



SECRETARY

UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

March 21, 2016

COMMISSION VOTING RECORD

DECISION ITEM: SECY-15-0136

TITLE: DENIAL OF PETITIONS FOR RULEMAKING REQUESTING TO RESCIND REGULATIONS THAT MAKE GENERIC DETERMINATIONS REGARDING THE ENVIRONMENTAL IMPACTS OF SPENT FUEL STORAGE AND DISPOSAL WHEN CONSIDERING NUCLEAR POWER REACTOR LICENSE APPLICATIONS (PRM-51-30 AND PRM-51-31; NRC-2014-0014 AND NRC-2014-0055)

The Commission acted on the subject paper as recorded in the Staff Requirements Memorandum (SRM) of March 21, 2016.

This Record contains a summary of voting on this matter together with the individual vote sheets, views and comments of the Commission.

A handwritten signature in black ink, appearing to read "Annette L. Vietti-Cook", followed by a checkmark.

Annette L. Vietti-Cook
Secretary of the Commission

Enclosures:

1. Voting Summary
2. Commissioner Vote Sheets

cc: Chairman Burns
Commissioner Svinicki
Commissioner Ostendorff
Commissioner Baran
OGC
EDO
PDR

SECY NOTE: This Voting Record will be released the public 5 working days after the dispatch of the letter to the Petitioner

VOTING SUMMARY – SECY-15-0136

RECORDED VOTES

	<u>APPROVED</u>	<u>DISAPPROVED</u>	<u>ABSTAIN</u>	<u>NOT PARTICIPATING</u>	<u>COMMENTS</u>	<u>DATE</u>
Chrm. Burns	X				X	01/20/16
Cmr. Svinicki	X				X	02/16/16
Cmr. Ostendorff	X				X	01/20/16
Cmr. Baran	X				X	02/17/16

NOTATION VOTE

RESPONSE SHEET

TO: Annette Vietti-Cook, Secretary

FROM: Chairman Burns

SUBJECT: SECY-15-0136: DENIAL OF PETITIONS FOR RULEMAKING
REQUESTING TO RESCIND REGULATIONS THAT MAKE
GENERIC DETERMINATIONS REGARDING THE
ENVIRONMENTAL IMPACTS OF SPENT FUEL STORAGE AND
DISPOSAL WHEN CONSIDERING NUCLEAR POWER
REACTOR LICENSE APPLICATIONS (PRM-51-30 AND PRM-51-
31; NRC-2014-0014 AND NRC-2014-0055)

Approved XX Disapproved Abstain Not Participating


COMMENTS: Below XX Attached XX None

I approve SECY-15-0136 subject to the attached edits.

Entered in STARS

Yes XX

No



SIGNATURE

20 January 2016

DATE

[7590-01-P]

NUCLEAR REGULATORY COMMISSION

10 CFR Part 51

[Docket Nos. PRM-51-30 and PRM-51-31; NRC-2014-0014 and NRC-2014-0055]

Generic Determinations Regarding the Environmental Impacts of Spent Fuel Storage and Disposal when Considering Nuclear Power Reactor License Applications

AGENCY: Nuclear Regulatory Commission.

ACTION: Petitions for rulemaking; denial.

SUMMARY: The U.S. Nuclear Regulatory Commission (NRC) is denying two petitions for rulemaking (PRMs), PRM-51-30 and PRM-51-31, submitted by Diane Curran on behalf of 34 environmental organizations (the petitioners). The petitioners request that the NRC revise certain regulations that concern the environmental impacts of spent fuel storage and disposal ~~in environmental reviews for nuclear power plants license renewal applications~~. The NRC is denying the petitions because they provide an insufficient basis to consider a rulemaking to revise such regulations.

DATES: The dockets for the petitions for rulemaking, PRM-51-30 and PRM-51-31, are closed on **[INSERT DATE OF PUBLICATION IN THE FEDERAL REGISTER]**.

ADDRESSES: Please refer to Docket IDs NRC-2014-0014 and NRC-2014-0055, ~~respectively~~ as appropriate, when contacting the NRC about the availability of information regarding these petitions. You can access publicly-available documents related to the petitions using any of the following methods:

- **Federal Rulemaking Web Site:** Go to <http://www.regulations.gov> and search ~~on the~~ ~~petitionfor~~ Docket IDs NRC-2014-0014 and NRC-2014-0055. Address questions about NRC dockets to Carol Gallagher; telephone: 301-415-3463; e-mail: Carol.Gallagher@nrc.gov. For technical questions, contact the individual listed in the FOR FURTHER INFORMATION CONTACT section of this document.

- **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, 301-415-4737, or by e-mail to pdr.resource@nrc.gov. The ADAMS accession number for each document referenced (if it is available in ADAMS) is provided the first time that it is mentioned in the SUPPLEMENTARY INFORMATION section. For the convenience of the reader, instructions about obtaining materials referenced in this document are provided in the Section

IV. Availability of Documents.

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- **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: Jenny C. Tobin, Office of Nuclear Reactor Regulation, ~~telephone: 301-415-2328, e-mail: Jennifer.Tobin@nrc.gov~~, U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, ~~telephone: 301-415-2328, e-mail: Jennifer.Tobin@nrc.gov~~.

SUPPLEMENTARY INFORMATION:

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- III. Determination of Petitions.
- IV. Availability of Documents.

I. The Petitions.

Section 2.802 of Title 10 of the *Code of Federal Regulations* (10 CFR), "Petition for rulemaking," provides an opportunity for any interested person to petition the Commission to issue, amend, or rescind any regulation. The NRC has consolidated its response to PRM-51-30 and PRM-51-31 because both petitions make similar rulemaking requests. The NRC did not request public comment on PRM-51-30 and PRM-51-31 because there was sufficient information for review and because these the issues raised in these petitions have already been well-vetted discussed at length in past previous NRC proceedings.

PRM-51-30

The petitioners filed the first of their two petitions on December 20, 2013, as a part of their comments on the NRC's proposed Continued Storage Rule (formerly known as the Waste Confidence Decision and Rule) and that rule's associated generic environmental impact

statement (Continued Storage Generic Environmental Impact Statement (GEIS)).¹ The petitioners filed a corrected version of the ~~first~~ petition on January 7, 2014. The NRC published a notice of receipt of the ~~first~~ petition in the *Federal Register* (FR) on April 21, 2014, and assigned it Docket No. PRM-51-30 (79 FR 22055).

The petition requests that the NRC revise certain regulations in 10 CFR part 51 that concern the environmental impacts of spent fuel storage and disposal ~~in environmental reviews~~ for nuclear power plants ~~license renewal applications~~. The NRC implements its responsibilities under the National Environmental Policy Act of 1969 (NEPA) through its 10 CFR part 51 regulations. The petitioners assert that the NRC's 10 CFR part 51 regulations are "balkanized" and "disparate and inconsistent," and that these regulations should be made into a "cohesive and consistent whole." The petitioners identified the following NRC regulations related to the licensing of nuclear power plants as being within the scope of their request: 10 CFR 51.53(c),² 10 CFR 51.51 (Table S-3),³ 10 CFR 51.71(d),⁴ and Table B-1⁵ in appendix B to subpart A of 10

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¹ The Continued Storage GEIS is formally designated as NUREG-2157, "Generic Environmental Impact Statement for Continued Storage of Spent Nuclear Fuel." ~~"Waste Confidence" has been the NRC's generic determination regarding the technical feasibility and environmental impacts of safely storing spent fuel beyond the licensed life for operations of a nuclear power plant (NUREG-2157, Vol. 1, Section ES-1).~~ The NRC published the Continued Storage Rule as a proposed rule on September 13, 2013 (78 FR 56776), and as a final rule on September 19, 2014 (79 FR 56238). As part of the final rule, all of the public comments on the proposed rule were addressed in NUREG-2157.

² Section 51.53 is entitled "Post-construction environmental reports." Paragraph (c) describes the contents of the required environmental report submitted by an applicant in support of its application to renew a nuclear power plant's operating license.

³ Table S-3 is entitled "Table of Uranium Fuel Cycle Environmental Data" and is set forth at 10 CFR 51.51. Table S-3 shows the maximum effect per annual fuel requirement and is the basis for evaluating the contribution of the environmental effects of uranium mining and milling, the production of uranium hexafluoride, isotopic enrichment, fuel fabrication, reprocessing of irradiated fuel, transportation of radioactive materials and management of low-level wastes and high-level wastes related to uranium fuel cycle activities to the environmental costs of licensing ~~the a~~ nuclear power reactor.

⁴ Section 51.71 is entitled "Draft environmental impact statement—contents." Paragraph (d) describes the analysis required to be included in the draft environmental impact statement (EIS). For license renewal actions, the supplemental draft EIS relies on the findings and other supporting information in NUREG-1437, Revision 1, "Generic Environmental Impact Statement for License Renewal of Nuclear Plants—Final Report" (2013).

⁵ Table B-1 is entitled "Summary of Findings on NEPA Issues for License Renewal of Nuclear Power Plants."

CFR part 51 (Table B-1),⁶ as well as the NRC's proposed amendments to 10 CFR 51.23, as set forth in its September 13, 2013, proposed rule (78 FR 56776).⁷ ~~Except for 10 CFR 51.23 and Table S-3, these regulations concern the environmental review undertaken by the NRC staff when considering an application for the renewal of a nuclear power plant's operating license.~~

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Sections 51.53(c) and 51.71(d) are premised upon NUREG-1437, "Generic Environmental Impact Statement for License Renewal of Nuclear Plants," an environmental impact statement (EIS) initially published in May 1996 and then revised and updated in June 2013 (License Renewal GEIS).⁸ The License Renewal GEIS describes the potential environmental impacts of renewing the operating license of a nuclear power plant for an additional 20 years. The NRC classifies the license renewal issues described in the License Renewal GEIS as either generic or site-specific. Generic issues concern environmental impacts that are common to all nuclear power plants. Site-specific issues are addressed initially by the license renewal applicant (i.e., a nuclear power plant licensee seeking a renewal of its operating license under the NRC's license renewal regulations in 10 CFR part 54) in its environmental report, which is required by 10 CFR 51.45, and then by the NRC, in its supplemental environmental impact statement (SEIS) prepared for each license renewal application.⁹ For any given license renewal action, the License Renewal GEIS together with the site-specific SEIS documents the NRC's NEPA analysis.

⁶ Table B-1 is entitled "Summary of Findings on NEPA Issues for License Renewal of Nuclear Power Plants."

⁷ The proposed amendments to 10 CFR 51.23 were adopted in the final rulemaking (79 FR 56238; September 19, 2014). Section 51.23 is entitled "Environmental impacts of continued storage of spent nuclear fuel beyond the licensed life for operation of a reactor" and states 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 Continued Storage GEIS]" (10 CFR 51.23(a)).

⁸ The current version of the License Renewal GEIS is NUREG-1437, Revision 1.

⁹ Section 51.95(c) requires, for the consideration of potential environmental impacts of renewing a nuclear power plant's operating license, that the NRC prepare an environmental impact statement that is a supplement to the Commission's NUREG-1437, Rev. 1, "Generic Environmental Impact Statement for License Renewal of Nuclear Plants" (June 2013).

In Table B-1, generic issues are designated as "Category 1" issues and site-specific issues are designated as "Category 2" issues. Absent new and significant information, Category 1 issues are not required to be re-analyzed for an applicant's environmental report or for the staff's SEIS. Table B-1 codifies the findings of the License Renewal GEIS and is wholly concerned with nuclear power plant license renewal.¹⁰

The purpose of Table S-3 is to support the environmental review for new reactor license applications. In addition to considering the environmental impacts of the construction and operation of a commercial nuclear power reactor, the NRC considers the contributions from the uranium fuel cycle activities.¹¹ Table S-3 identifies the uranium fuel cycle impacts, generically, for new reactor license applications.

The petitioners assert that the NRC's proposed amendments to 10 CFR 51.23, as set forth in the NRC's proposed rule of September 13, 2013 (78~~7~~ FR 56776), are "confusing" to the extent that the proposed regulation included safety findings, which should be placed in either 10 CFR parts 50 or 52, and because the proposed regulation no longer includes the "reasonable assurance" finding. The petitioners also assert that Table S-3 has been "repudiated" and that it is inconsistent with the findings in Table B-1. In addition, the petitioners assert that Table B-1 does not include a finding as to whether offsite spent fuel disposal impacts are significant or not.

The petitioners further assert that 10 CFR 51.53(c) and 51.71(d) "excuse" license renewal applicants and the NRC, respectively, from addressing spent fuel storage impacts in individual license renewal cases. As both regulatory provisions are premised upon the findings

¹⁰ Table B-1 was amended to reflect the June 2013 License Renewal GEIS update. The NRC rule amending Table B-1 and other 10 CFR part 51 regulations was published in the Federal Register on June 20, 2013 (78 FR 37282).

¹¹ Uranium fuel cycle activities include "uranium mining and milling, the production of uranium hexafluoride, isotopic enrichment, fuel fabrication, spent fuel storage and disposal" (44 FR 45362; August 2, 1979).

in the License Renewal GEIS, the petitioners, essentially, object to the finding that impacts of spent fuel storage during the license renewal period are a Category 1, or generic, issue, and have a "small" impact. Finally, the petitioners assert that the economic costs of spent fuel storage and disposal should be incorporated into reactor cost-benefit analyses and that the need for power should be considered in license renewal decisions.

PRM-51-31

The petitioners filed their second petition on February 18, 2014. ~~The petitioners'~~ ~~second~~This petition asserts that COMSECY-13-0030, "Staff Evaluation and Recommendation for Japan Lessons-Learned Tier 3 Issue on Expedited Transfer of Spent Fuel"¹² (the expedited spent fuel transfer analysis), and NUREG-2161, "Consequence Study of a Beyond-Design-Basis Earthquake Affecting the Spent Fuel Pool for a U.S. Mark I Boiling - Water Reactor,"¹³ constitute new and significant information. The petitioners ~~further~~ request that the NRC "duly modify NRC's regulations that make or rely on findings regarding the environmental impacts of spent fuel storage during reactor operation, including Table B-1 and all regulations approving standardized reactor designs."

The NRC published a notice of receipt of the ~~second~~ petition in the ~~FR~~ Federal Register on May 1, 2014, and assigned it Docket No. PRM-51-31 (79 FR 24595). The petitioners subsequently submitted an "amended petition" for rulemaking on June 26, 2014, seeking to add "the observations made by [former] Chairman Macfarlane in her dissenting comments" on the expedited ~~transfer of spent fuel~~ transfer analysis. The petitioners assert that the former

¹² COMSECY-13-0030, "Memorandum from Mark Satorius, Executive Director for Operations, to NRC Commissioners Re: Staff Evaluation and Recommendations for Japan Lessons-Learned Tier 3 Issue on Expedited Transfer of Spent Fuel" (Nov. 12, 2013), and documents cited therein.

¹³ NUREG-2161, "Consequence Study of a Beyond-Design-Basis Earthquake Affecting the Spent Fuel Pool for a U.S. Mark I Boiling - Water Reactor," (September 2014).

Chairman's dissenting vote on the expedited spent fuel transfer ~~proceeding analysis~~ provides "new and significant" information that would affect the NRC's environmental reviews in license renewal. The NRC treated the "amended petition" as a supplement to the February 18, 2014, petition and re-noticed the petition, along with the supplement, for informational purposes only (79 FR 42989; July 24, 2014).

II. Reasons for Denial.

The NRC is denying ~~PRM-51-30 and PRM-51-31~~the petitions because the petitioners have not presented a sufficient basis ~~for the~~ ~~to-amendments~~ ~~to~~ the regulations ~~that they seek~~. ~~The petitioners largely contend that they present new and significant information that requires the agency to revisit its previous NEPA analyses that form the bases for the challenged regulations. Under Supreme Court and Commission precedent, information is considered new and significant if it provides a "seriously different picture" of the environmental consequences than was previously considered.¹⁴ As explained below, the NRC finds that the petitioners' information does not provide a "seriously different picture" of the environmental consequences of spent fuel storage. Instead, T~~the NRC ~~determined~~ ~~concludes~~ that the current technical ~~basis~~ ~~bases~~ for those regulations challenged by the petitioners remain sound.

The petitioners assert that the NRC's environmental review regulations are "balkanized"

The petitioners assert that "[t]he NRC's piecemeal and disjointed approach to the consideration of spent fuel storage and disposal impacts violates the NEPA principle that an

¹⁴ See, e.g., *Marsh v. Oregon Natural Resources Council*, 490 U.S. 360 (1989).

agency may not segment its analysis in a manner that conceals the environmental significance of its action." Segmentation refers to instances where a Federal agency splits a project into smaller components to avoid preparing an EIS, or where an agency does not consider related actions in a single EIS.¹⁵ The NRC does not agree that its approach to the consideration of spent fuel storage and disposal impacts is piecemeal and disjointed or that NRC's environmental review regulations in 10 CFR part 51 are "balkanized" or result in NEPA segmentation. While the petitioners have pointed to some instances where the agency relies on generic analyses as part of its overall NEPA review for certain licensing actions, the petitioners have not shown any case where the NRC artificially divides a licensing action into smaller components so as to preclude a complete environmental review of the action. Rather, as discussed below, the NRC fully considers all of the environmental impacts of each of its licensing actions through a combination of site-specific EISs and, where appropriate, generic EISs. Although addressed in two generic EISs prepared by the NRC (i.e., the License Renewal GEIS and the Continued Storage GEIS), spent fuel storage and disposal impacts are reassessed by the NRC staff during each new reactor and license renewal environmental review to determine if there is new and significant information that could alter the generic conclusions. The use of generic analyses by the NRC to support licensing decisions has been upheld by the United States Supreme Court.¹⁶ Further, for each individual licensing action, the applicable generic EISs are reassessed, as necessary, to account for any site-specific new and significant information. Therefore, despite the petitioners' arguments to the contrary, the NRC's

¹⁵ *Delaware Riverkeeper Network v. FERC*, 753 F.3d 1304, 1313 (D.C. Cir. 2014) ("An agency impermissibly 'segments' NEPA review when it divides connected, cumulative, or similar federal actions into separate projects and thereby fails to address the true scope and impact of the activities that should be under consideration."); see also Council on Environmental Quality (CEQ) regulation, 40-40 CFR 1508.25.

