are applicable only to future NRC licensing actions and do not apply to completed licensing actions.

A11. Why Is There Not a Separate Waste Confidence Decision Document?

Historically, the Waste Confidence Decision contained five "Findings" that addressed the technical feasibility of a mined geologic repository, the degree of assurance that disposal would be available by a certain time, and the degree of assurance that spent fuel and high-level waste could be managed safely without significant environmental impacts for a certain period beyond the expiration of plants' operating licenses. Preparation of and reliance upon a GEIS is a fundamental departure from the approach used in past proceedings. The GEIS acknowledges the uncertainties inherent in a prediction of repository availability and provides an environmental analysis of three timeframes, including one where a repository does not become available.

The relationship between the prior "Findings" and the technical feasibility analyses in the current GEIS is discussed in greater detail in Section D.2.4.1. As noted in the GEIS, the former "Findings" were outputs of previous Waste Confidence proceedings, which included an environmental assessment and finding of no significant impact. In contrast, the current GEIS provides a detailed analysis under NEPA and provides an analysis of specific impacts.

To support the analysis in the GEIS and the rule, the underlying assumptions in the GEIS address the issues assessed in the previous five "Findings" as conclusions regarding the technical feasibility and availability of a repository and conclusions regarding the technical feasibility of safely storing spent fuel in an at-reactor or away-from-reactor storage facility. The issue of the technical feasibility of a geologic repository was historically addressed in Finding 1 and is now discussed in Section B.2.1 of the GEIS and the availability of a repository was addressed in Finding 2 and is now discussed in Section B.2.2. The regulatory framework for spent fuel storage was previously addressed in Findings 3 and 5 and is now addressed in Section B.3.3. The safe storage of spent fuel pending ultimate disposal at a repository was previously addressed in Finding 4 and is now addressed in Sections B.3.1 and B.3.2. Thus, the GEIS fulfills the NRC's NEPA obligations for analyzing the environmental impacts of continued storage in a more traditional NEPA format.

A12. What Is the Status of the Extended Storage Effort?

The extended storage effort is an activity that is separate from this proceeding and that focuses on technical and regulatory considerations for the continued effective regulation of spent fuel storage and subsequent transportation over extended periods (up to 300 years). Presently, the NRC believes that the existing regulatory framework used to renew current licenses can be extended to regulate the management of spent fuel for multiple renewal periods. The staff is examining technical areas associated with multiple renewals of fixed-term, dry storage licenses and certificates to address age-related degradation of dry cask storage

systems, structures, and components. The NRC acknowledges that current licensing practices may evolve over time in response to improved understanding, operational experience, and Commission policy direction. As technical, regulatory, and policy issues are resolved, the NRC will revise guidance and staff qualification and training accordingly. Completion of the Extended Storage effort is planned for the end of the decade. The NRC will evaluate any new information that is developed during the Extended Storage effort to determine whether it is necessary to update the GEIS or 10 CFR 51.23.

A13. How Can the NRC Proceed With This Rulemaking While Research on the Extended Storage of Spent Fuel Is Ongoing?

Development of the GEIS and the NRC's ongoing research are two separate efforts that are not dependent on each other. This rulemaking updates the NRC's environmental rules in 10 CFR part 51. The GEIS, NUREG-2157, which was prepared to satisfy the NRC's NEPA obligations, provides a regulatory basis for the rule. Under NEPA, an EIS, such as the one prepared to support this rulemaking, need only consider currently available information. As the Commission recently stated, "NEPA requires that we conduct our environmental review with the best information available today. It does not require that we wait until inchoate information matures into something that later might affect our review." (*Luminant Generation Co. LLC* (Comanche Peak Nuclear Power Plant, Units 3 and 4), et al., CLI-12-7, 75 NRC 379, 391-92 (2012)). Further, the United States Court of Appeals for the District of Columbia Circuit explained that "creating [the agency's] models with the best information available when it began its analysis and then checking the assumptions of those models as new information became available, was a reasonable means of balancing competing considerations, particularly given the many months required to conduct full modeling with new data." (*Village of Bensenville v. Federal Aviation Administration*, 457 F.3d 52, 71-72 (D.C. Cir. 2006)). The United States Supreme Court held that "an agency need not supplement an EIS every time new information

comes to light after the EIS is finalized. To require otherwise would render agency decision making intractable, always awaiting updated information only to find the new information outdated by the time a decision is made." (*Marsh v. Oregon Natural Resources Council*, 490 U.S. 360, 374 (1989)).

In the GEIS, the NRC has concluded that sufficient information exists to perform an analysis of continued storage impacts for the three timeframes analyzed. Nonetheless, the NRC continues to identify and resolve potential issues associated with the storage and transportation of spent fuel for periods beyond an ISFSI's initial licensing and first renewal. The ongoing research into the extended storage of spent fuel is part of the NRC's effort to continuously evaluate and update its safety regulations. The NRC is not aware of any deficiencies in its current regulations that would challenge the continued safe storage of spent fuel in spent fuel pools or dry cask systems.

If, at some time in the future, the NRC were to identify a concern with the safe storage of spent fuel, the NRC would evaluate the issue and take whatever action or make whatever change in its regulatory program necessary to protect public health and safety. The NRC will continue to monitor the ongoing research into spent fuel storage. When warranted by significant events that may call into question the appropriateness of the rule, the NRC will review the GEIS and rule to determine if revisions are necessary.

A14. How Frequently Does the NRC Plan to Revisit the GEIS and Rule?

The Commission has reviewed the rule and supporting analysis four times since 1984; in 1990, 1999, 2010, and now in 2014. The NRC does not have a schedule for revisiting the GEIS and rule after this current update. The NRC will review the GEIS and rule for possible revision when warranted by significant events that may call into question the appropriateness of the rule.

B. Rulemaking

B1. What Is the Purpose of This Rulemaking?

Historically, the NRC and license applicants have relied on 10 CFR 51.23 to conclusively address the environmental impacts of continued storage in environmental reports, EISs, and EAs. The NRC's use of 10 CFR 51.23 to satisfy its NEPA obligations with respect to continued storage will enhance efficiency in individual licensing reviews by incorporating the determinations from the generic analysis of the environmental impacts of continued storage into environmental impact statements that need to address continued storage. For EAs that need to address continued storage, the NRC will consider the environmental impacts of continued storage, as provided in 10 CFR 51.23. Having confirmed that the environmental impacts of continued storage can be analyzed generically, the Commission has decided to codify the GEIS impact determinations in a revised rule, 10 CFR 51.23. Because the impacts of continued storage have been generically assessed in the GEIS, NEPA analyses for relevant future reactor and spent fuel storage facility licensing actions will not need to separately determine the environmental impacts of continued storage. The analysis in the GEIS constitutes a regulatory basis for the rule at 10 CFR 51.23.

Part of the environmental analysis for a nuclear power reactor or storage facility license includes a review of the impacts caused by the spent fuel generated in the reactor. That analysis must assess the impacts of the spent fuel from generation through disposal. As codified, the impact determinations in the GEIS will inform the decision-makers in licensing proceedings of the reasonably foreseeable environmental impacts of continued storage. These determinations will be weighed along with other impacts determined by the NRC on a site-specific basis for the facility or an activity. Thus, in the course of an individual licensing proceeding, the decision-maker will be able to compare all the environmental impacts of a proposed licensing action (e.g., licensing a nuclear power reactor), including continued storage impacts, to the environmental impacts of reasonable alternatives, including the no-action alternative.

B2. What Is Meant by the Phrase "Licensed Life for Operation of a Reactor"?

The phrase "licensed life for operation of a reactor" refers to the term of the license to operate a reactor. The GEIS assumes an original licensed life of 40 years and up to two 20-year license extensions[3] for each reactor, for a total of up to 80 years of operation. The phrase, "beyond licensed life for operation of a reactor," refers to the period beyond the initial license term to operate a reactor and, if the license is extended, beyond the renewed license term. The date of permanent cessation of operations (shut down) does not necessarily mark the transition to "beyond licensed life for operation." Because the continued storage analysis informs the larger NEPA analysis that occurs before a license is issued, even if a reactor is shut down years before the end of its initial or extended license term, "licensed life for operation" continues to refer to the initial or renewed license term, and not the actual operational period of a reactor. The environmental analysis supporting spent fuel storage during the licensed life for operation of each reactor covers the full period for which the license or license renewal was issued, even if operation of the reactor ended before the license expired. Thus, continued storage begins at the end of the licensed life for operation of a reactor. The starting point for continued storage does not depend on whether the spent fuel is stored in a spent fuel pool, dry casks under a general license, or dry casks under a specific license.

B3. What Timeframes Are Considered in the GEIS?

The NRC has analyzed three timeframes in the GEIS that represent various scenarios for the length of continued storage that may be needed before spent fuel is sent to a repository. The first timeframe is the short-term timeframe, which analyzes 60 years of continued storage after the end of a reactor's licensed life for operation. The NRC considers the short-term

[3] The Commission's regulations provide that renewed operating licenses may be subsequently renewed, although no licensee has yet submitted an application for such a subsequent renewal. The GEIS assumes two renewals in evaluating potential environmental impacts.

timeframe to be the most likely scenario for continued storage; and the GEIS assumes that a repository would become available by the end of the short-term timeframe. The GEIS also analyzed two additional timeframes: long-term and indefinite. The long-term timeframe considers the environmental impacts of continued storage for 160 years after the end of a reactor's licensed life for operation. Finally, the GEIS includes an analysis of an indefinite timeframe, which assumes that a repository never becomes available.

By the end of the short-term timeframe, some spent fuel could be between 100 and 140 years old. Short-term storage of spent fuel includes the following:

- Continued storage of spent fuel in spent fuel pools (at-reactor only) and ISFSIs;
- Routine maintenance of spent fuel pools and ISFSIs (e.g., maintenance of concrete pads); and
- Handling and transfer of spent fuel from spent fuel pools to ISFSIs (all spent fuel is assumed to be removed from the spent fuel pool by the end of the short-term timeframe).

Long-term storage is continued storage of spent fuel for an additional 100 years after the short-term timeframe for a total of 160 years beyond the licensed life for operation of a reactor. The GEIS assumes that all spent fuel has been transferred from the spent fuel pool to an ISFSI by the end of the short-term period. The GEIS also assumes that a repository would become available by the end of the long-term timeframe. By the end of the long-term timeframe, some spent fuel could be between 200 and 240 years old. Long-term storage activities include the following:

- Continued storage of spent fuel in ISFSIs, including routine maintenance;
- One time replacement of ISFSIs and spent fuel canisters and casks; and
- Construction, operation, and one replacement of a dry transfer system (DTS).

The third timeframe analyzed by the GEIS is the indefinite timeframe, which assumes that a repository does not become available. The Commission does not believe that this

scenario is likely to occur, but its inclusion in the analysis allows the NRC to fully analyze the environmental impacts associated with continued storage. The activities during the indefinite timeframe are the same as those that would occur for the long-term timeframe; however, without a repository the replacement activities would occur every 100 years.

B4. What Are the Key Assumptions Used in the GEIS?

To guide its analysis, the NRC relied upon certain assumptions regarding storage of spent fuel. A detailed discussion of these assumptions is contained in Section 1.8.3 of the GEIS. Key assumptions used in the GEIS include, but are not limited to the following:

- Institutional controls, including the continued regulation of spent fuel, will continue.
- Spent fuel canisters and casks would be replaced approximately once every 100 years.
- A DTS would be built at each ISFSI location for fuel repackaging and the ISFSIs and DTS facilities would be replaced approximately once every 100 years.
- All spent fuel would be removed from spent fuel pools to dry storage by the end of the short-term timeframe (60 years after licensed life).
- An ISFSI of sufficient size to hold all spent fuel generated during licensed life for operation will be constructed before the end of the reactor's licensed life for operation.
- In accordance with NEPA, the NRC's analysis in the GEIS is based on current technology and regulations.

B5. How Will Significant Changes in These Assumptions Be Addressed Under the NRC's Regulatory Framework?

The NRC has historically reviewed the rule as the policy and technological foundations for spent fuel storage and disposal have evolved. Technological changes that might require revisiting the assumptions, such as revisions to the NRC's safety regulations that allow or

require a shorter or longer period of time before repackaging, are not likely to affect the overall conclusions in the GEIS that provide a regulatory basis for the rule and, accordingly, every future change in the assumptions underlying the GEIS would not necessarily justify an update to the rule. These technological changes could require licensees to amend their licenses, which would be accompanied by site-specific safety and environmental reviews related to the specific amendments. The NRC will continue to monitor changes in national policy and developments in spent fuel storage and disposal technology. When warranted by significant events that may call into question the appropriateness of the rule, the NRC will review the GEIS and rule to determine if revisions are necessary.

B6. What Is the Significance of the Levels of Impact in the GEIS (SMALL, MODERATE, LARGE)?

The NRC describes the affected environment in terms of resource areas: land use, socioeconomics, environmental justice, air quality, climate change, geology and soils, surface water, groundwater, terrestrial resources, aquatic ecology, special status species and habitats, historic and cultural resources, noise, aesthetics, waste management, transportation, and public and occupational health. The GEIS contains analyses of the environmental impacts associated with each resource area. Additionally, the GEIS considers the impacts on resource areas caused by postulated acts of terrorism and accidents. The significance of the magnitude of the impact for most of the resource areas evaluated is expressed as SMALL, MODERATE, or LARGE. The general definitions of significance levels are:

SMALL: The 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 radiological impacts that do not exceed permissible levels in the Commission's regulations are considered small.

MODERATE: The environmental effects are sufficient to alter noticeably, but not to

destabilize, important attributes of the resource.

LARGE: The environmental effects are clearly noticeable and are sufficient to destabilize important attributes of the resource.

The GEIS discussion of each resource area includes an explanation of how the significance category was determined. For issues in which the significance determination is based on risk (i.e., the probability of occurrence as well as the potential consequences), the probability of occurrence as well as the potential consequences have been factored into the determination of significance. For some resource areas, the impact determination language is specific to the authorizing regulation, executive order, or guidance.

B7. What Are the Environmental Impacts of At-Reactor Continued Storage?

The environmental impacts of continued storage are analyzed in the GEIS. The GEIS contains a detailed analysis of the impacts for short-term storage, long-term storage, and indefinite storage. The analysis considers both at-reactor storage and away-from-reactor storage.[4] Impacts attributable to at-reactor storage are addressed here and the impacts from away-from-reactor storage are addressed in question B8.

For at-reactor storage, the unavoidable adverse environmental impacts for each resource area are SMALL for all timeframes with the exception of waste management impacts, which are SMALL to MODERATE for the indefinite storage timeframe, and historic and cultural resource impacts, which are SMALL to LARGE for the long-term and indefinite storage timeframes. These elevated impact conclusions are influenced, in part, by the uncertainties regarding the specific circumstances of continued storage over long timeframes, including site-specific characteristics that could affect the intensity of potential environmental impacts, and the resulting analysis assumptions that have been made by the NRC as documented in detail in

[4] For the purposes of the GEIS impact analysis, the GEH-Morris facility and the DOE TMI-2 ISFSI at Idaho Falls, Idaho were considered under the at-reactor storage evaluation.

Chapter 4 of the GEIS. The MODERATE waste-management impacts are associated with the volume of nonhazardous solid waste generated by assumed facility replacement activities for the indefinite timeframe. The historic and cultural resource impacts would range from SMALL to LARGE for the long-term and indefinite timeframes. This range takes into consideration routine maintenance and monitoring (i.e., no ground-disturbing activities), the absence or avoidance of historic and cultural resources, and potential ground-disturbing activities that could impact historic and cultural resources. In addition, the analysis considers uncertainties inherent in analyzing this resource area over long timeframes. These uncertainties include any future discovery of previously unknown historic and cultural resources; resources that gain significance within the vicinity and the viewshed (e.g., nomination of a historic district) due to improvements in knowledge, technology, and excavation techniques; and changes associated with predicting resources that future generations will consider significant. A SMALL impact would occur if replacement activities occur in previously disturbed areas, there are no historic or cultural resources present, or if historical and cultural resources can be avoided. A potential MODERATE or LARGE impact would result if historic and cultural resources are present at a site and, because they cannot be avoided, are impacted by ground-disturbing activities during the long-term or indefinite timeframe.

For some resource areas, the impact determination language is specific to the authorizing regulation, executive order, or guidance. For special status species, continued storage impacts would be determined as part of an Endangered Species Act consultation and the Magnuson-Stevens Fishery Conservation and Management Act. Continued at-reactor storage is not expected to cause disproportionately high and adverse human health and environmental effects on minority and low-income populations. In addition, as indicated in the Commission's policy statement, environmental justice impacts would be considered during site-specific environmental reviews for specific licensing actions.

Table 1 provides a summary of the environmental impacts of continued at-reactor

storage. Detailed discussion for each resource area can be found in Chapter 4 of the GEIS. Cumulative impacts are addressed in Chapter 6 of the GEIS. Chapter 8 of the GEIS provides a summary of the impacts.

Table 1 – Environmental Impacts of At-Reactor Continued Storage of Spent Fuel

Resource Area	Short-term Storage	Long-term Storage	Indefinite Storage
Land Use	SMALL	SMALL	SMALL
Socioeconomics	SMALL	SMALL	SMALL
Environmental Justice	Disproportionately high and adverse impacts are not expected		
Air Quality Air Emissions Thermal Release	 SMALL SMALL	 SMALL SMALL	 SMALL SMALL
Climate Change	SMALL	SMALL	SMALL
Geology and Soils	SMALL	SMALL	SMALL
Surface Water Quality Consumptive Use	 SMALL SMALL	 SMALL SMALL	 SMALL SMALL
Groundwater Quality Consumptive Use	 SMALL SMALL	 SMALL SMALL	 SMALL SMALL
Terrestrial Resources	SMALL	SMALL	SMALL
Aquatic Ecology	SMALL	SMALL	SMALL
Special Status Species and Habitats	Impacts for Federally threatened and endangered species and Essential Fish Habitat would be determined as part of consultations for the Endangered Species Act and Magnuson-Stevens Fishery Conservation and Management Act		
Historic and Cultural Resources	SMALL	SMALL to LARGE	SMALL to LARGE
Noise	SMALL	SMALL	SMALL
Aesthetics	SMALL	SMALL	SMALL
Waste Management LLW	 SMALL	 SMALL	 SMALL

Mixed Waste	SMALL	SMALL	SMALL
Nonradioactive Waste	SMALL	SMALL	SMALL to MODERATE
Transportation			
Traffic	SMALL	SMALL	SMALL
Health impacts	SMALL	SMALL	SMALL
Public and Occupational Health	SMALL	SMALL	SMALL
Accidents	SMALL	SMALL	SMALL
Sabotage or Terrorism	SMALL	SMALL	SMALL

B8. What Are the Environmental Impacts of Away-from-Reactor Continued Storage?

The away-from-reactor environmental impacts analyzed in the GEIS include the impacts from constructing the ISFSI. Although an away-from-reactor ISFSI would be subject to a site-specific licensing review that includes an EIS that would assess the environmental impacts due to construction, the impacts due to construction are included in the GEIS due to the potential for that construction to occur during the timeframes analyzed in the GEIS. Inclusion of the away-from-reactor ISFSI in the GEIS does not mean that the NRC is proposing an interim or consolidated storage facility.

For away-from-reactor storage, the unavoidable adverse environmental impacts for each resource area is SMALL except for air quality, terrestrial ecology, aesthetics, waste management, and transportation where the impacts are SMALL to MODERATE. Socioeconomic impacts range from SMALL (adverse) to LARGE (beneficial) and historic and cultural resource impacts could be SMALL to LARGE. The potential MODERATE impacts on air quality, terrestrial wildlife, and transportation are based on potential construction-related fugitive dust emissions, terrestrial wildlife direct and indirect mortalities, terrestrial habitat loss, and temporary construction traffic impacts. The potential MODERATE impacts on aesthetics and waste management are based on noticeable changes to the viewshed from constructing a

new away-from-reactor ISFSI, and the volume of nonhazardous solid waste generated by assumed ISFSI and DTS replacement activities for the indefinite timeframe. The potential LARGE (beneficial) impacts on socioeconomics are due to local economic tax revenue increases from an away-from-reactor ISFSI. The potential impacts to historic and cultural resources during the short-term storage timeframes would range from SMALL to LARGE. The magnitude of adverse effects on historic properties and impacts on historic and cultural resources largely depends on where facilities are sited, what resources are present, the extent of proposed land disturbance, whether the area has been previously surveyed to identify historic and cultural resources, and if the licensee has management plans and procedures that are protective of historic and cultural resources. Even a small amount of ground disturbance (e.g., clearing and grading) could affect a small but significant resource. In most instances, placement of storage facilities on the site can be adjusted to minimize or avoid impacts on any historic and cultural resources in the area. However, the NRC recognizes that this is not always possible. The NRC's site-specific environmental review and compliance with the National Historic Preservation Act (NHPA) process could identify historic properties, identify adverse effects, and potentially resolve adverse effects on historic properties and impacts on other historic and cultural resources. Under the NHPA, mitigation does not eliminate a finding of adverse effect on historic properties. The potential impacts to historic and cultural resources during the long-term and indefinite storage timeframes would range from SMALL to LARGE. This range takes into consideration routine maintenance and monitoring (i.e., no ground-disturbing activities), the absence or avoidance of historic and cultural resources, and potential ground-disturbing activities that could affect historic and cultural resources. The analysis also considers uncertainties inherent in analyzing this resource area over long timeframes. These uncertainties include any future discovery of previously unknown historic and cultural resources; resources that gain significance within the vicinity and the viewshed (e.g., nomination of a historic district) due to improvements in knowledge, technology, and excavation techniques and

changes associated with predicting resources that future generations will consider significant. If construction of a DTS and replacement of the ISFSI and DTS occurs in an area with no historic or cultural resource present or construction occurs in a previously disturbed area that allows avoidance of historic and cultural resources then impacts would be SMALL. By contrast, a MODERATE or LARGE impact could result if historic and cultural resources are present at a site and, because they cannot be avoided, are impacted by ground-disturbing activities during the long-term and indefinite timeframes.