¹⁶ In a 1983 decision concerning a challenge to Table S-3, the Supreme Court stated that "[t]he generic method chosen by the agency is clearly an appropriate method of conducting the hard look required by NEPA." *Baltimore Gas & Elec. Co. v. NRDC*, 462 U.S. 87, 101, 103 S.Ct. 2246, 2254 (1983).

NEPA reviews are comprehensive and are not segmented.

With respect specifically to the environmental impacts of spent fuel storage and disposal for new reactor and license renewal applications, they are fully considered by the NRC through its use of: (1) generic analyses in addition to the License Renewal GEIS and the Continued Storage GEIS, as appropriated; (2) site-specific analyses; and (3) analyses of potentially new and significant information, the NRC prepares EISs for all new reactor and license renewal applications. Within the umbrella of both its generic and site-specific EISs, the NRC adequately considers the spent fuel storage impacts of its licensing decisions. The EISs for new nuclear power reactor licenses describe the environmental impacts from the onsite storage and management of spent nuclear fuel and offsite disposal based on 40 years of reactor operation, which is the maximum, initial term of a reactor license.¹⁷ The License Renewal GEIS describes the environmental impacts from the onsite storage and offsite disposal of spent nuclear fuel generated during an additional 20 years of reactor operation (i.e., 20 years beyond the expiration of the initial license).¹⁸ The Continued Storage GEIS describes the environmental impacts of the continued storage of spent nuclear fuel beyond the licensed life for operation of a reactor. The generic findings are reassessed by the NRC staff during each new reactor license and license renewal environmental review to determine if there is new and significant information that could alter them.

Moreover, the underlying technical bases for the consideration of spent fuel storage and disposal impacts in EISs for new nuclear power reactor licenses and the License Renewal GEIS are the same. Combined with the Continued Storage GEIS, these NEPA documents provide a

¹⁷ 10 CFR 52.104.

¹⁸ 10 CFR 54.31.

complete analysis of spent fuel storage and disposal environmental impacts. The regulations in 10 CFR part 51 are ~~both~~-premised upon, and support, this NEPA framework of generic EISs supported by site-specific EISs.¹⁹

The NRC's approach improves the effectiveness of environmental reviews by generically resolving issues that are not substantially different from one proceeding-proposed action to another, while still ensuring that ~~thosesite-specific~~ impacts are considered in subsequent licensing actions the environmental reviews. The NRC conducts environmental and safety reviews for the issuance of licenses for the operation of nuclear power plants including the onsite storage of spent nuclear fuel. The NRC has also conducted separate environmental and safety reviews for the issuance of specific licenses for the storage of spent nuclear fuel in independent spent fuel storage installations (ISFSIs).²⁰ With respect to spent fuel disposal, the U.S. Department of Energy (DOE) ~~is and the NRC are~~ responsible for developing an EIS for spent fuel disposal in a geologic repository. In addition, the NRC has previously determined the potential radiological effects of offsite spent fuel disposal in a permanent repository or some other permanent disposal scenario while evaluating the environmental effects of the uranium fuel cycle.²¹

The consideration of spent fuel storage and disposal environmental impacts builds upon the knowledge gained by the NRC from previous environmental reviews and associated

¹⁹ See CEQ regulation, 40 CFR 1502.4(c)(2) (permitting agencies to evaluate proposed actions generically) and 40 CFR 1508.28 (allowing the "coverage of general matters in broader environmental impact statements ... with subsequent narrower statements or environmental analyses ... incorporating by reference the general discussions and concentrating solely on the issues specific to the statement subsequently prepared.")

²⁰ NRC regulation, 10 CFR 72.3, defines an ISFSI as "a complex designed and constructed for the interim storage of spent nuclear fuel, solid reactor-related [Greater than Class C (GTCC)] waste, and other radioactive materials associated with spent fuel and reactor-related GTCC waste storage."

²¹ See WASH-1248, "Environmental Survey of the Uranium Fuel Cycle," April 1974, and NUREG-0116, "Environmental Survey of the Reprocessing and Waste Management Portions of the LWR Fuel Cycle," October 1976.

rulemakings and is consistent throughout the NRC's regulations in that the NRC relies on the same technical bases to make impact determinations. The only differences are ~~in~~ the timeframes in which these impacts occur and whether the impacts occur during continued onsite storage or offsite disposal. In each of these regulatory situations, the technical bases remain the same.

Tables S-3 and B-1 in the NRC's regulations were developed at separate times for different purposes but have common technical bases. The 2014 continued storage rule, and its supporting Continued Storage GEIS, updated the NRC's NEPA findings in Table B-1 for the issues pertaining to, "Onsite storage of spent nuclear fuel" and "Offsite radiological impacts of spent nuclear fuel and high-level waste disposal." In doing so, the NRC effectively incorporated the NEPA analysis of continued spent fuel storage into the new reactor, license renewal, and ISFSI impact analyses.

For a given future reactor licensing action that relies on the Continued Storage GEIS and rule, the NRC will incorporate the environmental impacts analyzed in the Continued Storage GEIS into the overall licensing decision. The NRC's NEPA review for each licensing action that involves either a new reactor or a license renewal application will fully account for the reasonably foreseeable impacts of spent fuel storage and disposal, including, where applicable, the impacts that have been analyzed generically in the Continued Storage GEIS and License Renewal GEIS as reassessed in light of any site-specific new and significant information.

The NRC concludes that the petitioners' argument that the NRC's 10 CFR pPart 51 environmental review regulations are not "balkanized," and are consistent, does not provide a "seriously different picture" of the environmental consequences of spent fuel storage and disposal. Instead, based on the above, the NRC concludes that the current technical bases for

these regulations remain sound and that the petitioners' proposed amendments are not necessary. Thus, there is no technical or regulatory reason to amend these regulations.

The petitioners assert that Table S-3 has been repudiated

The petitioners' expert, Dr. Arjun Makhijani, in a declaration attached to the petitioners' January 2014 submission, states that the Table S-3 finding regarding the impacts of spent fuel disposal is no longer valid because the finding is based upon the disposal of spent fuel in a bedded salt repository and that such disposal would result in zero releases of radioactive effluents, and therefore, zero radiological dose. Dr. Makhijani asserts that

[m]oreover, we note that Table S-3 at 10 CFR 51.51 is invalid for estimating high-level waste disposal impacts. Among other things, its underlying assumption of disposal in a bedded salt repository for spent fuel disposal was repudiated by the NRC itself in 2008. Therefore, the NRC must prepare a new disposal impact analysis in the context of its waste confidence decision.²²

The petitioners, through Dr. Makhijani's declaration, assert that the NRC must prepare a new analysis concerning the impacts of spent fuel disposal. As explained below, though, this argument does not provide a "seriously different picture" of the environmental consequences of spent fuel storage and disposal warranting an amendment to the NRC's regulations.

Dr. Makhijani's statement is not persuasive because it evaluates Table S-3 in isolation and does not consider later developments in the NRC's regulatory policy and Supreme Court precedent. The Atomic Energy Commission, the predecessor agency of the NRC, promulgated the initial version of Table S-3 on April 22, 1974 (39 FR 14188). Since the promulgation of

²² "Declaration of Dr. Arjun Makhijani Regarding the Waste Confidence Proposed Rule and Draft Generic Environmental Impact Statement," attached to PRM-51-30 (paragraph 2.8 on p. 6).

Table S-3, the Nuclear Waste Policy Act of 1982 (NWPA) adopted deep geologic disposal as the nation's solution for spent fuel disposal. ~~In addition~~Nonetheless, in 1983, the United States Supreme Court, in ~~its~~ *Baltimore Gas & Elec. Co. v. NRDC* decision,²³ upheld both Table S-3 and the approach taken by the NRC in using Table S-3 data in individual licensing proceedings. In *Baltimore Gas*, the Supreme Court recognized that the purpose of Table S-3 was not to evaluate or select the most effective long-term disposal technology or develop site selection criteria ~~but "to analyze intensively the most probable long-term waste disposal method."~~²⁴ ~~Instead this regard~~, the Court noted that the NRC's intent, as stated in the 1979 rule revising Table S-3 (44 FR 45362; August 2, 1979), was to estimate the impact of the long-term waste disposal method conservatively.²⁵ This conservative analysis included the NRC's use of the zero release assumption.²⁶ The Court also noted that other aspects of Table S-3 were premised upon the assumption that "all volatile materials in the fuel would escape to the environment" prior to the sealing of the geologic repository; this assumption balanced the zero-release assumption, an approach that the Court found acceptable.²⁷ In addition to concluding that it was "not unreasonable" for the NRC to employ the zero release assumption, the Court stated that "the zero-release assumption is but a single figure in an entire Table, which the Commission expressly designed as a risk-averse estimate of the environmental impact of the fuel cycle ... [a] reviewing court should not magnify a single line item beyond its significance as only part of a larger Table."²⁸

²³ *Baltimore Gas & Elec. Co. v. NRDC*, 462 U.S. 87, 103 S.Ct. 2246 (1983).

²⁴ *Id.*, 462 U.S. at 102, 103 S.Ct. at 2254-55.

²⁵ *Id.*, 462 U.S. at 102, 103 S.Ct. at 2255.

²⁶ *Id.* ("The zero-release assumption cannot be evaluated in isolation. Rather, it must be assessed in relation to the limited purpose for which the Commission made the assumption.")

²⁷ *Id.*, 462 U.S. at 103, 103 S.Ct. at 2255.

²⁸ *Id.*, 462 U.S. at 102-03, 103 S.Ct. at 2255.

Following the enactment of the NWPAA and the *Baltimore Gas* decision, the NRC issued a waste confidence decision in 1984 (49 FR 34658; August 31, 1984), and subsequently updated this decision in 1990 (55 FR 38472; September 18, 1990) and again in 2010 (75 FR 81032; December 23, 2010). In its 1990 revision, the Commission discussed the relationship of Table S-3 with its ~~Waste~~ ~~Confidence~~ decision. Specifically, the Commission noted that the promulgation of Table S-3 was the outgrowth of efforts to generically evaluate the environmental impacts of the operation of a light water reactor and in so doing, that Table S-3 assigned numerical values for environmental costs resulting from uranium fuel cycle activities to support one year of light water reactor operation. The number of curies indicated for spent fuel disposal in Table S-3 reflects the total volume of waste material, not the amount of radioactivity projected to be released from the repository—an issue that is to be addressed in the safety and environmental review for the actual geologic repository itself.

Dr. Makhijani's statements regarding the validity of ~~spent fuel~~ disposal in a bedded salt repository ~~for spent fuel and the zero release assumption were are~~ similar to comments he provided on the NRC's 2010 waste confidence decision update. In response to ~~Dr. Makhijani's~~ ~~these previous~~ comments, the NRC explained that, in considering the disposal of spent nuclear fuel in a geologic repository, its concern was not whether a zero-release assumption will be met, but rather that appropriate public health and safety standards are established and met during the construction and operation of ~~a the~~ repository. Such standards would ensure that any releases of radioactive material to the environment are not inimical to public health and safety.²⁹

²⁹ Continued Storage GEIS section D.2.49.2, p. D-517.

Table S-3 lists environmental data to be used by applicants and the NRC staff for new reactor license applications under 10 CFR parts 50 and 52. Specifically, Table S-3 is the basis for evaluating the environmental effects of the portions of the uranium fuel cycle for light water reactors that occur before new fuel is delivered to the plant and after spent fuel is removed from the plant site. The NRC has made generic determinations that the radiological impacts of the uranium fuel cycle on individuals off-site will remain at or below the Commission's regulatory limits (e.g., the public dose limits set forth in 10 CFR part 20). The NRC described this generic determination and conclusion in the License Renewal GEIS.³⁰ Additionally, as part of the new reactor EISs under 10 CFR part 52 and the License Renewal GEIS, the NRC concluded that the assumptions and methodology used in preparing Table S-3 were conservative enough that the impacts described by the use of Table S-3 would still be bounding. In these EISs, the staff discussed why the contemporary fuel cycle impacts are below those identified in Table S-3 and as such, Table S-3 remains bounding.³¹

Furthermore, the NRC concludes that Table S-3 is conservative because, as reflected in section 4.12.1.1 of the License Renewal GEIS, industry practice has shown that the current fleet of reactors uses nuclear fuel more efficiently due to higher fuel burnup. Therefore, less uranium fuel per year of reactor operation is required than in the past to generate the same amount of electricity. Thus Ffewer spent fuel assemblies per reactor-year are generated, hence, and the waste storage and deep geologic repository impacts are lessened. The NRC is not aware of petitioners have not provided any new information that would cause it the NRC to revisit these conclusions regarding Table S-3. Finally, the NRC has provided ample opportunity for public

³⁰ 2013 GEIS section 4.12.1.1, p. 4-185

³¹ For example, see the Bell Bend Nuclear Power Plant EIS, NUREG 2179, vol. 1, section 6.1, (April 2015), for a recent discussion of the NRC determination that Table S-3 remains bounding published in April 2015.

comment on all new reactor EISs as well as the 2013 revision to the License Renewal GEIS (NUREG-1437, Revision 1) and its related amendments to 10 CFR part 51.

The issue of concern to the NRC in considering the disposal of spent nuclear fuel in a geologic repository has not been whether a zero-release assumption will be met or ultimately the type of environmental media (e.g., bedded salt, basalt, granite, etc.) selected for the repository but rather that the appropriate standards are established and met, thereby ensuring that any releases of radioactive materials to the environment would not be inimical to public health and safety. The Commission has previously made clear in other proceedings that "[a]lthough a repository has not yet been constructed and its safety and environmental acceptability demonstrated, no fundamental breakthrough in science or technology is needed to implement a successful waste disposal program."³² This focus on whether a fundamental breakthrough in science or technology is needed has guided the Commission's consideration of the feasibility of the disposal of high level waste and spent nuclear fuel.

While the NRC and ~~U.S. Department of Energy~~ the DOE have, in the past, concentrated efforts regarding geologic repository research and licensing ~~efforts~~ on a non-bedded salt repository, the petitioners' characterization of the resulting analysis as confirming that there is a risk of "significant" radiation releases and radiation doses from deep geologic disposal is ~~also~~ not valid. Instead, the Commission has previously made clear in other proceedings that "[a]lthough a repository has not yet been constructed and its safety and environmental acceptability demonstrated, no fundamental breakthrough in science or technology is needed to implement a successful waste disposal program."³³ This focus on whether a fundamental

³² 2010 Waste Confidence Decision Update, 75 FR 81037, 81046 (December 23, 2010) *quoting* the 1984 Waste Confidence Decision, 49 FR 34658, 34667 (August 31, 1984).

³³ 2010 Waste Confidence Decision Update, 75 FR 81037, 81046 (December 23, 2010) *quoting* the 1984 Waste Confidence Decision, 49 FR 34658, 34667 (August 31, 1984).

breakthrough in science or technology is needed has guided the Commission's consideration of the feasibility of the disposal of high level waste and spent nuclear fuel. And, Aas stated in Volume 1, Appendix B₁ of the Continued Storage GEIS, "the consensus within the scientific and technical community engaged in nuclear waste management is that safe geologic disposal is achievable with currently available technology.... 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."³⁴

The issue of concern to the NRC in considering the disposal of spent nuclear fuel in a geologic repository has not been whether a zero-release assumption will be met or ultimately the type of environmental media (e.g., bedded salt, basalt, granite, etc.) selected for the repository but rather that the appropriate standards are established and met, thereby ensuring that any releases of radioactive materials to the environment would not be inimical to public health and safety. Radiation dose limits for disposal of radioactive materials are typically no greater than 100 mrem/yr (such as the U.S. Environmental Protection Agency (EPA) limits for the proposed Yucca Mountain geologic repository). Although a geologic repository meeting such radiation dose limits is not a "zero" release facility, compliance with these dose limits would provide adequate protection of public health and safety. -Given the substantial effort developing repositories, it is reasonable to assume that geologic disposal facilities can be developed within a variety of geologic formations and types that would be protective of public health and safety. For example, the NRC-National Academy of Sciences (NAS) study, referred to by Dr. Makhijani, concludes on the overall performance of candidate repositories that "[a]ll radionuclides in

³⁴ NUREG-2157, pg. 2 of Appendix B, section B.2.1.

unreprocessed spent fuel can be adequately contained."³⁵ ~~Therefore, under NEPA considerations, this is clearly not a risk for significant radiation releases and radiation doses as demonstrated. These findings are supported~~ by the NRC's recently completed ~~edition of~~ NUREG-1949, "Safety Evaluation Report Related to Disposal of High-Level Radioactive Wastes in a Geologic Repository at Yucca Mountain, Nevada."