Impacts on Federally listed species, designated critical habitat, and essential fish habitat would be based on site-specific conditions and determined as part of consultations required by the Endangered Species Act and the Magnuson-Stevens Fishery Conservation and Management Act. Continued storage at an away-from-reactor ISFSI is not expected to cause disproportionately high and adverse human health and environmental effects on minority and low-income populations. In addition, as indicated in the Commission's policy statement, should the NRC receive an application for a proposed away-from-reactor ISFSI, a site-specific NEPA analysis would be conducted, and this analysis would include consideration of environmental justice impacts.

Table 2 provides a summary of the environmental impacts of away-from-reactor continued storage. Detailed discussion for each resource area can be found in Chapter 5 of the GEIS. Cumulative impacts are addressed in Chapter 6 of the GEIS. Chapter 8 of the GEIS provides a summary of the impacts.

Table 2 – Environmental Impacts of Away-from Reactor Continued Storage of Spent Fuel

Resource Area	Short-term Storage	Long-term Storage	Indefinite Storage
Land Use	SMALL	SMALL	SMALL
Socioeconomics	SMALL (adverse) to LARGE (beneficial)	SMALL (adverse) to LARGE (beneficial)	SMALL (adverse) to LARGE (beneficial)

Environmental Justice	Disproportionately high and adverse impacts are not expected		
Air Quality	SMALL to MODERATE	SMALL	SMALL
Climate Change	SMALL	SMALL	SMALL
Geology and Soils	SMALL	SMALL	SMALL
Surface Water			
Quality	SMALL	SMALL	SMALL
Consumptive Use	SMALL	SMALL	SMALL
Groundwater			
Quality	SMALL	SMALL	SMALL
Consumptive Use	SMALL	SMALL	SMALL
Terrestrial Resources	SMALL to MODERATE	SMALL	SMALL
Aquatic Ecology	SMALL	SMALL	SMALL
Special Status Species and Habitats	Impacts for Federally threatened and endangered species and Essential Fish Habitat would be determined as part of consultations for the Endangered Species Act and Magnuson-Stevens Fishery Conservation and Management Act		
Historic and Cultural Resources	SMALL to LARGE	SMALL to LARGE	SMALL to LARGE
Noise	SMALL	SMALL	SMALL
Aesthetics	SMALL to MODERATE	SMALL to MODERATE	SMALL to MODERATE
Waste Management			
LLW	SMALL	SMALL	SMALL
Mixed Waste	SMALL	SMALL	SMALL
Nonradioactive Waste	SMALL	SMALL	SMALL to MODERATE
Transportation			
Traffic	SMALL to MODERATE	SMALL to MODERATE	SMALL to MODERATE
Health	SMALL	SMALL	SMALL
Public and Occupational Health	SMALL	SMALL	SMALL
Accidents	SMALL	SMALL	SMALL
Sabotage or Terrorism	SMALL	SMALL	SMALL

B9. Does a Potentially LARGE Impact or a Range of Impacts Affect the Generic Determination in the GEIS?

No, the generic determinations found in the GEIS are not affected by a potentially LARGE impact or a range of impacts. The NRC has determined in the GEIS that the direct and indirect environmental impacts of continued storage can be analyzed generically. This means that, for each of the resource areas analyzed in the GEIS, the NRC has reached a generic determination (SMALL, MODERATE, LARGE, or a range) that is appropriate for all sites. These impact determinations are not expected to differ from those that would result from individual site-specific reviews for the continued storage period. There are inherent uncertainties in determining impacts for the long-term and indefinite timeframes, regardless of whether the impacts are analyzed generically or site-specifically. Because the impacts of continued storage are not expected to vary significantly across sites, despite variations in site-specific characteristics, a generic analysis is appropriate to determine the reasonably foreseeable environmental impacts that may result from continued storage.

B10. How Does the Rule Address the Impacts from Continued Storage of Spent Fuel?

The NRC is revising 10 CFR 51.23(a) to reflect the environmental impact determinations of the GEIS (NUREG–2157). Final 10 CFR 51.23(a) provides that 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. The NRC will use the impact determinations in NUREG-2157 to inform the decision-makers in licensing proceedings of the impacts of continued storage.

B11. What Clarifying Changes Are Addressed in the Rule?

Paragraph (b) of 10 CFR 51.23 is revised to clarify that ISFSI license renewals, reactor construction permits, and early site permits are included in the scope of the generic

determination in 51.23(a). Additionally, paragraph (b) is revised for readability by restructuring the paragraph and separating the requirements that apply to an applicant from those that apply to the NRC. This paragraph is also revised to provide additional clarity regarding how the generic determination in 10 CFR 51.23(a) will be implemented in future NRC NEPA reviews. These amendments to 10 CFR 51.23(b) are intended to clarify how the NRC has interpreted and implemented 10 CFR 51.23 and how it will do so in future licensing activities. The approach taken for an EA differs slightly from the approach for EISs because under the terms of the revised 10 CFR 51.23 an EA must consider the impact determinations from the GEIS, while for an EIS the impact determinations are deemed incorporated into the EIS. Consistent with current practice, applicants will not be required to address continued storage in environmental reports submitted to support applications for issuance, renewal, or amendment of an operating license or construction permit for a nuclear power reactor under 10 CFR parts 50 and 54; issuance, renewal, or amendment of an early site permit or combined license for a nuclear power reactor under 10 CFR parts 52 and 54; or the issuance, renewal, or amendment of a license for storage of spent nuclear fuel at an ISFSI under 10 CFR part 72. The impact determinations are deemed incorporated into any EIS prepared to support issuance, renewal, or amendment of an operating license or construction permit for a nuclear power reactor under 10 CFR parts 50 and 54; issuance, renewal, or amendment of an early site permit or combined license for a nuclear power reactor under 10 CFR parts 52 and 54; or the issuance, renewal, or amendment of a license for storage of spent nuclear fuel at an ISFSI under 10 CFR part 72. The impact determinations will be considered in EAs, if the impact determinations of continued storage of spent fuel are relevant to the proposed action. The NRC is making conforming changes to 10 CFR 51.30(b), 51.50(a). 51.50(b), 51.50(c), 51.53(b), 51.53(c), 51.53(d), 51.61, 51.75(a), 51.75(b), 51.75(c), 51.80(b), 51.95(b), 51.95(c), 51.95(d), and 51.97(a) to clarify that ISFSI license renewals, reactor construction permits, and early site permits are included in the scope of the generic determination; to reflect how the generic determination will be used in

future NEPA reviews; and to improve readability of the rule language.

With respect to early site permits, the NRC has consistently acknowledged its intent to apply 10 CFR 51.23 in its early site permit reviews, and this interpretation has been approved by a number of Atomic Safety and Licensing Boards. See, (e.g., *Exelon Generation Co., LLC* (Early Site Permit for Clinton ESP Site), LBP-04-17, 60 NRC 229, 246-47 (2004); *Dominion Nuclear North Anna, LLC* (Early Site Permit for North Anna ESP Site), LBP-04-18, 60 NRC 253, 268-69 (2004)). The omission of early site permits from the text of 10 CFR 51.23(b) was highlighted by a public comment (see Section D.2.3.5 of the GEIS), and the NRC has decided that clarification of its continued storage rule to explicitly include early site permits is appropriate. The NRC has further determined that the same clarification is warranted with regard to the environmental review of a construction permit application. A construction permit is issued prior to issuance of a reactor operating license; the construction permit holder can subsequently receive an operating license for the constructed facility if applicable requirements are met. *See* 10 CFR 50.23 and 50.56. Thus, like an early site permit, a construction permit is a precursor to issuance of a reactor operating license and therefore falls within the scope of licensing activities specified in 10 CFR 51.23(b) for which clarification is warranted. The NRC is therefore amending 10 CFR 51.23(b) to clarify that the rule applies to early site permits and construction permits. The NRC notes that this clarification responds to the public comments on early site permits and builds on the clarification in the proposed rule to add ISFSI license renewals to the listed actions in 10 CFR 51.23(b), thus making the rule's application to these licensing activities equally explicit. See 78 FR 56804-56805.

Given the regulatory history of the waste confidence rules, the NRC's use of the generic determination in early site permit proceedings, and the NRC's extensive discussion of the purpose and objectives of the proposed rule in the statements of consideration, the public could have reasonably ascertained that the NRC would make clarifying changes in the final rule, including the addition of early site permits and construction permits, as a natural outgrowth of

the proposed rule. These changes clarify the Commission's approach to ensure consistent evaluation of the environmental impacts of continued storage in all proceedings where spent fuel impacts arising from reactor operation may be considered, including the NEPA reviews for early site permits and construction permits, and thereby fully implement the NRC's objectives for this latest rule revision.

These changes to add early site permits and construction permits do not affect and are independent of the NRC's conclusions regarding the analysis in NUREG-2157, in 10 CFR 51.23(a), or the application of 10 CFR 51.23(b) to the licensing actions specified in the proposed rule. Accordingly, the Commission has determined that the balance of the rule for which prior notice was given can function sensibly and independently without these additional changes, and therefore intends that the balance of the rule be treated as severable to the extent possible. See *MD/DC/DE Broadcasters Ass'n v. FCC*, 236 F.3d 13, 22 (D.C. Cir. 2001).

With respect to changes to improve the rule's readability, the revisions do not change the requirements for applicants and do not modify the substantive standards by which the NRC evaluates license applications. The changes made to address readability do not affect and are independent of the NRC's conclusions regarding the analysis in NUREG-2157 as applied in 10 CFR 51.23(a) or the application of 10 CFR 51.23(b) to the licensing actions specified in the proposed rule.

The 2010 version of 10 CFR 51.23(b) provided that no discussion of any environmental impact of spent fuel continued storage is required in any NRC EA or EIS prepared in connection with the issuance or amendment of an operating license for a nuclear power reactor under 10 CFR parts 50 and 54; or issuance or amendment of a combined license for nuclear power reactor under 10 CFR parts 52 and 54; or the issuance of an initial license or amendment for an ISFSI under 10 CFR part 72. In practice, the NRC does include a brief discussion of the generic determination of 10 CFR 51.23 in these EISs. See,(e.g., NUREG-1947*, Final Supplemental Environmental Impact Statement for Combined License (COLs) for Vogtle Electric Generating*

Plant Unit 3 and 4 and NUREG-1714, *Final Environmental Impact Statement for the Construction and Operation of an Independent Spent Fuel Storage Installation on the Reservation of the Skull Valley Band of Goshute Indians and the Related Transportation Facility in Tooele County, Utah)*. Under NEPA, the NRC must analyze the impacts of continued storage pending ultimate disposal for both power reactors and ISFSIs. Although the 2010 rule as worded did not require any discussion, the NRC has historically met this NEPA obligation in practice in the EISs for power reactors and ISFSIs by relying on the generic determination. Because the NRC will now be relying on the GEIS for the generic determination instead of a FONSI, the NRC needs to clarify how the generic determination will be used in future NEPA documents to ensure consistent use. Section 51.23(b) is revised to state that the impact determinations in NUREG-2157 are deemed to be incorporated into EISs and that the NRC will consider the impact determinations in EAs, if the impacts of continued storage of spent fuel are relevant to the proposed action. This means that the NRC will use the impact determinations in NUREG-2157 to evaluate the contribution of the environmental impacts of continued storage as part of the overall NEPA analysis. For agency actions that have already been taken, the NRC will not prepare new analyses or revise the existing analyses with respect to the environmental impacts of continued storage; rather, when preparing EAs and EISs for pending and future licensing actions, the NRC's review will simply consider the incorporated impact determinations along with the other environmental impacts associated with the proposed action. The revisions do not change the requirements for applicants and do not modify the substantive standards by which the NRC evaluates license applications. The changes made to clarify how the generic determination will be used in future NEPA reviews do not affect and are independent of the NRC's conclusions regarding the analysis in NUREG-2157 as applied in 10 CFR 51.23(a).

B12. What Changes in this Rulemaking Address Continued Storage for License Renewal?

Table B-1, "Summary of Findings on NEPA Issues for License Renewal of Nuclear

Power Plants," addresses the environmental impacts of license renewal activities by resource area. Table B-1 is located in appendix B to subpart A of 10 CFR part 51, "Environmental Effect of Renewing the Operating License of a Nuclear Power Plant."[5] In 1996, the Commission determined that offsite radiological impacts of spent nuclear fuel and high-level waste disposal would be a Category 1 issue with no impact level assigned (61 FR 28467, 28495; June 5, 1996). The Commission analyzed the U.S. Environmental Protection Agency (EPA) generic repository standards and dose limits in existence at the time and concluded that offsite radiological impacts warranted a Category 1 determination (61 FR 28467, 28478; June 5, 1996). In its 2009 proposed rule preceding the 2013 final rule, the Commission stated its intention to reaffirm that determination. (74 FR 38117, 38127; July 31, 2009). However, when the Commission issued the 2013 final rule, which amended Table B-1—along with other 10 CFR part 51 regulations—it stated that upon finalization of the Waste Confidence rule and accompanying technical analyses, the NRC would make any necessary conforming amendments to Table B-1 (78 FR 37282, 37293; June 20, 2013).

In this current rulemaking, the NRC is revising determinations related to two environmental issues in Table B-1: onsite storage of spent fuel during the term of an extended license (resulting from the renewal of the plant's operating license) and the offsite radiological impacts of spent nuclear fuel and high-level waste disposal. Although the GEIS for this rulemaking does not include high-level waste disposal in the analysis of impacts, it does address the technical feasibility of a repository in Appendix B of the GEIS and concludes that a geologic repository for spent fuel is technically feasible and the same analysis applies to the feasibility of geologic disposal for high-level waste.

The Table B-1 finding for "Onsite storage of spent nuclear fuel" is revised to add the

[5] The Commission issued Table B-1 in June, 1996 (61 FR 28467; June 5, 1996). The Commission issued an additional rule in December, 1996 that made minor clarifying changes to, and added language inadvertently omitted from, Table B-1 (61 FR 66537; December 18, 1996). The NRC revised Table B-1 and other regulations in 10 CFR part 51, relating to the NRC's environmental review of a nuclear power plant's license renewal application in a 2013 rulemaking (78 FR 37282; June 20, 2013).

phrase “during the license renewal term” in two places in the first paragraph to make clear that the SMALL impact is for the license renewal term only. Some minor clarifying changes are also made to the paragraph. The first paragraph of the column entry now reads, “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.” In addition, a new paragraph is added to address the impacts of onsite storage of spent fuel during the continued storage period. The second paragraph of the column entry reads, “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 10 CFR 51.23(b), shall be deemed incorporated into this issue.” The changes reflect that this issue covers the environmental impacts associated with the storage of spent nuclear fuel during the license renewal term as well as the period after the licensed life for reactors operations.

The Table B-1 entry for “Offsite radiological impacts of spent nuclear fuel and high-level waste disposal” is revised by reclassifying the impact determination as a Category 1[6] issue with no impact level assigned. The finding column entry for this issue includes reference to the existing radiation protection standards.

Although the status of a repository, including a repository at Yucca Mountain, is uncertain and outside the scope of the generic environmental analysis conducted to support this rulemaking, the NRC believes that it is appropriate to refer to the radiation standard for Yucca Mountain because it is the current standard. The changes to these two issues finalize the Table B-1 entries that the NRC had intended to promulgate in its 2013 rulemaking, but was unable to because the 2010 Waste Confidence rule had been vacated.

While the bases for the specific conclusions in Table B-1 are found elsewhere (e.g., the

[6] For purposes of Table B-1, a designation as Category 1 means that the generic analysis of the issue may be adopted in each site-specific review. Category 2 means that additional plant-specific review is required.

1996 rule that issued Table B-1 and the 1996 license renewal GEIS, which provided the technical basis for that rulemaking, as reaffirmed by the 2013 rulemaking and final GEIS), the Commission has concluded in this GEIS that deep geologic disposal remains technically feasible. This rulemaking accordingly revises the entries for these two issues in Table B-1. The NRC provided notice of this revision in the *Federal Register* for the proposed rule (78 FR 56776; September 13, 2013) and received two comments on the table. See Sections D.2.3.6 and D.2.3.9 of Appendix D of the GEIS.

C. Repository and Continued Storage Conclusions

C1. What Is the Basis of the NRC's Conclusion That a Geologic Repository Is Feasible?

The technical feasibility of a repository is addressed in Section B.2.1 of the GEIS. Technical feasibility simply means whether a geologic repository is technically possible using existing technology (i.e., without any fundamental breakthroughs in science and technology). As discussed in Section B.2.1, the consensus within the scientific and technical community engaged in nuclear waste management is that safe geologic disposal is achievable with currently available technology. Currently, 25 countries, including the United States, are considering disposal of spent or reprocessed nuclear fuel in deep geologic repositories.

As noted in Section B.2.1 of the GEIS, ongoing research in both the United States and other countries supports a conclusion that geological disposal remains technically feasible and that acceptable sites can be identified. After decades of research into various geological media, no insurmountable technical or scientific problem has emerged to challenge the conclusion that safe disposal of spent fuel and high-level radioactive waste can be achieved in a mined geologic repository. Over the past two decades, significant progress has been made in the scientific understanding and technological development needed for geologic disposal.

As discussed in Section B.2.1, activities of European countries, experience in reviewing the DOE's Yucca Mountain license application, and DOE defense-related activities at the Waste

Isolation Pilot Plant all support the technical feasibility of a deep geologic repository. Based on national and international research, proposals, and experience with geological disposal, the NRC concludes that a geologic repository continues to be technically feasible.

C2. What Is the Basis for the NRC's Conclusion That a Repository Will Be Available?

The availability of a repository is addressed in Section B.2.2 of the GEIS. Progress in development of repositories internationally provides useful experience in building confidence that the most likely scenario is that a repository can and will be developed in the United States in the short-term timeframe. Based on the examination of a number of international programs and DOE's current plans, the NRC continues to believe that 25 to 35 years is a reasonable period for repository development (i.e., candidate site selection and characterization, final site selection, licensing review, and initial construction for acceptance of waste). A discussion of international repository programs and DOE's current plans can be found in Section B.2.2 of the GEIS.

As discussed in Section B.2.2 of the GEIS, the time DOE will need to develop a repository site will depend upon a variety of factors, including Congressional action and funding. Public acceptance will also influence the time it will take to implement geologic disposal. As stated in its "Strategy for the Management and Disposal of Used Nuclear Fuel and High-Level Radioactive Waste" (ADAMS Accession No. ML13011A138), DOE's current plans predict that a repository will be available by 2048. Although the NRC believes that 25–35 years is a reasonable timeframe for repository development, the NRC acknowledges that there is sufficient uncertainty in this estimate that the possibility that more time will be needed cannot be ruled out. International and domestic experience clearly demonstrate that technical knowledge and experience alone are not sufficient to bring about the broad social and political acceptance needed to construct a repository. The time needed to develop a societal and political consensus for a repository could add to the time to site and license a repository or overlap it to

some degree. Given this uncertainty, the GEIS evaluates a range of scenarios for the timeframe of the development of a repository, including indefinite storage. As discussed in Section B.2.2, the NRC believes that the United States will open a repository within the short-term time frame of 60 years, but, to account for all possibilities, has included a second, longer time frame as well as the scenario in which a repository never becomes available. This analysis does not constitute an endorsement of extended onsite storage of spent fuel as the appropriate long-term solution for disposition of spent fuel and high-level waste.

C3. Does the Rule Address the Feasibility and Timing of a Repository?

No. As discussed in Issue 1 (see Section IV, "Summary and Analysis of Public Comments on the Proposed Rule"), the NRC specifically sought public comment on this issue and decided not to address the feasibility and timing of a repository in the rule text itself, instead analyzing various time scenarios for repository availability in the GEIS, including the possibility that a repository will not be available. A discussion of the feasibility and timing of a repository can be found in Appendix B of the GEIS.

C4. What Is the Basis for the NRC's Conclusion Regarding Safe Storage of Spent Fuel in Spent Fuel Pools?

Section B.3.1 of the GEIS discusses the feasibility of safe storage of spent fuel in spent fuel pools and addresses a number of technical considerations. First, the integrity of spent fuel and cladding within the environment of a spent fuel pool's controlled water chemistry is supported by operational experience and a number of scientific studies. Based on available information and operational experience as discussed in Section B.3.1.1, degradation of the fuel cladding occurs very slowly over time in the spent fuel pool environment. Degradation of the spent fuel should be minimal over the short-term storage timeframe. In the GEIS, the NRC assumes that the spent fuel pool will be decommissioned before the end of the short-term

storage timeframe; however, the NRC is not aware of any information that would call into question the technical feasibility of continued safe storage of spent fuel in spent fuel pools beyond the short-term storage timeframe.

Second, the spent fuel pool's robust structural design protects against a range of natural and human-induced challenges, which are discussed in detail in Section B.3.1.2 and in the body of the GEIS. Spent fuel pools are massive seismically-designed structures that are constructed from thick, reinforced concrete walls and slabs. Section B.3.1.2 discusses a number of studies and evaluations on storage of spent fuel in a spent fuel pool and the associated accident risk. In Section B.3.1.2, the NRC concludes that the likelihood of major accidents at spent fuel pools resulting in offsite consequences is very remote. In particular, Appendix F supports the NRC's determination that the environmental impacts from spent fuel pool fires are SMALL during the short-term storage timeframe based on the low risk of a spent fuel pool fire. As noted in Section B.3.1.2, the NRC is not aware of any study that would cause it to question the low risk of spent fuel pool accidents and thereby question the technical feasibility of continued safe storage of spent fuel in spent fuel pools for the short-term timeframe considered in the GEIS. Further, as described in Appendix E, the NRC has determined that the public health impact from potential spent fuel pool leaks is SMALL.