~~The NRC concludes that the petitioners' zero release and disposal technology arguments do not provide a "seriously different picture" of the environmental consequences of spent fuel storage and disposal. Instead, based on the above, the NRC concludes that Table S-3 remains bounding and that the petitioners' proposed amendments are not necessary. In conclusion, the NRC has determined that Table S-3 is still bounding and there is little, if any, technical or regulatory benefit to updating it, as the purpose of Table S-3 is to inform the preparation of licensee environmental reports submitted with new reactor applications.~~

The petitioners assert that Table S-3 and Table B-1 are inconsistent with each other

The petitioners assert that Table S-3 and Table B-1 are inconsistent with each other. The petitioners state in PRM-51-30, "[t]he inconsistencies and questions raised by comparing Table S-3 and Table B-1 are unacceptable under NEPA's standard for clarity and rigor of scientific analysis." In his comments, Dr. Makhijani stated,

Table S-3 summarizes the NRC's conclusion that the impacts of spent fuel disposal will be zero, based on the assumption that spent fuel will be disposed of in a bedded salt repository. Proposed Table B-1 contradicts Table S-3 by concluding that long-term doses could be as high as 100 millirem per year. But the NRC does not attempt to reconcile proposed Table B-1 and Table S-3; ~~nor does it address the fact that in the 2008 Draft~~

³⁵ NRC ~~National Academies of Science~~ NAS Report, "A Study of the Isolation System for Geologic Disposal of Radioactive Wastes," p. 8 and 11.

~~Waste Confidence Update, it repudiated bedded salt as a geologic medium for a repository...~~³⁶

As explained below, though, this argument does not provide a "seriously different picture" of the environmental consequences of spent fuel storage and disposal warranting an amendment to the NRC's regulations.

The environmental effects of operating uranium fuel cycle facilities including radioactive waste disposal at a geologic repository were evaluated in two NRC documents, WASH-1248 and NUREG-0116. The results of this evaluation were summarized and promulgated as Table S-3 in 10 CFR 51.51(b). Paragraph (a) in 10 CFR 51.51 states:

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

The environmental effects or issues summarized in Table S-3 include: land use; water consumption and thermal effluents; radioactive releases; burial of transuranic, high-level and low-level radioactive wastes; and radiation doses from transportation and occupational exposures. The contributions in Table S-3 for reprocessing, waste management, and transportation of wastes are maximized for either of the two fuel cycles (i.e., a fuel cycle that

³⁶ Makhijani Declaration attached to PRM-51-30, p. 9.

includes spent fuel reprocessing and one that does not)—the cycle that results in the greater environmental impact, and thus the most conservative analysis, is used. The environmental impact values are expressed in terms normalized to show the potential impacts attributable to processing the fuel required for the operation of a 1,000-MWe nuclear power plant for one year at an 80 percent availability factor to produce about 800 MW-yr (0.8 GW-yr) of electricity. This normalization is referred to as one reference reactor year. For each environmental consideration, Table S-3 presents a result that has been integrated over the entire uranium fuel cycle except during reactor operations.³⁷ The environmental impacts of reactor operations are addressed in the EIS prepared for each individual reactor licensing action (i.e., an EIS for a new reactor licensing application or an SEIS for a license renewal application).

Although certain fuel cycle operations and fuel management practices have changed over the years, the assumptions and methodology used in preparing Table S-3 were, and continue to be, conservative enough that the impacts described in Table S-3 are still bounding.

In similar fashion, the NRC assessed the generic environmental impacts of renewing the operating license for a nuclear power plant in the License Renewal GEIS. Table B-1 summarizes the Commission's findings on the scope and magnitude of the environmental effects of renewing the operating license for a nuclear power plant, based on technical bases documented in the 2013 update of the License Renewal GEIS. Subject to an evaluation of those Category 2 issues, which that require further site-specific analysis, and the identification of possible new and significant information for any Category 1 or Category 2 issue, Table B-1 represents the analysis of the environmental impacts associated with the renewal of any operating license and is to be used in accordance with 10 CFR 51.95(c). On a 10-year cycle,

Commented [SGB4]: Should be the last sentence of the previous paragraph (i.e., part of the discussion of Table S-3).

Commented [SGB5]: Should be the start of a new paragraph (i.e., part of the discussion of Table B-1).

³⁷ The only exception is that the waste quantities listed under the entry called "solids (buried onsite)" also includes wastes generated at the reactor.

the Commission intends to review the findings in Table B-1 and update the table it if as necessary. The latest review and update was completed in 2013.

Both the License Renewal GEIS and Table B-1 incorporate Table S-3 by reference.³⁸

Tables S-3 and B-1 were developed at ~~separate different~~ times for different purposes.

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However, the technical bases for the consideration of spent fuel storage and disposal impacts for both tables are the same, and as such, the tables are consistent with each other. The impact of spent nuclear fuel disposal finding in Table B-1 (i.e., "Offsite radiological impacts of spent nuclear fuel and high-level waste disposal") is consistent with the solid waste disposal information presented in Table S-3, as the findings in Table B-1 could not ~~be have been~~ reached without the environmental effects evaluations conducted in WASH-1248 and NUREG-0116, which are summarized in Table S-3.

Moreover, even if there were differences in the assumptions in Table S-3 and Table B-1, those differences are not significant from a NEPA perspective. As noted above, the issue of concern to the NRC in considering the environmental impacts of the disposal of spent nuclear fuel in a geologic repository has not been whether a zero-release assumption will be met or ultimately the type of environmental media (e.g., bedded salt, basalt, granite, etc.) selected for the repository but rather that the appropriate standards are established and met, thereby ensuring that any releases of radioactive materials to the environment would not be inimical to public health and safety. For NEPA purposes, such releases within regulatory limits are clearly not significant radiation releases and radiation doses.

The NRC concludes that the petitioners' inconsistency arguments do not provide a "seriously different picture" of the environmental consequences of spent fuel storage and

³⁸ Table B-1 references Table S-3 under the "Uranium Fuel Cycle" section of the table.

disposal. Instead, based on the above, ~~The~~ NRC concludes that Tables B-1 and S-3 are consistent with each other and that there is the petitioners' proposed amendments are not necessary no technical or regulatory reason to amend either or both tables.

No significance determination for "off-site spent fuel disposal" in Table B-1

The petitioners assert that Table B-1, which codifies the findings of the License Renewal GEIS, does not include a finding as to whether the impacts of spent fuel disposal are significant ~~or not.~~ As explained below, though, this argument does not provide a "seriously different picture" of the environmental consequences of spent fuel storage and disposal warranting an amendment to the NRC's regulations.

~~The~~ "significance determination" in NEPA is made by an agency in determining whether it is necessary to prepare an EIS for a given proposed action.³⁹ ~~However, W~~with respect to the environmental review of reactor license renewal applications, the NRC has already determined that it is necessary to prepare EISs and, therefore, has prepared a generic EIS, the License Renewal GEIS, and prepares a supplement to this GEIS. ~~In addition,~~ for each site-specific license renewal action, ~~the NRC prepares a SEIS. Therefore~~ Thus, the lack of a finding as to whether the impacts of spent fuel disposal are "significant" or "not significant" is irrelevant, as the NRC has already satisfied the "significance determination" by preparing a generic EIS and by its regulatory requirement to prepare a site-specific EIS for each reactor license renewal application it considers.

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³⁹ *Lower Alloways Creek Tp. v. Public Service Elec. & Gas Co.*, 687 F.2d 732, 740 (3rd Cir. 1987) ("In agency must undertake a comprehensive assessment of the expected effects of a proposed action before it can determine whether that action is 'significant' for NEPA purposes ... If, however, it is clear that the human environment will be 'significantly' affected, then a full-scale EIS is mandatory."); *Blue Mountains Biodiversity Project v. Blackwood*, 161 F.3d 1208, 1211-14, and 1216 (9th Cir. 1998) (Forest Service made clear error of judgment in its decision to prepare an environmental assessment, rather than an environmental impact statement); see also Mandelker, NEPA Law and Litigation, 2d, §§ 8.48-8.58.

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Moreover, the NRC has extensively analyzed spent fuel storage and disposal environmental impacts in Table S-3, and in various EISs, namely, the License Renewal GEIS, ~~in~~ the Continued Storage GEIS, ~~in~~ SEISs for individual license renewal actions, and ~~in its~~ the review, adoption, and supplementation of the DOE's EISs for Yucca Mountain. The License Renewal GEIS provides the regulatory and technical basis for the Commission's findings and the associated impact significance levels for each environmental NEPA issue listed in Table B-1. The NRC's evaluation of the environmental impacts of the issue, "Offsite radiological impacts of spent nuclear fuel and high-level waste disposal,"⁴⁰ was documented in the 1996 License Renewal GEIS, which relied upon the findings of the NRC's 1990 Waste Confidence Decision and Rule. In addition, the NRC analyzed the EPA's generic repository standards and dose limits in existence at the time and concluded that offsite radiological impacts warranted a Category 1 (generic) determination (61 FR 28467; June 5, 1996). However, ~~in response due to the D.C. Circuit Court's decision of the U.S. Court of Appeals for the D.C. Circuit in New York v. NRC and its remand of the 2010 Waste Confidence Decision and Rule (75 FR 81032;~~ December 23, 2010), the NRC was ~~not~~ unable to complete its review and update of the impact finding for this issue in the 2013 License Renewal GEIS (NUREG-1437, Revision 1) and update of Table B-1. As a result, the 2013 License Renewal GEIS and rule (78 FR 37282; June 20, 2013) reclassified the issue from Category 1 with no impact level assigned, to an uncategorized issue with an uncertain impact level.

On August 26, 2014, the Commission approved the Continued Storage Rule and its associated GEIS (Continued Storage GEIS) amending 10 CFR part 51 to revise the generic

⁴⁰ This issue was named "Offsite radiological impacts (spent fuel and high level waste disposal)" in the 1996 license renewal GEIS and rule.

determination on the environmental impacts of continued storage of spent nuclear fuel beyond the licensed life for operation of a reactor. In making conforming changes to the Table B—1 entry for the issue "Offsite radiological impacts of spent nuclear fuel and high-level waste disposal," the final rule restored the Category 1 designation and references the existing radiation protection standards for Yucca Mountain instead of making a single impact finding.

The NRC's practice, once it has determined to prepare an EIS, has been to assign a significance level to most potential environmental impacts, by resource area or environmental issue, arising from the proposed action. These levels are "Small, Moderate, and Large." The assigning of these levels to any given impact is not required by law; it is solely a matter of NRC practice. Neither the Council on Environmental Quality's nor the NRC's regulations for implementing NEPA under 10 CFR part 51 explicitly require an agency to assign a single significance level to environmental impact issues. Instead, CEQ regulations state that "[i]mpacts shall be discussed in proportion to their significance" in the context of preparing environmental impact statements for agency actions.⁴¹ Further, Thus, the NRC does not assign such a level to every resource area or environmental issue covered by a given EIS. The NRC only assigns a single significance level for a generic issue where it is meaningful and appropriate to do so when considering both the context and intensity of a potential environmental impact.⁴²

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In this regard, the NRC has never assigned a single impact significance level to the issue of "Offsite radiological impacts of spent nuclear fuel and high-level waste disposal." Although the status of a repository, including a repository at Yucca Mountain, remains uncertain

⁴¹ 40 CFR 1502.2(b).

⁴² See CEQ regulation 40 CFR 1508.27, which defines the term "significantly," in relation to both "context" and "intensity."

and beyond the control of the NRC, the NRC has adopted EPA's radiation protection standards (40 CFR part 197) for Yucca Mountain because they are the current standard for ensuring that the ultimate disposal of spent nuclear fuel will present no undue risk to public health and safety. As discussed in the Continued Storage GEIS, wherever a geologic repository is ultimately sited, the NRC's and EPA's environmental and radiological protection standards ~~would~~ will apply. Given these considerations, the Commission's narrative finding in Table B-1 with respect to the issue of offsite disposal is ~~likewise~~ appropriate. That finding states "[t]he 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." Therefore, the Commission, by rule, has determined that a single significance determination is not necessary for this issue.

~~Further, neither the Council on Environmental Quality's nor the NRC's regulations for implementing NEPA under 10 CFR part 51 explicitly require an agency to assign a single significance level to environmental impact issues; CEQ regulations state that "[i]mpacts shall be discussed in proportion to their significance" in the context of preparing environmental impact statements for agency actions.⁴³~~

Commented [SGB10]: I moved this explanation up.

The NRC concludes that the petitioners' significance determination argument does not provide a "seriously different picture" of the environmental consequences of spent fuel storage and disposal. Instead, based on the above, the NRC concludes that~~In conclusion, the petitioners' request and~~ assertion that NEPA requires an agency to assign a single level of

⁴³ 40 CFR 1502.2(b).

significance to the issue in question is ~~not proven without merit~~ and that the petitioners' proposed amendment to the information presented does not provide a sufficient basis to amend the NRC's finding for the issue, "Offsite radiological impacts of spent nuclear fuel and high-level waste disposal," in Table B-1 in appendix B to subpart A of 10 CFR part 51 is not necessary.

The petitioners assert that license renewal applicants in 10 CFR 51.53(c) and NRC staff in 51.71(d) are excused from addressing spent fuel storage impacts in license renewal environmental reviews

The ~~NRC disagrees with the~~ petitioners' assertion that the NRC's regulations in 10 CFR 51.53(c) and 51.71(d) "excuse license renewal applicants and the NRC from addressing spent fuel storage impacts in license renewal cases." As explained below, though, this argument does not provide a "seriously different picture" of the environmental consequences of spent fuel storage and disposal warranting an amendment to the NRC's regulations. Instead, it is an inaccurate interpretation of the NRC's regulations; spent fuel storage impacts are fully evaluated as part of the NRC's license renewal actions.

~~The~~ NRC has determined that the potential environmental impacts of spent fuel storage ~~impacts~~ are of a generic nature and as such, do not need to be re-analyzed for every license renewal action. As mentioned previously, for a given reactor license renewal that relies on the Continued Storage and License Renewal GEISs, the NRC will incorporate the environmental impacts analyzed in the Continued Storage GEIS as well as in the License Renewal GEIS into the overall NEPA analysis supporting its licensing decision. ~~T~~he Supreme Court has upheld the use of generic environmental analyses by the NRC.⁴⁴ Additionally, As part of the its environmental review for each license renewal application, the NRC reviews both generic and

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⁴⁴ *Baltimore Gas*, 462 U.S. at 101, 103 S. Ct. at 2254 ("The generic method chosen by the agency is clearly an appropriate method of conducting the hard look required by NEPA").

site-specific issues for ~~any~~ new and significant information. In the event that the NRC determines that there is new and significant information ~~concerning the generic spent fuel storage impact finding or any other generic finding~~, the NRC will consider such information when preparing the supplemental EIS for that particular licensing action and, if necessary, will also determine whether the License Renewal GEIS or Continued Storage GEIS should be revised accordingly.

Moreover, the quality of the NRC's environmental analysis of spent fuel storage is not dependent on whether ~~the analysis is the NRC prepares a~~ site-specific or generic ~~analysis~~. In ~~conducting-developing~~ both the License Renewal GEIS and the Continued Storage GEIS, the NRC employed assumptions, including those based upon reactor licensee operating experience, that are sufficiently conservative to bound the predicted impacts such that any variances that may occur from site to site are unlikely to result in environmental impact determinations that are greater than those presented in ~~both the~~ GEISs.⁴⁵ In addition, recent spent fuel studies (including ~~the~~ expedited spent fuel transfer regulatory analysis in COMSECY-13-0030 and NUREG-2161) continue to support the findings of the License Renewal GEIS. ~~Therefore, T~~although ~~these~~ studies may contain "new" information, the information is not "significant." ~~For instance, T~~the NUREG-2161 study compared ~~its~~ spent fuel pool accident consequences findings to findings from previous research studies and ~~found-determined~~ that they ~~are were~~ of the same magnitude. ~~Finally, the Continued Storage GEIS supports the Commission's original determination that supports use of generic analysis.~~

~~The~~ NRC concludes that the petitioners' arguments regarding 10 CFR 51.53(c) and 51.71(d) do not provide a "seriously different picture" of the environmental consequences of

Commented [SGB12]: New paragraph.

⁴⁵ Statements of Consideration for 1996 (61 FR 28467, 28479-480) and 2013 (78 FR 37282, 37310) License Renewal GEISs.

spent fuel storage and disposal. Instead, based on the above, the NRC concludes that spent fuel storage impacts are fully evaluated as part of the NRC's license renewal actions and that the petitioners' proposed amendments are not necessary. Thus there is no technical or regulatory reason to amend these regulations.

The petitioners assert that the need for power and economic costs were excluded in license renewal environmental reviews

The petitioners assert that the NRC regulations in 10 CFR 51.53(c) and 51.71(d) excuse license renewal applicants and the NRC staff from addressing the need for power in license renewal cases. The petitioners state, "[b]y excluding need for power from consideration in re-licensing decisions, the [Continued Storage] GEIS cripples its ability to assess the environmental impacts of storing spent fuel.... This results in an 'unbounded' analysis of radiological risk." The petitioners also assert that "it is essential to incorporate the economic costs of spent fuel storage and disposal in reactor cost-benefit analyses." As explained below, though, this argument does not provide a "seriously different picture" of the environmental consequences of spent fuel storage and disposal warranting an amendment to the NRC's regulations.