C5. What Is the Basis for the NRC's Conclusion Regarding Safe Storage of Spent Fuel in Dry Casks?

As explained in Section B.3.2 of the GEIS, the feasibility of dry cask storage is supported by years of experience and technical studies and NRC reviews that examined and confirmed the integrity of spent fuel and cladding under the controlled environment within dry cask storage systems. The technical feasibility of these systems is further supported by the robustness of the structural design of the dry cask storage system against a variety of challenges, both natural and human-induced. Based on available information and operational experience as discussed

in Section B.3.2.1, degradation of the spent fuel should be minimal over the short-term storage timeframe if conditions inside the canister are appropriately maintained (e.g., consistent with the technical specifications for storage). Thus, it is expected that only routine maintenance will be needed over the short-term storage timeframe. In the GEIS, the NRC conservatively assumes that the dry casks would need to be replaced if storage continues beyond the short-term storage timeframe. The NRC assumes replacement of dry casks after 100 years of service life, even though studies and experience to date do not preclude a longer service life. Accidents associated with repackaging spent fuel are evaluated in Section 4.18, and the NRC determined that the environmental impacts are SMALL because the accident consequences would not exceed the NRC accident dose standard contained in 10 CFR 72.106. Dry cask storage systems are passive systems that are inherently robust, massive, and highly resistant to damage. To date, the NRC and licensee experience with ISFSIs and cask certification indicates that spent fuel can be safely and effectively stored using passive dry cask storage technology. As explained in Section B.3.2.2, technical studies and practical operating experience to date confirm the physical integrity of dry cask storage structures and thereby demonstrate the technical feasibility of continued safe storage in dry cask storage systems for the time periods considered in the GEIS.

As noted in Sections B.3.2.1 and B.3.2.2, the NRC is not aware of any issue that would cause it to question the technical feasibility of continued safe storage of spent fuel in dry casks for the timeframes considered in the GEIS. However, as part of continued oversight, the NRC continues to evaluate aging management programs and to monitor dry cask storage so that it can update its service life assumptions as necessary and consider any circumstances that might require repackaging spent fuel earlier than anticipated.

C6. How Does the Regulatory Framework Factor Into the Continued Safe Storage of Spent Fuel?

A strong regulatory framework that involves regulatory oversight, continuous improvement based on research and operating experience, and licensee compliance with regulatory requirements is important to the continued safe storage of spent fuel until repository capacity is available. As part of its oversight, the NRC can issue orders and new or amended regulations to address emerging issues that could impact the safe storage of spent fuel, as well as issue generic communications such as generic letters and information notices. The regulatory framework is discussed in Section B.3.3 of the GEIS. The NRC's upgrades of safety, environmental, and security requirements following historic events such as the September 11, 2001, terrorist attacks, and the March 11, 2011, earthquake and subsequent tsunami that struck the Fukushima Dai-ichi nuclear power plant demonstrate the NRC's capability for prompt and vigorous response to new developments that warrant increased regulatory attention. Thus, the vitality and evolution of the NRC's regulatory requirements support a reasonable conclusion that continued storage, even over extended periods of time beyond those regarded as most likely, will continue to be safe with the same or less environmental impact. Section B.3.3.1 discusses the NRC's oversight related to routine operations, accidents, and terrorist activity in more detail. Section B.3.3.2 and Appendix E discuss the NRC's response to spent fuel pool leaks and Section B.3.3.3 discusses the regulatory framework related to dry cask storage.

The NRC continues to improve its understanding of long term dry storage issues and is separately examining the regulatory framework and potential technical issues related to extended storage and subsequent transportation of spent fuel for multiple ISFSI license renewal periods extending beyond 120 years. As part of this effort, the NRC is also closely following DOE and industry efforts to study the effects of storing high burn-up spent fuel in casks. As information becomes available, the NRC will analyze the information to determine if additional or different actions are necessary. If necessary, the NRC will issue orders or enhance its regulatory requirements for storage of spent fuel, as appropriate, to continue providing adequate protection of public health and safety and the common defense and security.

As discussed in Section B.3.3.4, the NRC will continue its regulatory control and oversight of spent fuel storage through both specific and general 10 CFR part 72 licenses. Decades of operating experience and ongoing NRC inspections demonstrate that the reactor and ISFSI licensees continue to meet their obligation to safely store spent fuel in accordance with the requirements of 10 CFR parts 50, 52, and 72. If the NRC were to find noncompliance with these requirements or otherwise identify a concern with the safe storage of the spent fuel, the NRC would evaluate the issue and take whatever action or change in its regulatory program is necessary to protect the public health and safety and the environment.

Section B.3.4 concludes that the NRC believes that for the storage timeframes considered in the GEIS, regulatory oversight will continue in a manner consistent with the NRC's regulatory actions and oversight in place today to provide for continued storage of spent fuel in a safe manner until sufficient repository capacity is available for the safe disposal of all spent fuel.

C7. Does the Rule Address the Safety of Continued Storage of Spent Fuel?

No. As discussed in Issue 2 (see Section IV, "Summary and Analysis of Public Comments on the Proposed Rule"), the NRC specifically sought public comment on this issue and decided not to address the continued safe storage of spent fuel in the rule text itself. Appendix B of the GEIS discusses the feasibility of safe storage of spent fuel. Additionally, feasibility of continued safe storage and the regulatory framework are addressed in Questions C4, C5, and C6.

In summary, storage of spent fuel will be necessary until a repository is available for permanent disposal. The storage of spent fuel in any combination of spent fuel pools or dry casks will continue as a licensed activity under regulatory controls and oversight. Licensees continue to develop and successfully use onsite spent fuel storage capacity in the form of spent fuel pools and dry casks in a safe and environmentally sound fashion. Technical understanding

and experience continues to support the technical feasibility of safe storage of spent fuel in spent fuel pools and in dry casks, based on their physical integrity over long periods of time. However, the safety determinations associated with licensing of these activities are contained in the appropriate regulatory provision addressing licensing requirements and in the specific licenses for facilities. While those safety determinations are not the subject of this rulemaking they serve to inform the analysis of likely environmental impacts. The NRC concludes that spent fuel can continue to be safely managed in spent fuel pools and dry casks and that regulatory oversight exists to ensure the aging management programs continue to be updated to address the monitoring and maintenance of structures, systems, and components that are important to safety. Based on all of the information set forth in Appendix B of the GEIS, the NRC concludes that spent fuel can be safely managed in spent fuel pools in the short-term timeframe and dry casks during the short-term, long-term, and indefinite timeframes evaluated in the GEIS.

III. Rulemaking Procedure

Under the Administrative Procedure Act (5 U.S.C. 553(b)(A)), an agency may waive the normal notice and comment requirements if the rule is an interpretive rule, a general statement of policy, or a rule of agency organization, procedure, or practice.

As authorized by 5 U.S.C. 553(b)(A), the NRC has waived the notice and comment requirements for the additional clarifying amendments to 10 CFR 51.23(b) and conforming amendments to 10 CFR 51.50(a), 51.50(b), 51.75(a), and 51.75(b) that were not included in the proposed rule. The additional amendments expand the list of licensing proceedings for which site-specific consideration of the environmental impacts of continued storage is not needed, to include construction permits and early site permits. Paragraph 51.23(b) of 10 CFR is a rule of agency procedure and practice that governs how the NRC implements NEPA. This paragraph

describes how the NRC will implement the NRC's generic determination in 10 CFR 51.23(a) in site-specific NEPA reviews in licensing proceedings (i.e., by precluding a duplicative review in an individual licensing proceeding). The changes to 10 CFR 51.23(b) do not modify the substantive standards by which the NRC will evaluate license applications and do not alter the generic determination in 10 CFR 51.23(a). Rather, the additional changes to 10 CFR 51.23(b) clarify that the generic finding in 10 CFR 51.23(a) also precludes a duplicative NRC review of the environmental effects of continued storage in early site permit and construction permit application reviews, no different than the other NRC licensing proceedings already listed in that paragraph. NEPA is a procedural statute directed at Federal agencies, and 10 CFR 51.23 (including the additional clarifying amendments) addresses the manner by which the NRC complies with NEPA with respect to the subject of continued storage. These amendments do not require action by any person or entity regulated by the NRC, nor do these amendments modify the substantive responsibilities of any person or entity regulated by the NRC. That the additional amendments do not impose any substantive responsibilities or require or prohibit action by any persons or entities regulated by the NRC is indicative of the character of the amendments as matters of NRC procedure and practice.

As authorized by 5 U.S.C. 553(b)(A), the NRC has also waived the notice and comment requirements for the additional amendments to 10 CFR 51.23(b), 51.30(b), 51.50(c), 51.53(b), 51.53(c), 51.53(d), 51.61, 51.75(c), 51.80(b), 51.95(b), 51.95(c), 51.95(d), and 51.97(a) that were not included in the proposed rule. These additional amendments are made to improve readability and to clarify how the generic determination will be used in future NEPA documents for power reactors and ISFSIs. The changes do not modify the substantive standards by which the NRC will evaluate license applications and do not alter the generic determination in 10 CFR 51.23(a). Rather, the additional changes improve the readability of the regulations to make it easier to understand and provide consistency in how the generic finding in 10 CFR 51.23(a) will be used in NRC NEPA documents. NEPA is a procedural statute directed at Federal agencies,

and 10 CFR 51.23 (including the additional clarifying amendments) addresses the manner by which NRC complies with NEPA with respect to the subject of continued storage. These amendments do not require action by any person or entity regulated by the NRC, nor do these amendments change the substantive responsibilities of any person or entity regulated by the NRC. That the additional amendments do not impose any substantive responsibilities or require or prohibit action by any persons or entities regulated by the NRC is indicative of the character of the amendments as matters of NRC procedure and practice.

IV. Summary and Analysis of Public Comments on the Proposed Rule

The proposed rule was published on September 13, 2013 (78 FR 56776), for a 75-day public comment period that would have ended on November 27, 2013. The draft GEIS was also noticed for public comment on the same day. Due to the lapse in appropriations and the subsequent shutdown of the NRC, the NRC published a *Federal Register* notice on November 7, 2013 (78 FR 66858), that extended the public comment period until December 20, 2013. The NRC also held 13 public meetings during the comment period to obtain public comment on the proposed rule and draft GEIS. The NRC received 33,099 comment submissions from organizations and individuals. Of those comments, 924 represented unique comment submissions and the remainder were considered form comments sponsored by various organizations. In addition, a number of individuals provided oral comments at the public meetings that resulted in more than 1,600 pages of transcribed comments. The commenters on the proposed rule and draft GEIS included Tribal governments, State governments, industry groups, advocacy groups, licensees, and individuals. The EPA also provided comments under its authority to review EISs.

In general, there was a range of views from commenters concerning the rulemaking and draft GEIS, both in support and in opposition. Many individuals provided comments that expressed opposition to or support for nuclear power and licensing of nuclear facilities in general and comments related to actions at specific nuclear power plants. Commenters expressed concerns related to the NEPA process, continued safe storage of spent fuel, repository availability, reliance on institutional controls, costs, climate change, pool fires, pool leaks, and accidents among other things. In this section the NRC summarizes the four issues on which the NRC specifically requested input: 1) whether specific policy statements regarding the timeline for repository availability should be removed from the rule text; 2) whether specific policy statements regarding the safety of continued spent fuel storage should be made in the rule text given the expansive and detailed information in the draft GEIS; 3) whether the Discussion portion of the Statements of Consideration should be streamlined by removing content that is repeated from the draft GEIS in order to improve clarity of the discussion; and 4) whether the title of the rule should be changed in light of a GEIS being issued instead of a separate Waste Confidence Decision. Responses to the comments received on the proposed rule and draft GEIS are provided in Appendix D of the GEIS, *Generic Environmental Impact Statement for Continued Storage of Spent Nuclear Fuel*, Volume 2 (ADAMS Accession No. ML14196A107). Separately, the NRC published a document containing the text of all identified unique comments, "Comments on the Waste Confidence Draft Generic Environmental Impact Statement and Proposed Rule," which is located in ADAMS under Accession No. ML14154A175. This separate document provides individual comments organized by comment category, and comment author tables.

Issue 1

In the proposed rule, the NRC invited comment on whether the timeline for repository availability should be included in the rule text. Commenters were requested to comment on

whether specific policy statements regarding the timeline for repository availability should be removed from the proposed rule text. A total of 13 commenters responded.

Commenters who responded to Issue 1 generally expressed support for removing a statement regarding the repository availability timeline from the rule text. Reasons for this support varied, but commonly included a lack of NRC control over repository timelines; previous failures to predict when a repository would become available; the inadequacy of a basis for any particular timeline; that a timeline is not required under NEPA; and the concern that including a statement about repository availability ties the United States to repository disposal of spent fuel to the exclusion of reprocessing or other options.

The few commenters who expressed support for retaining a statement regarding the timeline for repository availability indicated that the timeline is an important element of the "contract" the public has with the nuclear industry; that the availability of a repository is the most critical issue affecting long-term dry cask storage; that inclusion of a statement regarding repository availability in the rule text indicates the importance the Commission places on this key assumption of the GEIS; and that these findings are useful in framing the NRC's assessment of the safety and environmental impacts of continued storage.

After considering the comments, the NRC has decided not to retain the timeline in the rule text. With the development of the GEIS, the relationship between repository availability and the consideration of environmental impacts from continued storage has changed from previous proceedings. In previous proceedings, the date of future repository availability was the end point of the temporal scope of the NRC's analysis of the environmental impacts from continued storage. In this rulemaking, there is no end point to the temporal scope of the NRC's analysis of the environmental impacts of continued storage. Further, the NRC agrees that there is no legal requirement to include a timeline in the rule text. Although future repository availability remains an important consideration because it provides an eventual disposition path for spent fuel, there no longer is a need to provide a time limit for the environmental impacts analysis. To support

the analysis in the GEIS, the NRC has determined that a repository is technically feasible and that it is technically feasible to safely store the spent fuel. The removal of a timeframe from the rule language does not mean that the Commission is endorsing indefinite storage of spent fuel. The United States national policy remains disposal of spent fuel in a geologic repository, and, as stated in the GEIS, the NRC believes that the most likely scenario is that a repository will become available by the end of the short-term timeframe (60 years beyond the licensed life for operation of a reactor).

Further, the GEIS recognizes the uncertainty inherent in predicting when a repository will become available. It therefore contains an analysis of two additional timeframes: a long-term timeframe that contemplates an additional 100 years of storage and an indefinite timeframe that looks at the environmental impacts that could occur if a repository never becomes available. Appendix B of the GEIS and Section II.C of this notice contain a discussion of repository feasibility.

Issue 2

In the proposed rule, the NRC invited comment on the issue of including statements regarding the safety of continued spent fuel storage in the rule text. Commenters were requested to comment on whether specific policy statements regarding the safety of continued spent fuel storage should be made in the rule text given the expansive and detailed information in the GEIS. A total of 13 commenters provided responses to the specific question on this subject.

Commenters who responded to Issue 2 generally expressed support for making a policy statement regarding safety of continued storage in the rule text. However, their reasons varied widely. Some commenters indicated that including a statement about safety enhanced openness and transparency or supported the language because storage is, in fact, safe. Other commenters indicated that it should be included because safety determinations are more

important to NRC decisions and to members of the public than environmental issues in spent fuel matters; because the public should have the benefit of the NRC's determination that spent fuel may be stored for extended periods with reasonable assurance of safety; because a safety statement would facilitate opposition to nuclear power; because it is consistent with the long-standing approach to addressing continued storage; and because it addresses legal precedents.

Commenters who opposed a policy statement regarding safety of continued storage in the rule text asserted that a statement is unnecessary to the rule; that it is not possible to project the future safety of spent fuel storage; that statements related to safety of spent fuel storage are entirely unrelated and unnecessary to the intended purpose of the rule; and that there are too many unknowns and open issues related to storage that must be resolved before any statement regarding safety can be made.

After considering the comments, the NRC has decided not to make a policy statement about safe storage in the rule text. The generic conclusion that spent fuel can be stored safely beyond the operating life of a power reactor has been a component of all past Waste Confidence proceedings. However, this continued storage rulemaking proceeding is markedly different from past proceedings. Unlike earlier proceedings, the NRC has prepared a GEIS that analyzes the impacts of continued storage of spent fuel. The GEIS fulfills the NRC's NEPA obligations and provides a regulatory basis for the rule rather than addressing the agency's responsibilities to protect public health and safety under the Atomic Energy Act (AEA), of 1954 as amended. Further, Appendix B of the GEIS discusses the technical feasibility of continued safe storage. It is important to note that, in adopting revised 10 CFR 51.23 and publishing the GEIS, the NRC is not making a safety determination under the AEA to allow for the continued storage of spent fuel. AEA safety determinations associated with licensing of these activities are contained in the appropriate regulatory provision addressing licensing requirements and in the specific licenses for facilities. Further, there is not any legal requirement for the NRC to

codify a generic safety conclusion in the rule text. By not including a safety policy statement in the rule text, the NRC does not imply that spent fuel cannot be stored safely. To the contrary, the analysis documented in the GEIS is predicated on the ability to store spent fuel safely over the short-term, long-term, and indefinite timeframes. This understanding is based upon the technical feasibility analysis in Appendix B of the GEIS and the NRC's decades-long experience with spent fuel storage and development of regulatory requirements for licensing of storage facilities that are focused on safe operation of such facilities, which have provided substantial technical knowledge about storage of spent fuel. Further, spent fuel is currently being stored safely at reactor and storage sites across the country, which supports the NRC's conclusion that it is feasible for spent fuel to be stored safely for the timeframes considered in the GEIS. Appendix B of the GEIS and Section II.C of this notice contain a discussion of the technical feasibility and regulatory framework that supports continued safe storage.

Issue 3

In the proposed rule, the NRC invited comment on the issue of streamlining the Statements of Consideration. Commenters were specifically requested to comment on whether the Discussion portion of the Statements of Consideration should be streamlined by removing content that is repeated from the draft GEIS to improve clarity of the discussion. A total of 13 commenters provided responses to the specific question on this subject.

Commenters who responded to Issue 3 provided both support and opposition for streamlining. Commenters who supported streamlining did so most frequently because it would improve clarity or because it would reduce redundancy. Other reasons included that lengthy *Federal Register* notices are burdensome to search and that streamlining could remove anachronisms.

Commenters who opposed streamlining most commonly did so because the information in the Discussion section supports the rule or provides a plain-language explanation of matters

in the rule. Other commenters opposed streamlining because it would introduce changes upon which the public has not been able to comment; because the Statements of Consideration should address findings that the NRC historically included as part of the Waste Confidence Decision; and because the *Federal Register* is more readily available to the public and is easier to search than the GEIS. Commenters indicated that the Statements of Consideration should contain enough information that it can be used as a stand-alone document.

After considering the comments and looking at ways to be more concise in presenting the information, the NRC has streamlined the Statements of Consideration where it is appropriate to do so without removing text necessary to explain the action that the NRC is taking. As noted in the comments, the *Federal Register* notice for the rule must contain enough information to explain the matters in the rule; however, it does not need to be a stand-alone document. The GEIS provides a regulatory basis for the rule and not everything in the GEIS needs to be addressed in the Statements of Consideration. Some redundancy with the GEIS remains to ensure adequate information is present to explain the nature and intent of the rule. After streamlining, the Statements of Consideration still contains sufficient information in plain language to provide the reader with an understanding of the nature and intent of the rule.

Issue 4

In the proposed rule, the NRC invited comment on changing the rule title. Commenters were requested to comment on whether the title of the rule should be changed in light of a GEIS being issued instead of a separate Waste Confidence Decision. A total of 13 commenters provided responses to the specific question on this subject.

Commenters who responded to Issue 4 expressed near-unanimous support for changing the title of the rule. Reasons for support, however, varied widely. Commenters indicated an array of reasons to support changing the rule name, including that the name is an anachronism; that the title is misleading and provides no useful description of the revised rule's purpose or

intent; that the title shows a lack of transparency; that historical findings of confidence have proven erroneous; that confidence does not exist; that the U.S. Court of Appeals for the District of Columbia Circuit invalidated confidence as a basis for the rule; that the title should be changed to reflect the evolving rulemaking process (no separate Waste Confidence Decision and reliance on the GEIS); and that confidence requires transfer of all fuel to dry casks and a defined and available end point. Many other commenters—who did not expressly respond to this issue—expressed views that "waste confidence" is a confusing term or that it conveys a confidence that does not exist. Commenters noted that with a clearer title, the purpose and limited application of the rule would be more evident to members of the public who are not aware of the historical basis for the term "waste confidence." Commenters suggested that the title should more accurately reflect the true Federal action of licensing and relicensing of reactors and ISFSIs and should accurately reflect the purpose of the analysis, evaluation, and conclusions of the study. Suggestions for a new title included "Storage of SNF [Spent Nuclear Fuel] after Licensed Term of Operations" and "Storage of Spent Nuclear Fuel for the Period After License Term of Reactor Operation."

Only one commenter who responded to this issue expressed opposition to revising the title. The commenter was opposed to changing the title because waste confidence is what the rulemaking has historically been about and the rule should still be about confidence that a repository will be available.