In conjunction with the issuance of the License Renewal GEIS in 1996, the Commission amended its environmental protection regulations concerning environmental reviews for nuclear power plant license renewal actions.⁴⁶ These amendments defined the generic environmental impacts addressed in the License Renewal GEIS and the environmental impacts for which nuclear plant site-specific analyses were to be performed. The Commission stated in the June

⁴⁶ 61 FR 28467; June 5, 1996.

5, 1996 final rule for the "Environmental Review for Renewal of Nuclear Power Plant Operating Licenses,"

[T]he NRC will neither perform analyses of the need for power nor draw any conclusions about the need for generating capacity in a license renewal review. [The] definition of purpose and need reflects the Commission's recognition that, absent findings in the safety review required by the Atomic Energy Act of 1954, as amended, or in the NEPA environmental analysis that would lead the NRC to reject a license renewal application, the NRC has no role in the energy planning decisions of State regulators and utility officials. From the perspective of the licensee and the State regulatory authority, the purpose of renewing an operating license is to maintain the availability of the nuclear plant to meet system energy requirements beyond the term of the plant's current license.⁴⁷

As stated in the 2013 License Renewal GEIS,

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~~¶~~The purpose and need for the proposed action (issuance of a renewed license) is to provide an option that allows for baseload power generation capability beyond the term of the current nuclear power plant operating license to meet future system generating needs. Such needs may be determined by other energy-planning decision-makers, such as State, utility, and, where authorized, Federal agencies (other than ~~the~~ NRC). Unless there are findings in the safety review required by the Atomic Energy Act of 1954, as amended (AEA), or the NEPA environmental review that would lead the NRC to reject a license renewal application, the NRC does not have a role in the energy-planning decisions of whether a particular nuclear power plant should continue to operate.⁴⁸

As ~~shown-demonstrated~~ by these statements, it has been the NRC's longstanding position ~~to not to~~ consider the need for power or economic costs in making its license renewal decisions. Consideration of the need for power or the economic cost of renewing the operating license of ~~a~~ nuclear reactor is beyond the NRC's statutory and regulatory purview; rather, such

⁴⁷ 61 FR at 28472.

⁴⁸ License Renewal GEIS, NUREG-1437, Revision 1 (2013), Section 1.3, p. 1-3 – 1-4.

consideration is the responsibility of State and local authorities and, where appropriate, Federal ~~agencies~~ entities such as the Federal Energy Regulatory Commission or the Tennessee Valley Authority. As noted above, the NRC provides a complete picture of the environmental impacts of spent fuel storage at the time of license renewal for those authorities' consideration.

Commented [SGB13]: TVA is not a federal agency, it is a federally owned corporation.

The NRC concludes that the petitioners' need for power and economic costs arguments do not provide a "seriously different picture" of the environmental consequences of spent fuel storage and disposal and, thus, that the petitioners' proposed amendments are not necessary. The petitioners' assertion that NRC's regulatory approach of excluding need for power from consideration in re-licensing decisions "cripples" NRC's ability to assess the environmental impacts of storing spent fuel is not proven and does not provide a sufficient regulatory basis to amend the NRC's regulations.

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"Reasonable assurance" findings not included in proposed section 51.23

In commenting upon the NRC's proposed Continued Storage rule (78 FR 56776; September 13, 2013), the petitioners asserted that the NRC's proposal to remove the "reasonable assurance" statement from 10 CFR 51.23(a) was improper. Prior to the promulgation of the Continued Storage final rule (79 FR 56238; September 19, 2014), 10 CFR 51.23(a) stated, in part, that "the Commission believes there is reasonable assurance that sufficient mined geologic repository capacity will be available to dispose of the commercial high-level radioactive waste and spent fuel generated in any reactor when necessary."⁴⁹ In the final Continued Storage rule, the NRC removed ~~the this~~ "reasonable assurance" statement.⁵⁰

As explained below, the petitioners' assertion that this removal was improper does not provide a

⁴⁹ 10 CFR 51.23(a) (2013).

⁵⁰ 79 FR at 56260.

"seriously different picture" of the environmental consequences of spent fuel storage and disposal warranting an amendment to the NRC's regulations.

The statements of consideration of the final Continued Storage rule explained that 10 CFR 51.23(a) sets forth the NRC's generic determination that the environmental impacts of the continued storage of spent nuclear fuel beyond the licensed life for operation of a reactor are those impacts identified in NUREG-2157 (the Continued Storage GEIS). In particular, the statements of consideration noted that,

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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.⁵¹

Consequently, there is-was no need to retain the "reasonable assurance" statement, which is a safety finding, as 10 CFR 51.23(a) stated only the generic determination and the remainder of 10 CFR 51.23 concerned the NRC's NEPA compliance. In this regard, the statements of consideration explained,

The [Continued Storage] 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 [Continued Storage] 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 [Continued Storage] 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.

⁵¹ 79 FR at 56253.

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 [Continued Storage] 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 [Continued Storage] 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 [Continued Storage] GEIS.⁵²

~~In light of the September 19, 2014 Continued Storage rulemaking's identification of the "reasonable assurance" statement as a safety statement that would be inappropriate to be included in the NRC's rules governing NEPA compliance, the petitioners' arguments do not provide a "seriously different picture" of the environmental consequences of spent fuel storage and disposal and, thus, the petitioners' proposed amendments are not necessary. do not present any technical or regulatory basis to amend 10 CFR 51.23, particularly in light of the September 19, 2014 Continued Storage rulemaking.~~

Commented [SGB16]: New paragraph.

The petitioners assert that expedited spent fuel transfer analysis is "new and significant information"

The petitioners request that the NRC "consider, in all pending and future reactor licensing and re-licensing decisions, new and significant information bearing on the environmental impacts of high-density pool storage in reactor pools and alternatives for avoiding or mitigating those impacts." The petitioners assert that the NRC ~~staff~~ generated new and significant information during its post-Fukushima Expedited Spent Fuel Transfer proceeding.

⁵² 79 FR at 56254-55.

However, the petitioners have not explained how this information is new and significant in light of the fact that it is consistent with previous staff findings.

~~Specifically,~~ On October 9, 2013, the NRC released NUREG-2161, "Consequence Study of a Beyond-Design-Basis Earthquake Affecting the Spent Fuel Pool for a U.S. Mark I Boiling Water Reactor" and, on November 12, 2013, the NRC delivered a regulatory analysis in COMSECY-13-0030, "Staff Evaluation and Recommendation for Japan Lessons-Learned Tier 3 Issue on Expedited Transfer of Spent Fuel." These documents concluded that spent fuel pools are very robust structures with large safety margins, and that proposed regulatory actions for spent fuel pool safety improvements were not warranted. This conclusion not only covers spent fuel pools at operating reactors applying for license renewal but also spent fuel pools that would be constructed at new reactor sites. Citing the low risk to public health and safety from spent fuel pool storage, the Commission subsequently concluded that regulatory action need not be pursued in Staff Requirements Memorandum (SRM), SRM-COMSECY-13-0030, issued on May 23, 2014.

Commented [SGB17]: New paragraph.

~~The petitioners believed that f~~Former Chairman Allison Macfarlane's provided separate comments on COMSECY-13-0030, ~~also provide new and significant information that requires the NRC to reconsider its impact findings in the 2013 license renewal GEIS. These former Chairman's~~ comments were considered by the other CommissionersCommission in the development of the SRM on this issue. However, the ~~other four NRC CommissionersCommission at that time~~ determined in SRM-COMSECY-13-0030, that no further generic assessments concerning the expedited transfer of spent fuel to dry cask storage needed to be pursued. Notably, the SRM supported the staff's approach of using the NRC's Safety Goal Policy Statement of 1986 as a screening metric. ~~The~~ SRM-COMSECY-13-0030 is the agency's determination on this issue.

Nonetheless, the petitioners contend that NUREG-2161 and COMSECY-13-0030 constitute new and significant information based on those documents' discussion of the severity of the impact of a spent fuel pool accident, sensitivity studies showing that some mitigation measures could be cost beneficial, and the possibility that a reactor accident could impact the likelihood of a spent fuel pool fire. However, none of these sources of information provide a "seriously different picture" of the environmental consequences of spent fuel storage. First, as noted above, the NRC has frequently recognized that the consequences of a spent fuel pool accident could be large but has determined that the overall risk of spent fuel pool accidents is small in light of the low probability of such an event.⁵³ Thus, the petitioners have not shown that the size of the consequences of a spent fuel pool accident constitutes new and significant information. Rather, NUREG-2161's and COMSECY-13-0030's recognition that the consequences of a spent fuel pool accident could be large but that the overall risk from such an event is small in light of the low probability of such an event comports with the agency's previous considerations of this issue. Second, while the sensitivity studies may have shown that some mitigation measures could be cost-beneficial, they are based on alternate assumptions that do not represent the NRC's analysis of the most likely impacts of a spent fuel pool accident. In any event, petitioners have not shown with specificity that any information in these sensitivity studies would undermine the agency's overall conclusion that, despite potentially large consequences, the low probability renders the overall risk of a spent fuel pool accident to be low. Finally, contrary to petitioners' assertions, the NRC has frequently

⁵³ License Renewal GEIS, NUREG-1437, Revision 1 (2013), Appendix E, p. E-34 to -39.

responded to claims that the probability of a reactor accident could impact the probability of a spent fuel pool accident and repeatedly found that such a probability is very low.⁵⁴

~~In conclusion, Consequently, the NRC concludes that neither COMSECY-13-0030 nor~~
NUREG-2161, COMSECY-13-0030, nor SRM-COMSECY-13-0030 constitute "new and significant information" requiring the NRC to supplement any of its prior EISs, whether generic or specific. ~~Similarly, the NRC concludes that there is~~Therefore, the petitioners have not identified a sufficient ~~no~~ technical or regulatory basis to amend those of ~~its the~~ NRC's "regulations that make or rely on findings regarding the environmental impacts of spent fuel storage during reactor operation, including Table B-1 and all regulations approving standardized reactor designs."

Commented [SGB18]: New paragraph.

III. Determination of Petitions.

~~For the reasons cited in Section II of this document, the NRC is denying PRM-51-30 and PRM-51-31. The petitions failed to present any significant new information or arguments or sufficient has concluded that there is no technical or regulatory basis to amend the NRC regulations identified in the PRM-51-30 and PRM-51-31. Therefore, the NRC is denying PRM-51-30 and PRM-51-31 that would warrant the requested rulemaking.~~

Commented [SGB19]: Move this to below the section of "Earlier part 51 PRMs"

Earlier Part 51 PRMs

Several of the regulations identified by the petitioners have been the subject of prior rulemaking petitions (i.e., PRM-51-1, PRM-51-10, PRM-51-12, and PRMs-51-14 to 51-28) and

⁵⁴ 73 FR at 46210; 2013 GEIS at E-38; NUREG-2157 at D-438 to D-440; COMSECY-13-0030, Enclosure 1 at 138.

issues similar to those raised by the petitioners were considered by the Commission in these prior petitions, ~~and~~ thus, these issues have been ~~well-vetted~~ thoroughly evaluated by the Commission. The PRM-51-1 petitioner asserted~~eds~~ that Table S-3 "seriously understate[d]" the impact on human health and safety from the uranium fuel cycle and that the Table S-3 values should be revised accordingly.⁵⁵ The NRC denied PRM-51-1 based upon the Commission's "generic determination that the radiological impacts of the uranium fuel cycle ... on individuals off-site will remain at or below the Commission's regulatory limits, and as such, are of small significance."⁵⁶ The NRC described this generic determination in Chapter 6 of the 1996 version of the License Renewal GEIS; the generic determination was based upon findings made in various NRC and EPA rulemakings.⁵⁷

The petitioners in PRM-51-10 and PRM-51-12 challenged the generic findings for spent fuel storage impacts codified in Table B-1 and requested a rulemaking to remove this finding.⁵⁸ The petitioners raised the prospect of a fire at a nuclear power reactor's spent fuel pool and the resulting release of radioactive material to the environment. According to the petitioners' scenario, the spent fuel pool fire would be initiated by either an accident or a successful terrorist strike that would cause a partial or complete drain of the cooling water in the spent fuel pool. The petitioners requested the amendment of several of the regulations that are the subject of PRM-51-30 and PRM-51-31, namely, Table B-1, 10 CFR 51.23, 51.53(c) and 51.95(c).⁵⁹ The petitioners requested that the impacts of spent fuel storage be considered on a site-specific basis, in license renewal cases, rather than generically, due to this potential threat. The Commission denied PRM-51-10 and PRM-51-12, concluding that the risk of such a spent fuel

⁵⁵ 73 FR 14946; March 20, 2008.

⁵⁶ 73 FR at 14947.

⁵⁷ *Id.*, at 14948.

⁵⁸ 73 FR 46204; August 8, 2008.

⁵⁹ *Id.*, at 46205.

pool fire was very low and that, given the safety and security requirements that applied to all plants, as well as the physical robustness of spent fuel pools, the environmental impacts of spent fuel pool storage could be handled generically.⁶⁰ The NRC's denial of PRM-51-10 and PRM-51-12 was upheld in court.⁶¹

Finally, in a series of virtually-substantively identical petitions, docketed as PRM-51-14 through PRM-51-28, ~~the~~ petitioners requested that the NRC rescind all regulations that reach generic environmental impact conclusions regarding severe reactor accidents and spent fuel pool accidents, which would include various provisions of Table B-1 and 10 CFR 51.53. The PRM-51-14 through PRM-51-28 petitions were filed shortly after the NRC issued its Near-Term Task Force (NTTF) report, "Recommendations for Enhancing Reactor Safety in the 21st Century, the [NTTF] Review of Insights from the Fukushima Dai-ichi Accident," dated July 12, 2011. The NTTF report provided the NRC staff's recommendations to enhance U.S. nuclear power plant safety following the March 11, 2011, Fukushima accident in Japan. After determining that the NTTF report did not constitute new and significant information and further, that the petitioners had provided no-insufficient technical or regulatory basis to amend any of the NRC regulations in question, the NRC denied the PRM-51-14 through PRM-51-28 petitions.⁶²

Conclusion

For the reasons cited in this document, the NRC is denying PRM-51-30 and PRM-51-31.

The petitions failed to present any significant new information or arguments or sufficient technical or regulatory basis that would warrant the requested rulemaking.

Commented [SGB20]: This was moved from above.

⁶⁰ *Id.*, at 46206-12.

⁶¹ *New York v. U.S. Nuclear Regulatory Commission*, 589 F.3d 551 (2nd Cir. 2009).

⁶² 80 FR 480235 (August 12, 2015).

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IV. Availability of Documents.

The documents identified in the following table are available to interested persons through one or more of the following methods, as indicated. For more information on accessing ADAMS, see the ADDRESSES section of this document.