After considering the comments, the NRC has decided to change the title of the rule. The title of a rule should convey the nature and content of the rule. This rule represents a change in the format from past Waste Confidence proceedings. Because of the decades of experience with safely storing spent fuel and the fact that the Commission has issued a GEIS to support the rule, which provides a detailed analysis of the environmental impacts associated with continued storage, the nature of the rule has changed and the need for a separate Waste Confidence Decision no longer exists. The rule codifies the environmental impact of continued

storage of spent fuel beyond the licensed life for operation of a reactor at 10 CFR 51.23(a). The rule is used in reactor and ISFSI licensing and relicensing proceedings to address the environmental impacts of storage of spent fuel for the period after the licensed life for operation of the reactor and before disposal. Including "waste confidence" in the title of the proposed rule was intended to bridge past rulemakings on the topic to the current effort, recognizing that there is no separate Waste Confidence Decision included in the current proceeding. However, it is clear from the comments that using the historical term "waste confidence" in the title has caused some confusion. The NRC agrees that a title that more accurately reflects the content is more appropriate. Therefore, the NRC has changed the title of this notice to "Continued Storage of Spent Nuclear Fuel." The title of the GEIS was also changed accordingly.

V. Discussion of Final Amendments by Section

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

The heading of the section is revised to reflect that the section is no longer based on an EA and FONSI, but on an EIS and that environmental effects of continued storage are included in the section.

Paragraph (a) of 10 CFR 51.23 is revised to provide the Commission's generic determination of the environmental impacts on the continued storage of spent fuel. The amendments state that 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.

Paragraph (b) of 10 CFR 51.23 is revised to clarify that ISFSI renewals, reactor construction permits, and early site permits are included in the scope of the generic

determination. The final rule also makes changes to improve readability and by providing additional clarity regarding the application of the generic determination in 10 CFR 51.23(a) in future NRC NEPA reviews. Provisions applicable to applicants and the NRC are separated to make it clear that applicants do not need to address continued storage and that for the NRC's NEPA documents the impact determinations in NUREG- 2157 are deemed incorporated into EISs and will be considered in EAs, if the impacts of continued storage of spent fuel are relevant to the proposed action.

§ 51.30 Environmental assessment.

Paragraph (b) is revised to clarify that EAs will consider the generic impact determinations in NUREG-2157, if the impacts of continued storage of spent fuel are relevant to the proposed action.

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

Section 51.50 is revised to clarify that construction permits, early site permits, and combined licenses are included in the scope of the generic determination in § 51.23 and that the applicants' environmental reports do not need to discuss the impacts of continued storage.

§ 51.53 Postconstruction environmental reports.

Section 51.53 is revised to improve readability and to clarify that applicants' postconstruction environmental reports do not need to discuss the impacts of continued storage.

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

Section 51.61 is revised to clarify that ISFSI renewals are included in the scope of the generic determination in § 51.23, to improve readability, and to clarify that an applicant's ISFSI environmental report does not need to discuss the impacts of continued storage.

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

Section 51.75 is revised to clarify that construction permits and early site permits are included in the scope of the generic determination in § 51.23 and that the impact determinations on continued storage that are in NUREG-2157 are deemed to be incorporated into the draft EIS. Although footnote 5 is included in the regulatory text, it is not being amended but is included to meet an Office of the Federal Register publication requirement.

§ 51.80 Draft environmental impact statement—materials license.

Paragraph (b) is revised to clarify that ISFSI renewals are included in the scope of the generic determination in § 51.23 and to improve readability. Paragraph (b) is further revised to clarify that the impact determinations on continued storage that are in NUREG-2157 are deemed to be incorporated into the EIS.

§ 51.95 Postconstruction environmental impact statements.

Paragraphs (b), (c), and (d) are revised to clarify that the impact determinations on continued storage that are in NUREG-2157 are deemed to be incorporated into the EIS or considered in the EA, if the impacts of continued storage of spent fuel are applicable to the proposed action.

§ 51.97 Final environmental impact statement—materials license.

Paragraph (a) is revised to clarify that ISFSI renewals are included in the scope of the generic determination in § 51.23 and to improve readability. Paragraph (a) is further revised to clarify that the impact determinations on continued storage that are in NUREG-2157 are deemed to be incorporated into the EIS.

Table B-1—Summary of Findings on NEPA Issues for License Renewal of Nuclear Power Plants.

Table B-1 addresses the environmental impacts of license renewal activities by resource area. When the Commission issued the final rule on the environmental effects of license renewal (78 FR 37282; June 20, 2013), it was not able to rely on the Waste Confidence rule for two of the issues. The Commission noted that upon issuance of the GEIS and rule, the NRC would make any necessary conforming changes to the license renewal rule. This final rule revises these two Table B-1 finding column entries under the Waste Management section to address onsite storage and offsite radiological impact of disposal. The "Offsite radiological impacts of spent nuclear fuel and high-level waste disposal" issue is reclassified as a Category 1 issue with no impact level assigned and the finding column entry is revised to include reference to the existing radiation protection standards. For the "Onsite storage of spent nuclear fuel" issue, the finding column entry is revised to address the impacts of onsite storage during the license renewal term and during the continued storage period. Additionally, footnote 7 of Table B-1 is removed. Although footnotes 1, 2, and 3 are included in the regulatory text, they are not being amended but are included to meet an Office of the Federal Register publication requirement.

VI. Availability of Documents

The documents identified in the following table are available to interested persons either through ADAMS or the Web address provided, as indicated.

Document	PDR	Web (www.regulations.gov unless otherwise indicated)	ADAMS
NRC Documents			
Federal Register notice – Extension of Comment Period (78 FR 66858; November 7, 2013)	X	X	ML13294A398
Federal Register notice – Waste Confidence – Continued Storage of Spent Nuclear Fuel; Proposed Rule (78 FR 56776; September 13, 2013)	X	X	ML13256A004
NUREG-2157, "Generic Environmental Impact Statement for Continued Storage of Spent Nuclear Fuel" Vol. 1	X	X	ML14196A105
NUREG-2157, "Generic Environmental Impact Statement for Continued Storage of Spent Nuclear Fuel" Vol. 2	X	X	ML14196A107
"Comments on the Waste Confidence Draft Generic Environmental Impact Statement and Proposed Rule"	X	X	ML14154A175
Draft NUREG-2157, "Waste Confidence Generic Environmental Impact Statement"	X	X	ML13224A106
Federal Register notice announcing the 1977 Denial of PRM-50-18 (42 FR 34391; July 5, 1977)	X		ML13294A161
Federal Register notice announcing generic proceeding on Waste Confidence (44 FR 61372, 61373; October 25, 1979)	X		
Federal Register notice - 1984 Waste Confidence Final Rule (49 FR 34688; August 31, 1984)	X		ML033000242
Federal Register notice - 1984 Final Waste Confidence Decision (49 FR	X		ML033000242

34658; August 31, 1984)			
Federal Register notice - 1990 Waste Confidence Final Rule (55 FR 38472; September 18, 1990)	X		ML031700063
Federal Register notice - 1990 Waste Confidence Decision (55 FR 38474; September 18, 1990)	X		ML031700063
Federal Register notice - 1999 Waste Confidence Decision Review (64 FR 68005; December 6, 1999)	X		ML003676331
Federal Register notice - "Licenses, Certifications, and Approvals for Nuclear Power Plants" (72 FR 49352; August 8, 2007)	X		ML063060337
Federal Register notice - 2010 Waste Confidence Final Rule (75 FR 81037; December 23, 2010)	X		ML103350175
Federal Register notice - 2010 Waste Confidence Decision Update (75 FR 81032; December 23, 2010)	X		ML120970147
Federal Register notice - License Renewal GEIS Final Rule (78 FR 37282: June, 20, 2013)	X		ML13101A059
COMSECY-12-0016 - Approach for Addressing Policy Issues Resulting from Court Decision to Vacate Waste Confidence Decision and Rule (June 9, 2012)	X		ML12180A424
SRM-COMSECY-12-0016 - Approach for Addressing Policy Issues Resulting from Court Decision to Vacate Waste Confidence Decision and Rule (September 6, 2012)	X		ML12250A032
Luminant Generation Co. LLC (Comanche Peak Nuclear Power Plant, Units 3 and 4), et al., CLI-12-7, 75 NRC 379, 391-92 (March 16, 2012)	X		ML12076A190
NUREG 1947, "Final Supplemental Environmental Impact Statement for Combined License (COLs) for Vogtle Electric Generating Plant Unit 3 and 4"	X		ML11076A010
NUREG-1714, Volume 1, "Final Environmental Impact Statement for the Construction and Operation of an	X		ML020150170

Independent Spent Fuel Storage Installation on the Reservation of the Skull Valley Band of Goshute Indians and the Related Transportation Facility in Tooele County, Utah"			
Exelon Generation Co., LLC (Early Site Permit for Clinton ESP Site), LBP-04-17, 60 NRC 229, 246-47 (August 6, 2004)	X		ML042260071
Dominion Nuclear North Anna, LLC (Early Site Permit for North Anna ESP Site), LBP-04-18, 60 NRC 253, 268-69 (August 6, 2004).	X		ML042260064
Non-NRC Documents			
NRDC v. NRC, 582 F.2d 166 (2d Cir. 1978)		http://scholar.google.com/scholar_case?case=1292280692394324643 Note: This link directs the reader to an unofficial copy of this case.	
Minnesota v. NRC, 602 F.2d 412 (D.C. Cir. 1979)		http://scholar.google.com/scholar_case?case=1554474921785189941 Note: this link directs the reader to an unofficial copy of this case.	
Marsh v. Oregon Natural Resources Council, 490 U.S. 360, 374 (1989)		http://scholar.google.com/scholar_case?case=10887052189863115558&q Note: This link directs the reader to an unofficial copy of this case.	
MD/DC/DE Broadcasters Ass'n v. FCC, 236 F.3d 13, 22 (D.C. Cir. 2001)		http://scholar.google.com/scholar_case?case=4929117322249877509&q=MD/DC/DE+Broadcasters+Ass%27n+v.+FCC&hl=en&as_sdt=2000006 Note this link directs the	

		reader to an official copy of the case.	
Village of Bensenville v. Federal Aviation Administration, 457 F.3d 52, 71-72 (D.C. Cir. 2006)		http://scholar.google.com/scholar_case?case=6559910666849441800&q=Village+of+Benenville&hl=en&as_sdt=20000003 Note this link directs the reader to an unofficial copy of the case.	
New York v. NRC, 681 F.3d 471 (D.C. Cir. 2012)			ML12191A407
DOE, Strategy for the Management and Disposal of Used Nuclear Fuel and High-Level Radioactive Waste	X		ML13011A138

VII. Agreement State Compatibility

Under the "Policy Statement on Adequacy and Compatibility of Agreement State Programs," approved by the Commission on June 20, 1997, and published in the *Federal Register* (62 FR 46517; September 3, 1997), this rule is classified as compatibility "NRC." Compatibility is not required for Category "NRC" regulations. The NRC program elements in this category are those that relate directly to areas of regulation reserved to the NRC by the AEA or the provisions of Title 10 of the *Code of Federal Regulations*, and although an Agreement State may not adopt program elements reserved to the NRC, it may wish to inform its licensees of certain requirements via a mechanism that is consistent with a particular State's administrative procedure laws, but does not confer regulatory authority on the State.