DOCUMENT	ADAMS ACCESSION NO. / WEB LINK / FEDERAL REGISTER CITATION
Blue Ribbon Commission on America's Nuclear Future- Final Report, January 2012.	http://energy.gov/sites/prod/files/2013/04/f0/brc_finalreport_jan2012.pdf
CLI-14-07, DTE Electric Co., et al., July 17, 2014	http://www.nrc.gov/reading-rm/doc-collections/commission/orders/2014/2014-07cli.pdf
"Comments by Environmental Organizations on Draft Waste Confidence Generic Environmental Impact Statement [GEIS] and Proposed Waste Confidence Rule and Petition to Revise and Integrate All Safety and Environmental Regulations Related to Spent Fuel Storage and Disposal," January 7, 2014.	ML 14029A124 ML 14029A169 ML 14029A154
COMSECY-13-0030, Staff Evaluation and Recommendation for Japan Lessons-Learned Tier 3 Issue on Expedited Transfer of Spent Fuel, November 12, 2013.	ML 13273A601
COMSECY-13-0030 Vote Sheet, Staff Evaluation and Recommendation for Japan Lessons-Learned Tier 3 Issue on Expedited Transfer of Spent Fuel, April 8, 2014.	http://www.nrc.gov/reading-rm/doc-collections/commission/comsecy/2013/2013-0030comvtr.pdf
<i>Federal Register</i> notice— Consideration of Environmental Impacts of Temporary Storage of Spent Fuel After Cessation of Reactor Operation, December 23, 2010.	75 FR 81032

<i>Federal Register</i> notice - Waste Confidence —Continued Storage of Spent Nuclear Fuel (proposed rule), September 13, 2013.	78 FR 56776
<i>Federal Register</i> notice – Environmental Effects of the Uranium Fuel Cycle, April 22, 1974.	39 FR 14188
<i>Federal Register</i> notice – Licensing and Regulatory Policy and Procedures for Environmental Protection; Uranium Fuel Cycle Impacts From Spent Fuel Reprocessing and Radioactive Waste Management, August 2, 1979.	44 FR 45362
<i>Federal Register</i> notice – Waste Confidence Decision, August 31, 1984.	49 FR 34658
<i>Federal Register</i> notice – Consideration of Environmental Impacts of Temporary Storage of Spent Fuel After Cessation of Reactor Operation, September 18, 1990.	55 FR 38472
<i>Federal Register</i> notice – Environmental Review for Renewal of Nuclear Power Plant Operating Licenses, June 5, 1996.	61 FR 28467
<i>Federal Register</i> notice – Waste Confidence Decision Update, December 23, 2010.	75 FR 81037
<i>Federal Register</i> notice - Continued Storage of Spent Nuclear Fuel (final rule), September 19, 2014.	79 FR 56238
<i>Federal Register</i> notice— – Revisions to Environmental Review for Renewal of Nuclear Power Plant Operating Licenses, June 20, 2013.	78 FR 37282
<i>Federal Register</i> notice - Revise and Integrate All Safety and Environmental Regulations Related to Spent Fuel Storage and Disposal, April 21, 2014.	79 FR 22055
<i>Federal Register</i> notice - Environmental Impacts of Spent Fuel Storage During Reactor Operation, May 1, 2014.	79 FR 24595
<i>Federal Register</i> notice - Environmental Impacts of Spent Fuel Storage During Reactor Operation, <u>July 24, 2014</u> .	79 FR 42989
<i>Federal Register</i> notice - New England Coalition on Nuclear Pollution; Denial of Petition for Rulemaking, March 20, 2008.	73 FR 14946
<i>Federal Register</i> notice - The Attorney General of Commonwealth of Massachusetts, The Attorney General of California; Denial of Petitions for Rulemaking, August 8, 2008.	73 FR 46204

Federal Register notice - Environmental Review for Renewal of Operating Licenses (p Proposed r Rule), September 17, 1991.	56 FR 47016
Federal Register notice - Environmental Review for Renewal of Nuclear Power Plant Operating Licenses (f Final r Rule), June 5, 1996.	61 FR 28467
IAEA (International Atomic Energy Agency). 2005. Radioactive Waste Management Studies Status and Trends. IAEA/WMDB/ST/4, Vienna, Austria.	http://www-pub.iaea.org/MTCD/publications/PDF/WMDB-ST-4.pdf
Makhijani, Arjun, Comments of the Institute for Energy and Environmental Research on the U.S. Nuclear Regulatory Commission's on the Proposed Waste Confidence Rule Update and Proposed Rule Regarding Environmental Impacts of Temporary Spent Fuel Storage.	ML091310195
NRC-National Academies of Science Report, "A Study of the Isolation System for Geologic Disposal of Radioactive Wastes," 1983.	ML033040264
NUREG-0116, "Environmental Survey of the Reprocessing and Waste Management Portions of the LWR Fuel Cycle," October 1976.	ML14098A013
NUREG-1437, "Generic Environmental Impact Statement for License Renewal of Nuclear Plants," June 20, 2013	ML13107A023
NUREG-1949, "Safety Evaluation Report Related to Disposal of High-Level Radioactive Wastes in a Geologic Repository at Yucca Mountain, Nevada," various dates.	ML102440298 (vol. 1) ML15022A146 (vol. 2) ML14288A121 (vol. 3) ML14346A071 (vol. 4) ML15022A488 (vol. 5)
NUREG-2161, "Consequence Study of a Beyond-Design-Basis Earthquake Affecting the Spent Fuel Pool for a U.S. Mark I Boiling - Water Reactor," October 9, 2013	ML13256A334
NUREG-2157, "Generic Environmental Impact Statement for Continued Storage of Spent Nuclear Fuel," September 2014.	ML14196A105 (vol. 1) ML14196A107 (vol. 2)
PRM-51-30, "Petition for Rulemaking to Revise and Integrate All Safety and Environmental Regulations Related to Spent Fuel Storage and Disposal," S Submitted by Diane Curran on behalf of 34 e Environmental o rganizations," January 728 , 2014.	ML14029A124

PRM-51-31, " <u>Environmental Organizations'</u> Petition for Rulemaking to Consider New <u>and</u> Significant Information Regarding Environmental Impacts of High-Density Spent Fuel Storage <u>and</u> Mitigation Alternatives in Licensing Proceedings for New Reactors <u>and</u> License Renewal Proceedings for Existing Reactors <u>and Duly Modify All NRC Regulations Regarding Environmental Impacts of Spent Fuel Storage During Reactor Operation,</u> " March-February 12 18, 2014.	ML14071A382
PRM-51-31, " <u>Environmental Organizations'</u> Amended Petition to Consider New <u>and</u> Significant Information Regarding Environmental Impacts of High-Density Spent Fuel Storage <u>and</u> Mitigation Alternatives in Licensing Proceedings for New Reactors <u>and</u> License Renewal Proceedings for Existing Reactors <u>and Duly Modify All NRC Regulations Regarding Environmental Impacts of Spent Fuel Storage During Reactor Operation,</u> " June 26, 2014.	ML14177A660
<u>Safety Goals for the Operations of Nuclear Power Plants; Policy Statement; Republication</u> Safety Goal Policy Statement of 1986, August 21, 1986.	51 FR 30028
SRM-SECY-14-0072, "Continued Storage of Spent Nuclear Fuel," August 26, 2014.	ML14238A219
WASH-1248, "Environmental Survey of the Uranium Fuel Cycle," April 1974.	ML14092A628

Dated at Rockville, Maryland, this day of , 2015.

For the Nuclear Regulatory Commission.

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

PRM-51-30, "Petition for Rulemaking to Revise and Integrate All Safety and Environmental Regulations Related to Spent Fuel Storage and Disposal, Submitted by Diane Curran on behalf of 34 Environmental Organizations," January 28, 2014.	ML14029A124
PRM-51-31, "Petition for Rulemaking to Consider New & Significant Information Re Environmental Impacts of High-Density Spent Fuel Storage & Mitigation Alternatives in Licensing Proceedings for New Reactors & License Renewal Proceedings of Existing Reactors, March 12, 2014.	ML14071A382
PRM-51-31, "Amended Petition to Consider New & Significant Information Re Environmental Impacts of High-Density Spent Fuel Storage & Mitigation Alternatives in Licensing Proceedings for New Reactors & License Renewal Proceedings of Existing Reactors, June 26, 2014	ML14177A660
Safety Goal Policy Statement of 1986, August 21, 1986.	51 FR 30028
SRM- SECY-14-0072, Continued Storage of Spent Nuclear Fuel, August 26, 2014.	ML14238A219
WASH-1248, "Environmental Survey of the Uranium Fuel Cycle," April 1974.	ML14092A628

Dated at Rockville, Maryland, this day of , 2015.

For the Nuclear Regulatory Commission.

Annette L. Vietti-Cook,
Secretary of the Commission

ADAMS Accession No.: ML15135A405 (Pkg.); ML15139A182 (FRN)

ADM-012 *via email

OFFICE	NRR/DPR/PRMB/ PM	NRR/DPR/PRMB/ /TL	NRR/DPR/PRMB/ RS	NRR/DPR/PRMB/ BC	NRR/DPR/DD	NRR/DLR/ D*	NRR/JLD/ D*	NMSS/MSTR/ D*
NAME	JTobin	EOesterle	GLappert	TInverso	AMohseni	CMiller	JDavis	JPiccone
DATE	5/20/2015	5/28/2015 w/comments	5/28/2015	5/29/15	7/16/15	7/30/15	7/30/15	7/30/15 w/comments
OFFICE	NRR/DPR/D	NMSS/DSFM/ D*	ADM/DAS/RAD/ BC*	NRO/D	NMSS/ D*	OGC/GCLR/ RFC*	NRR/D	EDO
NAME	LKokajko	MLombard	CBladey	GTracy	CHaney	APessin	WDean	VMcCree
DATE	8/3/15	7/30/15	8/17/15	8/21/15	8/18/15	9/17/15	10/6/15	10/28/15

OFFICIAL RECORD COPY

Diane Curran
Harmon, Curran, Spielberg & Eisenberg, L.L.P.
1726 M Street N.W. Suite 600
Washington, D.C. 20036

Dear Ms. Curran:

I am responding to two Petitions for Rulemaking (PRMs) that you submitted to the U.S. Nuclear Regulatory Commission (NRC) on behalf of 34 environmental organizations (the petitioners). Specifically, this letter responds to the petitioners' December 20, 2013, submittal, which was corrected on January 7, 2014 (Accession No. ML14029A124 in the U.S. Nuclear Regulatory Commissions' Agencywide Documents Access and Management System (ADAMS) Accession No. ML14029A124), and the petitioners' February 18, 2014, submittal, which was supplemented on May 1, 2014 (ADAMS Accession Nos. ML14071A382 and ML14177A660). These two petitions were docketed by the NRC as PRM-51-30 and PRM-51-31, respectively. In these two petitions, the petitioners requested that the NRC amend its regulations in Part 51 of Title 10 of the *Code of Federal Regulations* (10 CFR) that concern the impacts of spent fuel storage and disposal in environmental reviews for nuclear power plant license renewal applications.

PRM-51-30 was filed as part of the petitioners' comments on the NRC's proposed continued storage rule and that rule's associated generic environmental impact statement (GEIS). PRM-51-31 was filed shortly after the public release of the NRC staff's findings in the expedited spent fuel transfer analysis. The NRC published a notice of receipt in the *Federal Register* for PRM-51-30 on April 21, 2014 (79 FR 22055), and for PRM-51-31 on May 1, 2014 (79 FR 24595), and published an additional notice upon receipt of the supplement to PRM-51-31 on July 24, 2014 (79 FR 42989). PRM-51-31, as supplemented, asserted that recent NRC staff studies and a statement by ~~athe~~ former NRC Chairman, constituted "new and significant" information under the National Environmental Policy Act that justified the requests made in PRM-51-31. The NRC did not request public comments on PRM-51-30 or PRM-51-31 because the NRC determined that it had sufficient information for review and because the issues raised in these petitions have already been ~~well-vetted~~ discussed at length in ~~past~~ previous NRC proceedings.

The NRC has determined that PRM-51-30 and PRM-51-31 ~~have provided no~~ did not provide a sufficient basis for the requested regulatory revision ~~to revise the regulations, as requested~~. The NRC is therefore denying ~~the two~~ these petitions. The reasons for the denial are explained in the enclosed notice, which will be published in the *Federal Register*. Upon publication of the enclosed notice, the NRC will close PRM-51-30 and PRM-51-31.

In PRM-51-31, the petitioners also made several non-rulemaking requests; namely, that the NRC should: suspend the effectiveness of Table B-1 of appendix B to subpart A of 10 CFR Part 51; suspend the effectiveness, in new reactor licensing proceedings, of all regulations approving standardized reactor designs and all environmental assessments (EAs) approving Severe

Accident Mitigation Design Alternatives; republish for public comment; the June 2013 License Renewal GEIS, the environmental impacts statements for all new reactors, and the EAs for all new reactor design certifications; and suspend all new reactor licensing and license renewal decisions.

In its decision, CLI-14-07, dated July 17, 2014 (ADAMS Accession No. ML14195A499), the Commission denied the petitioners' request to suspend all new reactor licensing decisions and license renewal decisions. The NRC is now also denying the petitioners' remaining non-rulemaking requests as because the NRC has found no basis to amend the regulations identified in PRM-51-3the petition for rulemaking; and as such, there is no reason to grant the non-rulemaking requests. In addition, as described in the enclosed notice, the NRC has determined that the staff studies and the statements by the a former NRC Cehairman, which were identified by the petitioners in PRM-51-31, as supplemented, do not constitute new and significant information warranting amendments to the NRC's regulations.

You may direct any questions regarding this matter to Jennifer C. Tobin, by calling 301-415-2328, or by e-mailing Jennifer.Tobin@nrc.gov.

Sincerely,

Annette L. Vietti-Cook
Secretary of the Commission

Enclosure:
Federal Register notice

D. Curran

- 2 -

environmental impacts statements for all new reactors, and the EAs for all new reactor design certifications; and suspend all new reactor licensing and license renewal decisions.

In its decision CLI-14-07, dated July 17, 2014 (ADAMS Accession No. ML14195A499), the Commission denied the petitioners' request to suspend all new reactor licensing decisions and license renewal decisions. The NRC is denying the remaining non-rulemaking requests as the NRC has found no basis to amend the regulations identified in PRM-51-3; and as such, there is no reason to grant the non-rulemaking requests. In addition, as described in the enclosed notice, the NRC has determined that the staff studies and the statements by the former NRC chairman, which were identified by the petitioners in PRM-51-31, as supplemented, do not constitute new and significant information.

You may direct any questions regarding this matter to Jennifer C. Tobin, by calling 301-415-2328, or by e-mailing Jennifer.Tobin@nrc.gov.

Sincerely,

Annette L. Vietti-Cook
Secretary of the Commission

Enclosure:
Federal Register notice

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ADAMS Accession No: ML15135A405 (Pkg.); ML15139A194 (Letter); ML15139A182 (FRN) *via e-mail

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NAME	JTobin	EOesterle	GLappert	TInverso	AMohseni	LKokajko
DATE	5/20/2015	5/28/15	5/28/15	7/14/15	7/10/15	7/22/15
OFFICE	ADM/DAS/RADB/BC*	OGC*	NRR/D	EDO	SECY	
NAME	CBladey	APessin	WDean	VMcCree	AVietti-Cook	
DATE	8/17/15	9/17/15	10/06/15	10/ /15		

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NOTATION VOTE

RESPONSE SHEET

TO: Annette Vietti-Cook, Secretary

FROM: COMMISSIONER SVINICKI

SUBJECT: SECY-15-0136: DENIAL OF PETITIONS FOR RULEMAKING REQUESTING TO RESCIND REGULATIONS THAT MAKE GENERIC DETERMINATIONS REGARDING THE ENVIRONMENTAL IMPACTS OF SPENT FUEL STORAGE AND DISPOSAL WHEN CONSIDERING NUCLEAR POWER REACTOR LICENSE APPLICATIONS (PRM-51-30 AND PRM-51-31; NRC-2014-0014 AND NRC-2014-0055)

Approved XX Disapproved _____ Abstain _____ Not Participating _____

COMMENTS: Below XX Attached XX None _____

I approve the denial of the petitions for rulemaking and publication of the draft *Federal Register* notice, as edited in the attached.


SIGNATURE

02/16 /16
DATE

Entered on "STARS" Yes ☒ No _____

NUCLEAR REGULATORY COMMISSION

10 CFR Part 51

[Docket Nos. PRM-51-30 and PRM-51-31; NRC-2014-0014 and NRC-2014-0055]

Generic Determinations Regarding the Environmental Impacts of Spent Fuel Storage and Disposal when Considering Nuclear Power Reactor License Applications

AGENCY: Nuclear Regulatory Commission.

ACTION: Petitions for rulemaking; denial.

SUMMARY: The U.S. Nuclear Regulatory Commission (NRC) is denying two petitions for rulemaking (PRMs), PRM-51-30 and PRM-51-31, submitted by Diane Curran on behalf of 34 environmental organizations (the petitioners). The petitioners request that the NRC revise certain regulations that concern the environmental impacts of spent fuel storage and disposal ~~in environmental reviews~~ for nuclear power plants ~~license renewal applications~~. The NRC is denying the petitions because they provide an insufficient basis to consider a rulemaking to revise such regulations.

DATES: The dockets for the petitions for rulemaking, PRM-51-30 and PRM-51-31, are closed on **[INSERT DATE OF PUBLICATION IN THE *FEDERAL REGISTER*]**.

ADDRESSES: Please refer to Docket IDs s NRC-2014-0014 and NRC-2014-0055, ~~respectively~~, when contacting the NRC about the availability of information regarding these petitions. You

can access publicly-available documents related to the petition using any of the following methods:

- **Federal Rulemaking Web Site:** Go to <http://www.regulations.gov> and search ~~on the~~ ~~petitionfor~~ Docket IDs NRC-2014-0014 and NRC-2014-0055. Address questions about NRC dockets to Carol Gallagher; telephone: 301-415-3463; e-mail: Carol.Gallagher@nrc.gov. For technical questions, contact the individual listed in the FOR FURTHER INFORMATION CONTACT section of this document.

- **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, ~~or~~ 301-415-4737, or by e-mail to pdr.resource@nrc.gov. The ADAMS accession number for each document referenced (if it is available in ADAMS) is provided the first time that it is mentioned in the SUPPLEMENTARY INFORMATION section. For the convenience of the reader, instructions about obtaining materials referenced in this document are provided in the Section ~~I~~IV, Availability of Documents.

- **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: Jenny C. Tobin, Office of Nuclear Reactor Regulation, telephone: 301-415-2328, e-mail: Jennifer.Tobin@nrc.gov; U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001.

SUPPLEMENTARY INFORMATION:

TABLE OF CONTENTS:

- I. The Petitions.
- II. Reasons for Denial.
- III. Determination of Petitions.
- IV. Availability of Documents.

I. The Petitions.

Section 2.802 of Title 10 of the *Code of Federal Regulations* (10 CFR), "Petition for rulemaking," provides an opportunity for any interested person to petition the Commission to issue, amend, or rescind any regulation. The NRC has consolidated its response to PRM-51-30 and PRM-51-31 because both petitions make similar rulemaking requests. The NRC did not request public comment on PRM-51-30 and PRM-51-31 because there was sufficient information for review and ~~the~~these issues raised in the petitions have been well-vetted in past NRC proceedings.

PRM-51-30

The petitioners filed the first of their two petitions on December 20, 2013, as a part of their comments on the NRC's proposed Continued Storage Rule (formerly known as the Waste Confidence Decision and Rule) and that rule's associated generic environmental impact

statement (Continued Storage Generic Environmental Impact Statement (GEIS)).¹ The petitioners filed a corrected version of the first petition on January 7, 2014. The NRC published a notice of receipt of the first petition in the *Federal Register* (FR) on April 21, 2014, and assigned it Docket No. PRM-51-30 (79 FR 22055).