IX. Voluntary Consensus Standards

The National Technology Transfer and Advancement Act of 1995 (Pub. L. 104-113) requires that Federal agencies use technical standards that are developed or adopted by voluntary consensus standards bodies unless the use of such a standard is inconsistent with applicable law or otherwise impractical. In this final rule, the NRC is modifying its generic determination on the consideration of environmental impacts of continued storage of spent fuel beyond the licensed life for reactor operations. The NRC is not aware of any voluntary consensus standards that address the subject matter of this final rule. This action does not constitute the establishment of a standard that contains generally applicable requirements.

X. Record of Decision

The NRC has decided to adopt the proposed revision to 10 CFR 51.23 and additional conforming changes. This revision codifies the NRC's analyses and determinations regarding the environmental impacts of continued storage, which are documented in NUREG-2157. The NRC prepared NUREG-2157 in accordance with its NEPA guidance for preparation of an environmental impact statement, from scoping and issuance of the draft to receipt and consideration of public comments in the final generic environmental impact statement. The NRC has concluded that these analyses and determinations meet the NRC's NEPA obligations with respect to continued storage and thereby provide a regulatory basis for this revision to 10 CFR 51.23. Section 51.23(a) adopts into regulation the generic environmental impact determinations of NUREG-2157, and section 51.23(b) provides that the environmental impacts disclosed in NUREG-2157 will be deemed incorporated into future EISs and considered in

future EAs, if the impacts of continued storage are relevant to the proposed action, to be considered by the decision-makers in those proceedings.

The NRC's considerations in reaching this decision to adopt a rule are discussed in more detail in the following sections of NUREG-2157: the proposed action in Section 1.4, the purpose of and need for the proposed action in Section 1.5, the no-action alternative and options in Section 1.6, the alternatives considered and eliminated in Section 1.6.2, and the costs and benefits of the proposed action and options under the no action alternative in Chapter 7[7] with supporting information in Appendix H. These portions of the GEIS inform the public and decision-makers of the environmental implications of this action.

The NRC's rulemaking action provides efficient processes for use in NRC licensing proceedings and reviews to address the environmental impacts of continued storage, consistent with the historic efficiencies provided by prior rules codified at 10 CFR 51.23. In COMSECY-12-0016, the NRC considered a number of alternative options and tracks to provide processes to address these environmental impacts in licensing and to preserve the efficiencies historically provided by 10 CFR 51.23. As documented in the SRM for COMSECY-12-0016, the Commission chose to pursue this combination of a rulemaking to revise 10 CFR 51.23 and a generic environmental impact statement to provide a regulatory basis for that rulemaking. As discussed in Section 1.6 of NUREG-2157, none of the options under the no-action alternative considered in the generic environmental impact statement could achieve the NRC's purpose of preserving the efficiency of its licensing proceedings with respect to the analysis of the impacts of continued storage; the only alternative left was no action. In the event of no action, NEPA would nonetheless require the NRC to consider the environmental impacts of continued storage for many future licensing actions. In Section 1.6, the NRC considered options for meeting that

[7] The inclusion of a cost-benefit analysis for the proposed action in Chapter 7 is consistent with NRC guidance for preparation of an environmental impact statement. The costs of continued storage activities and facilities are disclosed in Chapter 2, while the benefit that accrues from the specific action resulting in the need to store spent fuel (i.e., production of electrical power) will be discussed in the environmental assessment or impact statement prepared in connection with the request for authorization of that action, which will incorporate the impact determinations of NUREG-2157.

obligation without this rulemaking. The adopted rulemaking action and the options under the no action alternative are all administrative in nature and have no significant environmental impacts. Therefore, there is no environmentally preferable alternative and there is no environmental harm caused by this rulemaking action for the NRC to avoid or minimize.

The costs and benefits of this rulemaking and the various options in the event of no action are discussed in Chapter 7 of NUREG-2157. As that discussion indicates, the primary advantage of this rulemaking is that costs are significantly lower than the costs of the NRC's options in the case of no action. The NRC's other options each incur costs associated with repetitive site-specific licensing proceedings for issues related to the environmental impacts of continued storage as well as other potentially large, unquantified costs. The NRC's adoption of the rule is consistent with Council on Environmental Quality (CEQ) guidance regarding efficiency and timeliness under NEPA (77 FR 14473). The NRC acknowledges that some—but not all—members of the public view as benefits that 1) these no action options would provide the opportunity to challenge impact determinations in individual licensing proceedings without a waiver under 10 CFR 2.335 and 2) some proceedings may include site-specific reviews of the environmental impacts of continued storage. However, the NRC concludes that the cost savings and efficiency afforded by this rulemaking outweigh those perceived benefits and notes that the waiver provision in 10 CFR 2.335 would permit challenge to the application of this rule in appropriate circumstances. The NRC has therefore decided to issue this rule to avoid significant and unnecessary costs in conformity with the CEQ policy favoring efficiency in agency environmental reviews.

As this discussion indicates, this rulemaking is procedural in nature and has no significant environmental impacts. In addition, this rulemaking is an amendment to 10 CFR part 51 that relates to procedures for filing and reviewing requests for licensing actions. Therefore, the adoption of this rule qualifies for the categorical exclusion under 10 CFR 51.22(c)(3)(i) from the requirement to prepare an environmental assessment or impact statement. Nonetheless,

the NRC has provided substantial information about this action in NUREG-2157, and the NRC is now issuing this record of decision.

XI. Paperwork Reduction Act Statement

This final rule does not contain new or amended information collection requirements subject to the Paperwork Reduction Act of 1995 (44 U.S.C. 3501 et seq.). Existing information collection requirements were approved by the Office of Management and Budget, control number 3150-0021.

Public Protection Notification

The NRC may not conduct or sponsor, and a person is not required to respond to, a request for information or an information collection requirement unless the requesting document displays a currently valid Office of Management and Budget control number.

XII. Regulatory Analysis

A regulatory analysis has not been prepared for this regulation because this regulation does not establish any requirements that would place a burden on licensees. A cost-benefit analysis of the alternative options considered by the NRC was prepared as part of the GEIS (Chapter 7). If continued storage must be assessed in site-specific licensing actions, the primary costs are incurred by the NRC and licensees and license applicants. Licensees and

license applicants ultimately shoulder the majority of costs incurred to the NRC in the course of licensing actions through the NRC's license-fee program. Costs also accrue through the NRC's adjudicatory activities, which affect the NRC, licensees, license applicants, and petitioners or participants in the proceeding. The GEIS contains an estimate that it could cost $27.3 million in constant dollars to address continued storage in site-specific proceedings.

XIII. Regulatory Flexibility Certification

In accordance with the Regulatory Flexibility Act of 1980 (5 U.S.C. 605(b)), the NRC certifies that this rule does not have a significant economic impact on a substantial number of small entities. The final rule modifies the generic determination regarding the consideration of environmental impacts of continued storage. This generic determination provides that the impact determinations from NUREG-2157 will be incorporated into EISs, EAs, or any other analysis prepared in connection with certain actions. The final rule affects only the licensing of nuclear power plants or ISFSIs. Entities seeking or holding NRC 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 (10 CFR 2.810).

XIV. Plain Writing

The Plain Writing Act of 2010 (Pub. L. 111-274) requires Federal agencies to write documents in a clear, concise, and well-organized manner. The NRC has written this document to be consistent with the Plain Writing Act as well as the Presidential Memorandum, "Plain Language in Government Writing," published June 10, 1998 (63 FR 31885).

XV. Backfitting and Issue Finality

The NRC has determined that the backfit rules (§§ 50.109, 70.76, 72.62, or 76.76) and the issue finality provisions in 10 CFR part 52 do not apply to this final rule because this amendment does not involve any provisions that will either impose backfits as defined in 10 CFR chapter I, or represent non-compliance with the issue finality of provisions in 10 CFR part 52. Therefore, a backfit analysis is not required for this final rule, and the NRC did not prepare a backfit analysis for this final rule.

XVI. Congressional Review Act

In accordance with the Congressional Review Act of 1996 (5 U.S.C. 801-808), 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 of the Office of Management and Budget.

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. 552 and 553; the NRC is adopting the following amendments 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:

AUTHORITY: Atomic Energy Act sec. 161, 1701 (42 U.S.C. 2201, 2297f); Energy Reorganization Act secs. 201, 202, 211 (42 U.S.C. 5841, 5842, 5851); Government Paperwork Elimination Act sec. 1704 (44 U.S.C. 3504 note). Subpart A also issued under National Environmental Policy Act secs. 102, 104, 105 (42 U.S.C. 4332, 4334, 4335); Pub. L. 95-604, Title II, 92 Stat. 3033-3041; Atomic Energy Act sec. 193 (42 U.S.C. 2243). 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)).

2. In § 51.23, revise the section heading and paragraphs (a) and (b) to read as follows:

§ 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.

* * * * *

3. In § 51.30, revise paragraph (b) to read as follows:

§ 51.30 Environmental assessment.

* * * * *

(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.

* * * * *

4. In § 51.50, revise paragraphs (a), (b)(2), and (c) introductory text to read as follows:

§ 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) ***

(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.

* * * * *

(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.

* * * * *

5. In § 51.53, revise paragraphs (b), (c)(2), and (d) to read as follows:

§ 51.53 Postconstruction environmental reports.

* * * * *

(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) ***

(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.

* * * * *

(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 '"Applicants Environmental Report—Construction Permit Stage."

6. Revise § 51.61 to read as follows:

§ 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.

7. In § 51.75, revise paragraphs (a), (b), and (c) introductory text to read as follows:

§ 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

[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.

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.

* * * * *

8. In § 51.80, revise paragraph (b)(1) to read as follows:

§ 51.80 Draft environmental impact statement—materials license.

* * * * *

(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.

* * * * *

9. In § 51.95, revise paragraphs (b), (c)(2), and (d) to read as follows:

§ 51.95 Postconstruction environmental impact statements.

* * * * *

(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) ***

(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.

* * * * *

(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.

10. In § 51.97, revise paragraph (a) to read as follows:

§ 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.

* * * * *

11. In appendix B to subpart A of part 51, footnote 7 is removed from Table B-1 and the entries for “Onsite storage of spent nuclear fuel” and “Offsite radiological impacts of spent

nuclear fuel and high-level waste disposal" under the "Waste Management" section of the table are revised to read as follows:

Appendix B to Subpart A—Environmental Effect of Renewing the Operating License of a Nuclear Power Plant

* * * * *

Table B-1.—Summary of Findings on NEPA Issues for License Renewal of Nuclear Power Plants[1]

Issue	Category[2]	Finding[3]
***	***	*
Waste Management		
*******		
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.

****

[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.

* * * * *

Dated at Rockville, Maryland, this 11th day of September, 2014.

For the Nuclear Regulatory Commission.

Annette L. Vietti-Cook,
Secretary of the Commission.

[FR Doc. 2014-22215 Filed 09/18/2014 at 8:45 am; Publication Date: 09/19/2014]