The petition requests that the NRC revise certain regulations in 10 CFR part 51 that concern the environmental impacts of spent fuel storage and disposal ~~in environmental reviews~~ for nuclear power plants ~~license renewal applications~~. The NRC implements its responsibilities under the National Environmental Policy Act of 1969 (NEPA) through its 10 CFR part 51 regulations. The petitioners assert that the NRC's 10 CFR part 51 regulations are "balkanized" and "disparate and inconsistent," and that these regulations should be made into a "cohesive and consistent whole." The petitioners identified the following NRC regulations as being within the scope of their request: 10 CFR 51.53(c),² 10 CFR 51.51 (Table S-3),³ 10 CFR 51.71(d),⁴ and Table B-1, "Summary of Findings on NEPA Issues for License Renewal of Nuclear Power Plants,"⁵ in appendix B to subpart A of 10 CFR part 51 (Table B-1), as well as the NRC's

¹ The Continued Storage GEIS is formally designated as NUREG-2157, "Generic Environmental Impact Statement for Continued Storage of Spent Nuclear Fuel." "Waste Confidence" has been the NRC's generic determination regarding the technical feasibility and environmental impacts of safely storing spent fuel beyond the licensed life for operations of a nuclear power plant (NUREG-2157, Vol. 1, Section ES. 1). The NRC published the Continued Storage Rule as a proposed rule on September 13, 2013 (78 FR 56776), and as a final rule on September 19, 2014 (79 FR 56238). As part of the final rule, all of the public comments on the proposed rule were addressed in NUREG-2157.

² Section 51.53 is entitled "Post-construction environmental reports." Paragraph (c) describes the contents of the required environmental report submitted by an applicant in support of its application to renew a nuclear power plant's operating license.

³ Table S-3 is entitled "Table of Uranium Fuel Cycle Environmental Data" and is set forth at 10 CFR 51.51. Table S-3 shows the maximum environmental effect per annual fuel requirement for an operating reactor and is the basis for evaluating the contribution of the environmental effects of uranium mining and milling, the production of uranium hexafluoride, isotopic enrichment, fuel fabrication, reprocessing of irradiated fuel, transportation of radioactive materials and management of low-level wastes and high-level wastes related to uranium fuel cycle activities to the environmental costs of licensing the nuclear power reactor.

⁴ Section 51.71 is entitled "Draft environmental impact statement—contents." Paragraph (d) describes the analysis required to be included in ~~the~~ draft environmental impact statements (EIS). For license renewal actions, the supplemental draft EIS relies on the findings and other supporting information in NUREG-1437, Revision 1, "Generic Environmental Impact Statement for License Renewal of Nuclear Plants—Final Report" (2013).

⁵ ~~Table B-1 is entitled "Summary of Findings on NEPA Issues for License Renewal of Nuclear Power Plants."~~

proposed amendments to 10 CFR 51.23, as set forth in its September 13, 2013, proposed rule (~~77-78~~ FR 56776).⁶ Except for 10 CFR 51.23 and Table S-3, these regulations concern the environmental review undertaken by the NRC staff when considering an application for the renewal of a nuclear power plant's operating license.

Sections 51.53(c) and 51.71(d) are premised upon NUREG-1437, "Generic Environmental Impact Statement for License Renewal of Nuclear Plants," an environmental impact statement (EIS) initially published in May 1996 and then revised and updated in June 2013 (License Renewal GEIS).⁷ The License Renewal GEIS describes the potential environmental impacts of renewing the operating license of a nuclear power plant for an additional 20 years. The NRC classifies the license renewal issues described in the License Renewal GEIS as either generic or site-specific. Generic issues concern environmental impacts that are common to all nuclear power plants. Site-specific issues are addressed initially by the license renewal applicant (i.e., a nuclear power plant licensee seeking a renewal of its operating license under the NRC's license renewal regulations in 10 CFR part 54) in its environmental report, which is required by 10 CFR 51.45, and then by the NRC, in its supplemental environmental impact statement (SEIS) to the License Renewal GEIS prepared for each license renewal application.⁸ For any given license renewal action, the License Renewal GEIS together

⁶ The proposed amendments to 10 CFR 51.23 were adopted in a final rulemaking (79 FR 56238; September 19, 2014). Section 51.23 is entitled "Environmental impacts of continued storage of spent nuclear fuel beyond the licensed life for operation of a reactor" and states 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 Continued Storage GEIS]" (10 CFR 51.23(a)).

⁷ The current version of the License Renewal GEIS is NUREG-1437, Revision 1.

⁸ ~~Section 10 CFR 51.95(c) requires, for the consideration of potential environmental impacts of renewing a nuclear power plant's operating license, that the NRC prepare an environmental impact statement that is a supplement to the Commission's NUREG-1437, Rev. 1, "Generic Environmental Impact Statement for License Renewal of Nuclear Plants" (June 2013).~~

with the site-specific SEIS (along with any other applicable generic EISs) documents the NRC's NEPA analysis.

In Table B-1, generic issues are designated as "Category 1" issues and site-specific issues are designated as "Category 2" issues. Absent new and significant information, Category 1 issues are not required to be re-analyzed for an applicant's environmental report or the staff's SEIS. Table B-1 codifies the findings of the License Renewal GEIS and is wholly concerned with nuclear power plant license renewal.⁹

The purpose of Table S-3 is to support the environmental review for new reactor license applications. In addition to considering the environmental impacts of the construction and operation of a commercial nuclear power reactor, the NRC considers the contributions from the uranium fuel cycle activities.¹⁰ Table S-3 identifies the uranium fuel cycle impacts, generically, for new reactor license applications.

The petitioners also assert that the NRC's proposed amendments to 10 CFR 51.23, as set forth in the NRC's proposed rule of September 13, 2013 (77 FR 56776), are "confusing" to the extent that the proposed regulation included safety findings, which should be placed in either 10 CFR parts 50 or 52, and because the proposed regulation no longer includes the "reasonable assurance" finding. The petitioners also assert that Table S-3 has been "repudiated" and that it is inconsistent with the findings in Table B-1. In addition, the petitioners assert that Table B-1 does not include a finding as to whether offsite spent fuel disposal impacts are significant or not.

⁹ Table B-1 was amended to reflect the June 2013 License Renewal GEIS update. The NRC rule amending Table B-1 and other 10 CFR part 51 regulations was published in the FR Federal Register on June 20, 2013 (78 FR 37282).

¹⁰ Uranium fuel cycle activities include "uranium mining and milling, the production of uranium hexafluoride, isotopic enrichment, fuel fabrication, spent fuel storage and disposal" (44 FR 45362; August 2, 1979).

The petitioners further assert that 10 CFR 51.53(c) and 51.71(d) “excuse” license renewal applicants and the NRC, respectively, from addressing spent fuel storage impacts in individual license renewal cases. As both regulatory provisions are premised upon the findings in the License Renewal GEIS, the petitioners, essentially, object to the finding that impacts of spent fuel storage during the license renewal period are a Category 1, or generic, issue, and have a “small” impact. Finally, the petitioners assert that the economic costs of spent fuel storage and disposal should be incorporated into reactor cost-benefit analyses and that the need for power should be considered in license renewal decisions.

PRM-51-31

The petitioners filed their second petition on February 18, 2014. The petitioners’ second petition asserts that COMSECY-13-0030, “Staff Evaluation and Recommendation for Japan Lessons-Learned Tier 3 Issue on Expedited Transfer of Spent Fuel”¹¹ (the expedited spent fuel transfer analysis), and NUREG-2161, “Consequence Study of a Beyond-Design-Basis Earthquake Affecting the Spent Fuel Pool for a U.S. Mark I Boiling-Water Reactor,”¹² constitute new and significant information. The petitioners further request that the NRC “duly modify NRC’s regulations that make or rely on findings regarding the environmental impacts of spent fuel storage during reactor operation, including Table B-1 and all regulations approving standardized reactor designs.”

The NRC published a notice of receipt of the second petition in the *FR-Federal Register* on May 1, 2014, and assigned it Docket No. PRM-51-31 (79 FR 24595). The petitioners

¹¹ COMSECY-13-0030, “Memorandum from Mark Satorius, Executive Director for Operations, to NRC Commissioners Re: Staff Evaluation and Recommendations for Lessons Learned Tier 3 Issue on Expected Transfer of Spent Fuel” (Nov. 12, 2013), and documents cited therein.

¹² NUREG-2161, “Consequence Study of a Beyond-Design-Basis Earthquake Affecting the Spent Fuel Pool for a U.S. Mark I Boiling-Water Reactor.” (Sep. 2014).

subsequently submitted an “amended petition” for rulemaking on June 26, 2014, seeking to add “the observations made by [former] Chairman Macfarlane in her dissenting comments” on the expedited transfer of spent fuel analysis. The petitioners assert that the former Chairman’s dissenting vote on the expedited spent fuel transfer ~~proceeding~~ analysis provides “new and significant” information that would affect the NRC’s environmental reviews in license renewal. The NRC treated the “amended petition” as a supplement to the February 18, 2014, petition and re-noticed the petition, along with the supplement, for informational purposes only (79 FR 42989; July 24, 2014).

II. Reasons for Denial.

The NRC is denying the petitions because the petitioners have not presented a sufficient basis to amend the regulations. The petitioners largely contend that they present new and significant information that requires the agency to revisit previous NEPA analyses that form the basis for the challenged regulations. Under Commission precedent, information that provides a “ ‘seriously different picture’ ” of the environmental consequences than previously considered is new and significant information.¹³ As explained below, the NRC does not find that the petitioners’ information provides a “seriously different picture” of the environmental consequences of spent fuel storage. As a result, ~~the NRC determined~~ concludes that the current technical basis for those regulations challenged by the petitioners remain sound.

The petitioners assert that the NRC’s environmental review regulations are “balkanized”

¹³ Hydro Res. Inc., CLI-99-22, 50 NRC 3, 14 (1999) (quoting *Sierra Club v. Froehike*, 816 F.2d 205, 210 (5th Cir. 1987)); see generally *Marsh v. Oregon Natural Resources Council*, 490 U.S. 360 (1989).

The petitioners assert that “[t]he NRC’s piecemeal and disjointed approach to the consideration of spent fuel storage and disposal impacts violates the NEPA principle that an agency may not segment its analysis in a manner that conceals the environmental significance of its action.” Segmentation refers to instances where a Federal agency splits a project into smaller components to avoid preparing an EIS, or where an agency does not consider related actions in a single EIS.¹⁴ The NRC does not agree that its approach to the consideration of spent fuel storage and disposal impacts is piecemeal and disjointed or that NRC’s environmental review regulations in 10 CFR part 51 are “balkanized” or result in NEPA segmentation.

While the petitioners have pointed to some instances where the agency relies on generic analyses as part of its overall NEPA review for certain licensing actions, the petitioners have not shown any case where the NRC artificially divided a licensing action into smaller components. Rather, as discussed below, the NRC fully considers the environmental impacts of each licensing action through a combination of site-specific EISs and, where appropriate, generic EISs. ~~Although addressed in two generic EISs prepared by the NRC (i.e., the License Renewal GEIS and the Continued Storage GEIS), spent fuel storage and disposal impacts are reassessed by the NRC staff during each new reactor and license renewal environmental review to determine if there is new and significant information that could alter the generic conclusions.~~ The use of generic analyses by the NRC to support licensing decisions has been upheld by the United States Supreme Court.¹⁵

¹⁴ *Delaware Riverkeeper Network v. FERC*, 753 F.3d 1304, 1313 (D.C. Cir. 2014) (“An agency impermissibly ‘segments’ NEPA review when it divides connected, cumulative, or similar federal actions into separate projects and thereby fails to address the true scope and impact of the activities that should be under consideration); see Council on Environmental Quality (CEQ) regulation, 10 CFR 1508.25.

¹⁵ In a 1983 decision concerning a challenge to Table S-3, the Supreme Court stated that “[t]he generic method chosen by the agency is clearly an appropriate method of conducting the hard look required by NEPA.” *Baltimore Gas v. NRDC*, 462 U.S. 87, 101, 103 S.Ct. 2246, 2254 (1983).

In addition to the License Renewal GEIS and the Continued Storage GEIS, the NRC prepares EISs for all new reactor and license renewal applications. Within the umbrella of both its generic and site-specific EISs, the NRC adequately considers the spent fuel storage impacts of its licensing decisions. The EISs for new nuclear power reactors describe the environmental impacts from the onsite storage and management of spent nuclear fuel and offsite disposal based on 40 years of reactor operation, which is the maximum¹⁶ initial term of a reactor license. The License Renewal GEIS describes the environmental impacts from the onsite storage and offsite disposal of spent nuclear fuel generated during an additional 20 years of reactor operation (i.e., 20 years beyond the expiration of the initial license).¹⁷ The Continued Storage GEIS describes the environmental impacts of the continued storage of spent nuclear fuel beyond the licensed life for operation of a reactor. Although addressed in two generic EISs prepared by the NRC (i.e., the License Renewal GEIS and the Continued Storage GEIS) Additionally, spent fuel storage and disposal impacts are reassessed by the NRC staff during each new reactor and license renewal environmental review to determine if there is new and significant information that could alter the generic conclusions.

Moreover, the underlying technical bases for the consideration of spent fuel storage and disposal impacts in EISs for new nuclear power reactor licenses and the License Renewal GEIS are the same. Combined with the Continued Storage GEIS, these NEPA documents provide a complete analysis of spent fuel storage and disposal impacts. The regulations in 10 CFR part 51 are both premised upon, and support, this NEPA framework of generic EISs supported by site-specific EISs.

¹⁶ 10 CFR 52.104.

¹⁷ 10 CFR 54.31.

The NRC's approach improves the effectiveness of environmental reviews by generically resolving issues that are not substantially different from one proceeding to another, while still ensuring that those impacts are considered in subsequent licensing actions. The NRC conducts environmental and safety reviews for the issuance of licenses for the operation of nuclear power plants including the onsite storage of spent nuclear fuel. The NRC has also conducted separate environmental and safety reviews for the issuance of specific licenses for the storage of spent nuclear fuel in independent spent fuel storage installations (ISFSIs).¹⁸ With respect to spent fuel disposal, ~~the U.S. Department of Energy (DOE) is responsible for developing~~ an EIS would fully discuss the environmental impacts for spent fuel disposal in a geologic repository at the time of licensing. In addition, the NRC has previously determined the potential radiological effects of offsite spent fuel disposal in a permanent repository or some other permanent disposal scenario while evaluating the environmental effects of the uranium fuel cycle.¹⁹

The consideration of spent fuel storage and disposal environmental impacts builds upon the knowledge gained by the NRC from previous environmental reviews and associated rulemakings and is consistent throughout the NRC's regulations in that the NRC relies on the same technical bases to make impact determinations. The only differences are in the timeframes in which these impacts occur and whether the impacts occur during continued onsite storage or offsite disposal. In each of these regulatory situations, the technical bases remain the same.

Tables S-3 and B-1 in the NRC's regulations were developed at separate times for different purposes but have common technical bases. The 2014 continued storage rule, and its

¹⁸ NRC regulation, 10 CFR 72.3, defines an ISFSI as "a complex designed and constructed for the interim storage of spent nuclear fuel."

¹⁹ See WASH-1248, "Environmental Survey of the Uranium Fuel Cycle," April 1974, and NUREG-0116, "Environmental Survey of the Reprocessing and Waste Management Portions of the LWR Fuel Cycle," October 1976.

supporting Continued Storage GEIS, updated the NRC's NEPA findings in Table B-1 for the issues, "Onsite storage of spent nuclear fuel" and "Offsite radiological impacts of spent nuclear fuel and high-level waste disposal." In doing so, the NRC effectively incorporated the NEPA analysis of continued spent fuel storage into ~~the new reactor, license renewal, and ISFSI impact analyses.~~ For new reactors, 10 CFR 51.23(b) directs that the impact determinations in NUREG-2157 shall be deemed incorporated into the associated EIS. And for licensing actions for which an environmental assessment (EA) is being prepared (such as an ISFSI built under a specific license at a site occupied by a nuclear power reactor), 10 CFR 51.30(b) directs that the impacts determinations in NUREG-2157 regarding the continued storage of spent fuel shall be considered, if such impacts are relevant to the proposed action.

For a given future reactor licensing action that relies on the Continued Storage GEIS and rule, the NRC will incorporate the environmental impacts analyzed in the Continued Storage GEIS into the overall licensing decision. The NRC's NEPA review for each licensing action that involves either a new reactor or a license renewal application will fully account for the reasonably foreseeable impacts of spent fuel storage and disposal, including, where applicable, the impacts that have been analyzed generically in the Continued Storage GEIS and License Renewal GEIS.

The NRC concludes that ~~the petitioners' argument that the NRC's 10 CFR Part 51 environmental review regulations are not~~ "balkanized," and are inconsistent ~~does not provide a seriously different picture of the environmental consequences of spent fuel storage and disposal.~~ Instead, based on the above, the NRC concludes that ~~Thus,~~ there is no technical or regulatory reason to amend these regulations.

The petitioners assert that Table S-3 has been repudiated

The petitioners' expert, Dr. Arjun Makhijani, in a declaration attached to the petitioners' January 2014 submission, states that the Table S-3 finding regarding the impacts of spent fuel disposal is no longer valid because the finding is based upon the disposal of spent fuel in a bedded salt repository and that such disposal would result in zero releases of radioactive effluents, and therefore, zero radiological dose. Dr. Makhijani asserts that

[m]oreover, we note that Table S-3 at 10 CFR 51.51 is invalid for estimating high-level waste disposal impacts. Among other things, its underlying assumption of disposal in a bedded salt repository for spent fuel disposal was repudiated by the NRC itself in 2008. Therefore, the NRC must prepare a new disposal impact analysis in the context of its waste confidence decision.²⁰

The petitioners, through Dr. Makhijani's declaration, assert that the NRC must prepare a new analysis concerning the impacts of spent fuel disposal.

Dr. Makhijani's statement evaluates Table S-3 in isolation and does not consider later developments in the NRC's regulatory policy and Supreme Court precedent. The Atomic Energy Commission, the predecessor agency of the NRC, promulgated the initial version of Table S-3 on April 22, 1974 (39 FR 14188). Since the promulgation of Table S-3, the Nuclear Waste Policy Act of 1982 (NWSA) adopted deep geologic disposal as the nation's solution for spent fuel disposal. ~~In addition~~ Nonetheless, in 1983 the United States Supreme Court, in its *Baltimore Gas & Elec. Co. v. NRDC* decision,²¹ upheld both Table S-3 and the approach taken by the NRC in using Table S-3 data in individual licensing proceedings. In *Baltimore Gas*, the Supreme Court recognized that the purpose of Table S-3 was "not to evaluate or select the most effective long-term waste disposal technology or develop site selection criteria ~~but "to~~

²⁰ "Declaration of Dr. Arjun Makhijani Regarding the Waste Confidence Proposed Rule and Draft Generic Environmental Impact Statement," attached to PRM-51-30 (paragraph 2.8 on p. 6).

²¹ *Baltimore Gas & Elec. Co. v. NRDC*, 462 U.S. 87, 103 S.Ct. 2246 (1983).

~~analyze intensively the most probable long-term waste disposal method.~~²² In this regard, the Court noted that the NRC's intent, as stated in the 1979 rule revising Table S-3 (44 FR 45362; August 2, 1979), was to estimate the impact of the long-term waste disposal method conservatively.²³ This conservative analysis included the NRC's use of the zero release assumption.²⁴ The Court also noted that other aspects of Table S-3 were premised upon the assumption that "all volatile materials in the fuel would escape to the environment" prior to the sealing of the geologic repository; this assumption balanced the zero-release assumption, an approach that the Court found acceptable.²⁵ In addition to concluding that it was "not unreasonable" for the NRC to employ the zero release assumption, the Court stated that "the zero-release assumption is but a single figure in an entire Table, which the Commission expressly designed as a risk-averse estimate of the environmental impact of the fuel cycle ... [a] reviewing court should not magnify a single line item beyond its significance as only part of a larger Table."²⁶

Following the enactment of the NWPA and the *Baltimore Gas* decision, the NRC issued a ~~Wwaste~~ ~~eC~~onfidence decision in 1984 (49 FR 34658; August 31, 1984), and subsequently updated this decision in 1990 (55 FR 38472; September 18, 1990) and again in 2010 (75 FR 81032; December 23, 2010). In its 1990 revision, the Commission discussed the relationship of Table S-3 with its Waste Confidence decision. Specifically, the Commission noted that the promulgation of Table S-3 was the outgrowth of efforts to generically evaluate the environmental impacts of the operation of a light water reactor and in so doing, that Table S-3 assigned

²² *Id.*, 462 U.S. at 102, 103 S.Ct. at 2254-55.

²³ *Id.*, 462 U.S. at 102, 103 S.Ct. at 2255.

²⁴ *Id.* ("The zero-release assumption cannot be evaluated in isolation. Rather, it must be assessed in relation to the limited purpose for which the Commission made the assumption").

²⁵ *Id.*, 462 U.S. at 103, 103 S.Ct. at 2255.

²⁶ *Id.*, 462 U.S. at 102-03, 103 S.Ct. at 2255.

numerical values for environmental costs resulting from uranium fuel cycle activities to support one year of light water reactor operation. The number of curies indicated for spent fuel disposal in Table S-3 reflects the total volume of waste material, not the amount of radioactivity projected to be released from the repository—an issue that is to be addressed in the safety and environmental review for the actual geologic repository itself.

~~Dr. Makhijani's statements regarding the validity of disposal in a bedded salt repository for spent fuel were similar to comments he provided on the NRC's 2010 waste confidence decision update. In response to Dr. Makhijani's comments, the NRC explained that, in considering the disposal of spent nuclear fuel in a geologic repository, its concern was not whether a zero-release assumption will be met, but rather that appropriate public health and safety standards are established and met during the construction and operation of a repository. Such standards would ensure that any releases of radioactive material to the environment are not inimical to public health and safety.²⁷~~

Table S-3 lists environmental data to be used by applicants and the NRC staff for new reactor license applications under 10 CFR parts 50 and 52. Specifically, Table S-3 is the basis for evaluating the environmental effects of the portions of the uranium fuel cycle for light water reactors that occur before new fuel is delivered to the plant and after spent fuel is removed from the plant site. The NRC has made generic determinations that the radiological impacts of the uranium fuel cycle on individuals off-site will remain at or below the Commission's regulatory limits (e.g., the public dose limits set forth in 10 CFR part 20). The NRC described this generic determination and conclusion in the License Renewal GEIS.²⁸ Additionally, as part of the new reactor EISs under 10 CFR part 52 and the License Renewal GEIS, the NRC concluded that the

²⁷ ~~Continued Storage GEIS section D.2.49.2, p. D-517.~~

²⁸ 2013 GEIS section 4.12.1.1, p. 4-185

assumptions and methodology used in preparing Table S-3 were conservative enough that the impacts described by the use of Table S-3 would still be bounding. In these EISs, the staff discussed why the contemporary fuel cycle impacts are below those identified in Table S-3 and as such, Table S-3 remains bounding.²⁹

The NRC concludes that Table S-3 is conservative because Furthermore, as reflected in section 4.12.1.1 of the License Renewal GEIS, industry practice has shown that the current fleet of reactors uses nuclear fuel more efficiently due to higher fuel burnup. Therefore, less uranium fuel per year of reactor operation is required than in the past to generate the same amount of electricity. Fewer spent fuel assemblies per reactor-year are generated, hence, the waste storage and deep geologic repository impacts are lessened. ~~The NRC is not aware of~~ The petitioners have not provided any new information that would cause ~~it~~ the NRC to revisit these conclusions regarding Table S-3. ~~Finally, the NRC has provided ample opportunity for public comment on all new reactor EISs as well as the 2013 revision to the License Renewal GEIS (NUREG-1437, Revision 1) and its related amendments to 10 CFR part 51.~~

~~The issue of concern to the NRC in considering the disposal of spent nuclear fuel in a geologic repository has not been whether a zero release assumption will be met or ultimately the type of environmental media (e.g., bedded salt, basalt, granite, etc.) selected for the repository but rather that the appropriate standards are established and met, thereby ensuring that any releases of radioactive materials to the environment would not be inimical to public health and safety. The Commission has previously made clear in other proceedings that "[a]lthough a repository has not yet been constructed and its safety and environmental~~

²⁹ For example, see the Bell Bend Nuclear Power Plant EIS, NUREG 2179 vol. 1, section 6.1, for a discussion of the NRC determination that Table S-3 remains bounding published in April 2015.

~~acceptability demonstrated, no fundamental breakthrough in science or technology is needed to implement a successful waste disposal program.”³⁰ This focus on whether a fundamental breakthrough in science or technology is needed has guided the Commission’s consideration of the feasibility of the disposal of high level waste and spent nuclear fuel.~~

While the NRC and U.S. Department of Energy have, in the past, concentrated efforts regarding geologic repository research and licensing efforts on a non-bedded salt repository, characterizing the resulting analysis as confirming that there is a risk of “significant” radiation releases and radiation doses from deep geologic disposal is also not valid. The Commission has previously made clear in other proceedings that “[a]lthough a repository has not yet been constructed and its safety and environmental acceptability demonstrated, no fundamental breakthrough in science or technology is needed to implement a successful waste disposal program.”³¹ This focus on whether a fundamental breakthrough in science or technology is needed has guided the Commission’s consideration of the feasibility of the disposal of high level waste and spent nuclear fuel. As stated in Volume 1, Appendix B of the Continued Storage GEIS, “the consensus within the scientific and technical community engaged in nuclear waste management is that safe geologic disposal is achievable with currently available technology... 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.”³²

³⁰ 2010 Waste Confidence Decision Update, 75 FR 81037, 81046 (December 23, 2010) quoting the 1984 Waste Confidence Decision, 49 FR 34658, 34667 (August 31, 1984).

³¹ 2010 Waste Confidence Decision Update, 75 FR 81037, 81046 (December 23, 2010) quoting the 1984 Waste Confidence Decision, 49 FR 34658, 34667 (August 31, 1984).

³² NUREG-2157, pg. 2 of Appendix B, section B.2.1.

The issue of concern to the NRC in considering the disposal of spent nuclear fuel in a geologic repository has not been whether a zero-release assumption will be met or ultimately the type of environmental media (e.g., bedded salt, basalt, granite, etc.) selected for the repository but rather that the appropriate standards are established and met, thereby ensuring that any releases of radioactive materials to the environment would not be inimical to public health and safety. Radiation dose limits for disposal of radioactive materials are typically no greater than 100 mrem/yr (such as the U.S. Environmental Protection Agency (EPA) limits for the proposed Yucca Mountain geologic repository). Although a geologic repository meeting such radiation dose limits is not a "zero" release facility, compliance with these dose limits would provide adequate protection of public health and safety. Given the substantial effort developing repositories, it is reasonable to assume that geologic disposal facilities can be developed within a variety of geologic formations and types that would be protective of public health and safety. For example, the NRC-National Academy of Sciences (NAS) study, referred to by Dr. Makhijani, concludes on the overall performance of candidate repositories that "[a]ll radionuclides in unprocessed spent fuel can be adequately contained."³³ ~~Therefore, under NEPA considerations, this is clearly not a risk for significant radiation releases and radiation doses~~ These findings are further supported by as demonstrated by the NRC's recently ~~completion~~ ed of NUREG-1949, "Safety Evaluation Report Related to Disposal of High-Level Radioactive Wastes in a Geologic Repository at Yucca Mountain, Nevada." In conclusion, the NRC has determined that Table S-3 is still bounding and that the petitioners have not provided new and significant information that requires the NRC to amend Table S-3 ~~there is little, if any,~~

³³ NRC-National Academies of Science Report, "A Study of the Isolation System for Geologic Disposal of Radioactive Wastes," p. 8 and 11.

~~technical or regulatory benefit to updating it, as the purpose of Table S-3 is to inform the preparation of licensee environmental reports submitted with new reactor applications.~~

The petitioners assert that Table S-3 and Table B-1 are inconsistent with each other

The petitioners assert that Table S-3 and Table B-1 are inconsistent with each other.

The petitioners state in PRM-51-30, "[t]he inconsistencies and questions raised by comparing Table S-3 and Table B-1 are unacceptable under NEPA's standard for clarity and rigor of scientific analysis." In his comments, Dr. Makhijani stated,

Table S-3 summarizes the NRC's conclusion that the impacts of spent fuel disposal will be zero, based on the assumption that spent fuel will be disposed of in a bedded salt repository. Proposed Table B-1 contradicts Table S-3 by concluding that long-term doses could be as high as 100 millirem per year. But the NRC does not attempt to reconcile proposed Table B-1 and Table S-3; nor does it address the fact that in the 2008 Draft Waste Confidence Update, it repudiated bedded salt as a geologic medium for a repository.³⁴

The environmental effects of operating uranium fuel cycle facilities including radioactive waste disposal at a geologic repository were evaluated in two NRC documents, WASH-1248 and NUREG-0116. The results of ~~thisese~~ evaluations were summarized and promulgated as Table S-3 in 10 CFR 51.51(b). Paragraph (a) in 10 CFR 51.51 states:

[E]very environmental report prepared for the construction permit stage or early site permit stage or combined license stage of a light-water-cooled nuclear power reactor, and submitted on or after September 4, 1979, shall take Table S-3, Table of Uranium Fuel Cycle Environmental Data, as the basis for evaluating the contribution of the environmental effects of uranium mining and milling, the production of uranium hexafluoride, isotopic enrichment, fuel fabrication, reprocessing of irradiated fuel, transportation of radioactive materials and management of low level wastes and high level wastes related to uranium fuel cycle activities to the environmental costs of licensing the nuclear power

³⁴ Makhijani Declaration attached to PRM-51-30, p. 9.

reactor. Table S-3 shall be included in the environmental report and may be supplemented by a discussion of the environmental significance of the data set forth in the table as weighed in the analysis for the proposed facility.

The environmental effects or issues summarized in Table S-3 include: land use; water consumption and thermal effluents; radioactive releases; burial of transuranic, high-level and low-level radioactive wastes; and radiation doses from transportation and occupational exposures. The contributions in Table S-3 for reprocessing, waste management, and transportation of wastes are maximized for either of the two fuel cycles (i.e., a fuel cycle that includes spent fuel reprocessing and one that does not)—the cycle that results in the greater environmental impact, and thus the most conservative analysis, is used. The environmental impact values are expressed in terms normalized to show the potential impacts attributable to processing the fuel required for the operation of a 1,000-MWe nuclear power plant for one year at an 80 percent availability factor to produce about 800 MW-yr (0.8 GW-yr) of electricity. This normalization is referred to as one reference reactor year. For each environmental consideration, Table S-3 presents a result that has been integrated over the entire uranium fuel cycle except during reactor operations.³⁵ The environmental impacts of reactor operations are addressed in the EIS prepared for each individual reactor licensing action (i.e., an EIS for a new reactor licensing application or a SEIS for a license renewal application).

Although certain fuel cycle operations and fuel management practices have changed over the years, the assumptions and methodology used in preparing Table S-3 were, and continue to be, conservative enough that the impacts described in Table S-3 are still bounding.

³⁵ The only exception is that the waste quantities listed under the entry called "solids (buried onsite)" also includes wastes generated at the reactor.

In similar fashion, the NRC assessed the generic environmental impacts of renewing the operating license for a nuclear power plant in the License Renewal GEIS. Table B-1 summarizes the Commission's findings on the scope and magnitude of the environmental effects of renewing the operating license for a nuclear power plant, based on technical bases documented in the 2013 update of the License Renewal GEIS. Subject to an evaluation of those Category 2 issues, which require further site-specific analysis, and the identification of possible new and significant information for any Category 1 or Category 2 issue, Table B-1 represents the analysis of the environmental impacts associated with the renewal of any operating license and is to be used in accordance with 10 CFR 51.95(c). On a 10-year cycle, the Commission intends to review the findings in Table B-1 and update it if necessary. The latest review and update was completed in 2013.

Both the License Renewal GEIS and Table B-1 incorporate Table S-3 by reference.³⁶ Tables S-3 and B-1 were developed at separate times for different purposes.

However, the technical bases for the consideration of spent fuel storage and disposal impacts for both tables are the same, and as such, the tables are consistent with each other. The impact of spent nuclear fuel disposal finding in Table B-1 (i.e., "Offsite radiological impacts of spent nuclear fuel and high-level waste disposal") is consistent with the solid waste disposal information presented in Table S-3, as the findings in Table B-1 could not have been reached without the environmental effects evaluations conducted in WASH-1248 and NUREG-0116, which are summarized in Table S-3.

Moreover, even if there were differences in the assumptions in Table S-3 and Table B-1, those differences are not significant from a NEPA perspective. As noted above, the issue of

³⁶ Table B-1 references Table S-3 under the "Uranium Fuel Cycle" section of the table.

concern to the NRC in considering the impacts of disposal of spent nuclear fuel in a geologic repository has not been whether a zero-release assumption will be met or ultimately the type of environmental media (e.g., bedded salt, basalt, granite, etc.) selected for the repository but rather that the appropriate standards are established and met, thereby ensuring that any releases of radioactive materials to the environment would not be inimical to public health and safety. For NEPA purposes, such releases within regulatory limits are clearly not significant radiation releases and radiation doses. Therefore, Petitioners have not shown that any differences between Tables B-1 and S-3 provide a seriously different picture of the environmental consequences of the NRC's reactor licensing actions. The NRC concludes that Tables B-1 and S-3 are consistent with each other and there is no technical or regulatory reason to amend either or both tables.

No significance determination for "off-site spent fuel disposal" in Table B-1

The petitioners assert that Table B-1, which codifies the findings of the License Renewal GEIS, does not include a finding as to whether the impacts of spent fuel disposal are significant or not. The "significance determination" in NEPA is made by an agency in determining whether it is necessary to prepare an EIS for a given proposed action.³⁷ With respect to the environmental review of reactor license renewal applications, the NRC has already prepared a generic EIS, the License Renewal GEIS. In addition, for each site-specific license renewal action, the NRC prepares a SEIS. Therefore, the lack of a finding as to whether the impacts of spent fuel disposal are "significant" or "not significant" is irrelevant, as the NRC has already

³⁷ *Lower Alloways Creek Tp. v. Public Service Elec. & Gas Co.*, 687 F.2d 732, 740 (3rd Cir. 1987) ("[An] agency must undertake a comprehensive assessment of the expected effects of a proposed action before it can determine whether that action is 'significant' for NEPA purposes ... [i]f, however, it is clear that the human environment will be 'significantly' affected, then a full-scale EIS is mandatory."); *Blue Mountains Biodiversity Project v. Blackwood*, 161 F.3d 1208, 1211-14, and 1216 (9th Cir. 1998) (Forest Service made clear error of judgment in its decision to prepare an environmental assessment, rather than an environmental impact statement); see also Mandelker, NEPA Law and Litigation, 2d, §§ 8.48-8.58.

satisfied the "significance determination" by preparing a generic EIS and by its regulatory requirement to prepare a site-specific EIS for each reactor license renewal application it considers.

Moreover, the NRC has extensively analyzed spent fuel storage and disposal impacts in Table S-3, and in various EISs, namely, the License Renewal GEIS, ~~in~~ the Continued Storage GEIS, ~~in~~ SEISs for license renewal actions, and ~~in its~~ the review, adoption, and supplementation of DOE's EISs for Yucca Mountain. The License Renewal GEIS provides the regulatory and technical basis for the Commission's findings and the associated impact significance levels for each environmental NEPA issue listed in Table B-1. The NRC's evaluation of the environmental impacts of the issue, "Offsite radiological impacts of spent nuclear fuel and high-level waste disposal,"³⁸ was documented in the 1996 License Renewal GEIS, which relied upon the findings of the NRC's 1990 Waste Confidence Decision and Rule. In addition, the NRC analyzed the EPA's generic repository standards and dose limits in existence at the time and concluded that offsite radiological impacts warranted a Category 1 (generic) determination (61 FR 28467; June 5, 1996). However, ~~in response~~ due to the decision of the U.S. Court of Appeals for the D.C. Circuit ~~Court's decision~~ in *New York v. NRC* and its remand of the 2010 Waste Confidence Decision and Rule (75 FR 81032; December 23, 2010), the NRC was not able to complete its review and update of the impact finding for this issue in the 2013 License Renewal GEIS (NUREG-1437, Revision 1) and update of Table B-1. As a result, the 2013 License Renewal GEIS and rule (78 FR 37282; June 20, 2013) reclassified the issue from Category 1 with no impact level assigned, to an uncategorized issue with an uncertain impact level.

³⁸ This issue was named "Offsite radiological impacts (spent fuel and high level waste disposal)" in the 1996 license renewal GEIS and rule.

On August 26, 2014, the Commission approved the Continued Storage Rule and its associated GEIS (Continued Storage GEIS) amending 10 CFR part 51 to revise the generic determination on the environmental impacts of continued storage of spent nuclear fuel beyond the licensed life for operation of a reactor. In making conforming changes to the Table B-1 entry for the issue "Offsite radiological impacts of spent nuclear fuel and high-level waste disposal," the final rule restored the Category 1 designation and references the existing radiation protection standards for Yucca Mountain instead of making a single impact finding.

The NRC's practice, once it has determined to prepare an EIS, has been to assign a significance level to most potential environmental impacts, by resource area or environmental issue, arising from the proposed action. These levels are "Small, Moderate, and Large." The assigning of these levels to any given impact is not required by law; it is solely a matter of NRC practice. Further, neither the Council on Environmental Quality's nor the NRC's regulations for implementing NEPA under 10 CFR part 51 explicitly require an agency to assign a single significance level to environmental impact issues; CEQ regulations state that "[i]mpacts shall be discussed in proportion to their significance" in the context of preparing environmental impact statements for agency actions.³⁹ Further, NRC does not assign such a level to every resource area or environmental issue covered by a given EIS. The NRC only assigns a single significance level for a generic issue where it is meaningful and appropriate to do so when considering both the context and intensity of a potential environmental impact.⁴⁰

³⁹ 40 CFR 1502.2(b).

⁴⁰ See CEQ regulation 40 CFR 1508.27, which defines the term "significantly," in relation to both "context" and "intensity."

In this regard, the NRC has never assigned a single impact significance level to the issue of "Offsite radiological impacts of spent nuclear fuel and high-level waste disposal." Although the status of a repository, including a repository at Yucca Mountain, remains uncertain and beyond the control of the NRC, the NRC has adopted EPA's radiation protection standards (40 CFR part 197) for Yucca Mountain because they are the current standard for ensuring that the ultimate disposal of spent nuclear fuel will present no undue risk to public health and safety. As discussed in the Continued Storage GEIS, wherever a geologic repository is ultimately sited, the NRC's and EPA's environmental and radiological protection standards would apply. Given these considerations, the Commission's narrative finding in Table B-1 with respect to the issue of offsite disposal is likewise appropriate. That finding states "[t]he 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." Therefore, the Commission, by rule, has determined that a single significance determination is not necessary.

~~Further, neither the Council on Environmental Quality's nor the NRC's regulations for implementing NEPA under 10 CFR part 51 explicitly require an agency to assign a single significance level to environmental impact issues; CEQ regulations state that "[i]mpacts shall be discussed in proportion to their significance" in the context of preparing environmental impact statements for agency actions.⁴⁴~~

~~In conclusion, The NRC concludes that the petitioners' significance determination argument does not provide a seriously different picture of the environmental consequences of~~

⁴⁴ ~~40 CFR 1502.2(b).~~

spent fuel storage and disposal. Instead, based on the above, the NRC concludes that the petitioners' ~~request and~~ assertion that NEPA requires an agency to assign a single level of significance to the issue in question is not proven and the information presented does not provide a sufficient basis to amend the NRC's finding for the issue, "Offsite radiological impacts of spent nuclear fuel and high-level waste disposal," in Table B-1 in appendix B to subpart A of 10 CFR part 51.

The petitioners assert that license renewal applicants in 10 CFR 51.53(c) and NRC staff in 51.71(d) are excused from addressing spent fuel storage impacts in license renewal environmental reviews

The NRC disagrees with the petitioners' assertion that the NRC's regulations in 10 CFR 51.53(c) and 51.71(d) "excuse license renewal applicants and the NRC from addressing spent fuel storage impacts in license renewal cases." The NRC has determined that the potential environmental impacts of spent fuel storage impacts are of a generic nature and as such, do not need to be re-analyzed for every license renewal action. As mentioned previously, for future reactor license renewal applications the NRC will incorporate the environmental impacts analyzed in the Continued Storage GEIS as well as the License Renewal GEIS into the overall NEPA analysis supporting the licensing decision. ¶The Supreme Court has upheld the use of generic environmental analyses by the NRC.⁴² Moreover, As part of the environmental review for each license renewal application, NRC reviews site-specific issues for any new and significant information. In the event that the NRC determines that there is new and significant information concerning the generic spent fuel storage impact finding or any other generic finding, the NRC will consider such information when preparing the supplemental EIS for that

⁴² *Baltimore Gas*, 462 U.S. at 101, 103 S.Ct. at 2254 ("[t]he generic method chosen by the agency is clearly an appropriate method of conducting the hard look required by NEPA").

particular licensing action and if necessary, will also determine whether the License Renewal GEIS or Continued Storage GEIS should be revised accordingly.

Moreover, the quality of the NRC's environmental analysis of spent fuel storage is not dependent on whether the NRC prepares a site-specific or generic analysis. In conducting developing both the License Renewal GEIS and the Continued Storage GEIS, the NRC employed assumptions, including those based upon reactor licensee operating experience, that are sufficiently conservative to bound the predicted impacts such that any variances that may occur from site to site are unlikely to result in environmental impact determinations that are greater than those presented in both GEISs.⁴³ In addition, recent spent fuel studies (including the expedited spent fuel transfer regulatory analysis in COMSECY-13-0030 and NUREG-2161) continue to support the findings of the License Renewal GEIS. Therefore, ~~T~~hough the studies may contain "new" information, the information is not "significant." ~~The~~ NUREG-2161 compared its spent fuel pool accident consequences findings to findings from previous research studies and found that they arewere of the same magnitude. Finally, the Continued Storage GEIS supports the Commission's original determination that supports use of a generic analysis. Thus there is no technical or regulatory reason to amend these regulations.

The petitioners assert that the need for power and economic costs were excluded in license renewal environmental reviews

The petitioners assert that NRC regulations in 10 CFR 51.53(c) and 51.71(d) excuse license renewal applicants and the NRC staff from addressing the need for power in license renewal cases. The petitioners state, "[b]y excluding need for power from consideration in re-

⁴³ Statements of Consideration for 1996 (61 FR 28467, 28479-480) and 2013 (78 FR 37282, 37310) License Renewal GEISs.

licensing decisions, the [Continued Storage] GEIS cripples its ability to assess the environmental impacts of storing spent fuel... This results in an 'unbounded' analysis of radiological risk." The petitioners also assert that "it is essential to incorporate the economic costs of spent fuel storage and disposal in reactor cost-benefit analyses."

In conjunction with the issuance of the License Renewal GEIS in 1996, the Commission amended its environmental protection regulations concerning environmental reviews for nuclear power plant license renewal actions.⁴⁴ These amendments defined the generic environmental impacts addressed in the License Renewal GEIS and the environmental impacts for which nuclear plant site-specific analyses were to be performed. The Commission stated in the June 5, 1996 final rule for the "Environmental Review for Renewal of Nuclear Power Plant Operating Licenses,"

[T]he NRC will neither perform analyses of the need for power nor draw any conclusions about the need for generating capacity in a license renewal review. [The] definition of purpose and need reflects the Commission's recognition that, absent findings in the safety review required by the Atomic Energy Act of 1954, as amended, or in the NEPA environmental analysis that would lead the NRC to reject a license renewal application, the NRC has no role in the energy planning decisions of State regulators and utility officials. From the perspective of the licensee and the State regulatory authority, the purpose of renewing an operating license is to maintain the availability of the nuclear plant to meet system energy requirements beyond the term of the plant's current license.⁴⁵

As stated in the 2013 License Renewal GEIS,

[T]he purpose and need for the proposed action (issuance of a renewed license) is to provide an option that allows for baseload power generation capability beyond the term of the current nuclear power plant operating license to meet future system generating needs. Such needs may be determined by other energy planning

⁴⁴ 61 FR 28467; June 5, 1996.

⁴⁵ 61 FR at 28472.

decision-makers, such as State, utility, and, where authorized, Federal agencies (other than NRC). Unless there are findings in the safety review required by the Atomic Energy Act of 1954, as amended (AEA), or the NEPA environmental review that would lead the NRC to reject a license renewal application, the NRC does not have a role in the energy-planning decisions of whether a particular nuclear power plant should continue to operate.⁴⁶

As shown by these statements, it has been the NRC's longstanding position not to consider the need for power or economic costs in making its license renewal decisions. Consideration of the need for power or the economic cost of renewing the operating license of a nuclear reactor is beyond the NRC's statutory and regulatory purview; rather, such consideration is the responsibility of State and local authorities and where appropriate, Federal agencies such as the Federal Energy Regulatory Commission or the Tennessee Valley Authority. As noted above, the NRC provides a complete picture of the environmental impacts of spent fuel storage at the time of license renewal for those authorities' consideration. In addition, those authorities may consider any obligations to pay into the Nuclear Waste Fund, which will pay for ultimate disposal of spent nuclear fuel, in determining the economic benefits of operating a facility during the renewed license term. The petitioners' assertion that NRC's regulatory approach of excluding need for power from consideration in re-licensing decisions "cripples" NRC's ability to assess the environmental impacts of storing spent fuel is not new and significant information and thus does not provide a proven and does not provide a sufficient regulatory basis ~~to~~for amending ing the ~~NRC's~~ regulations.

"Reasonable assurance" findings not included in proposed section 51.23

⁴⁶ License Renewal GEIS, NUREG-1437, Revision 1 (2013), Section 1.3, p. 1-3 – 1-4.

In commenting upon the NRC's proposed Continued Storage rule (78 FR 56776; September 13, 2013), the petitioners asserted that the NRC's proposal to remove the "reasonable assurance" statement from 10 CFR 51.23(a) was improper. Prior to the promulgation of the Continued Storage final rule (79 FR 56238; September 19, 2014), 10 CFR 51.23(a) stated, in part, that "the Commission believes there is reasonable assurance that sufficient mined geologic repository capacity will be available to dispose of the commercial high-level radioactive waste and spent fuel generated in any reactor when necessary."⁴⁷ In the final Continued Storage rule, the NRC removed the "reasonable assurance" statement.⁴⁸

The statements of consideration of the final Continued Storage rule explained that 10 CFR 51.23(a) sets forth the NRC's generic determination that the environmental impacts of the continued storage of spent nuclear fuel beyond the licensed life for operation of a reactor are those impacts identified in NUREG-2157 (the Continued Storage GEIS). In particular, the statements of consideration noted that,

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.⁴⁹

Consequently, there ~~is~~was no need to retain the "reasonable assurance" statement, which is a safety finding, as 10 CFR 51.23(a) stated only the generic environmental determination and the remainder of 10 CFR 51.23 concerned ed the NRC's NEPA compliance. In this regard, the statements of consideration explained,

⁴⁷ 10 CFR 51.23(a) (2013).

⁴⁸ 79 FR at 56260.

⁴⁹ 79 FR at 56253.

The [Continued Storage] 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 [Continued Storage] 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 [Continued Storage] 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 [Continued Storage] 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 [Continued Storage] 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 [Continued Storage] GEIS.⁵⁰

The petitions do not present any new and significant information that would form a technical or regulatory basis to amend 10 CFR 51.23, particularly in light of the September 19, 2014, Continued Storage rulemaking.

The petitioners assert that expedited spent fuel transfer analysis is "new and significant information"

The petitioners request that the NRC "consider, in all pending and future reactor licensing and re-licensing decisions, new and significant information bearing on the

⁵⁰ 79 FR at 56254-55.

environmental impacts of high-density pool storage in reactor pools and alternatives for avoiding or mitigating those impacts.” The petitioners assert that NRC staff generated new and significant information during its post-Fukushima Expedited Spent Fuel Transfer proceeding. Specifically, on October 9, 2013, the NRC released NUREG-2161, “Consequence Study of a Beyond-Design-Basis Earthquake Affecting the Spent Fuel Pool for a U.S. Mark I Boiling Water Reactor” and on November 12, 2013, the NRC delivered a regulatory analysis in COMSECY-13-0030, “Staff Evaluation and Recommendation for Japan Lessons Learned Tier 3 Issue on Expedited Transfer of Spent Fuel.” These documents concluded that spent fuel pools are very robust structures with large safety margins, and that proposed regulatory actions for spent fuel pool safety improvements were not warranted. This conclusion not only covers spent fuel pools at operating reactors applying for license renewal but also spent fuel pools that would be constructed at new reactor sites. Citing the low risk to public health and safety from spent fuel pool storage, the Commission subsequently concluded that regulatory action need not be pursued in Staff Requirements Memorandum (SRM), SRM-COMSECY-13-0030, issued on May 23, 2014.

The petitioners believed that former Chairman Allison Macfarlane’s comments on COMSECY-13-0030, also provide new and significant information that requires the NRC to reconsider its impact findings in the 2013 license renewal GEIS. The former Chairman’s comments were considered by the other Commissioners in the development of the SRM on this issue. However, the other four NRC Commissioners at that time determined in SRM-COMSECY-13-0030, that no further generic assessments concerning the expedited transfer of spent fuel to dry cask storage be pursued. Notably, the SRM supported the staff’s approach of using the NRC’s Safety Goal Policy Statement of 1986 as a screening metric. ~~The~~ SRM-COMSECY-13-0030 is the agency’s determination on this issue.

Nonetheless, the Petitioners contend that NUREG-2161 and COMSECY-13-0030 constitute new and significant information based on those documents' discussion of the severity of the impact of a spent fuel pool accident, sensitivity studies showing that some mitigation measures could be cost beneficial, and the possibility that a reactor accident could impact the likelihood of a spent fuel pool fire. However, none of these sources of information provide a "seriously different picture" of the environmental consequences of spent fuel storage. First, as noted above, the NRC has frequently recognized that the consequences of a spent fuel accident could be large but has determined that the overall risk of spent fuel pool accidents is small in light of the low probability of such an event.⁵¹ Thus, the petitioners have not shown that size of the consequences of a spent fuel pool accident constitute new and significant information. Rather, NUREG-2161 and COMSECY-13-0030's recognition that the consequences of a spent fuel pool accident could be large but that the overall risk from such an event is small in light of the low probability of such an event comports with the agency's previous considerations of this issue. Second, while the sensitivity studies may have shown some mitigation measures could be cost-beneficial, they are based on alternate assumptions that do not represent the NRC's analysis of the most likely impacts of a spent fuel pool accident. In any event, petitioners have not shown with specificity that any information in these sensitivity studies would undermine the agency's overall conclusion that despite potentially large consequences, the low probability renders the overall risk of a spent fuel pool accident low. Finally, contrary to petitioners' assertions, the NRC has frequently responded to claims that the probability of a reactor accident

⁵¹ NUREG-1437, Rev. 1, at E-34 to -39.

could impact the probability of a spent fuel pool accident and repeatedly found that such a probability is very low.⁵²

Consequently, the NRC concludes that neither COMSECY-13-0030 nor NUREG-2161 constitute "new and significant information" requiring the NRC to supplement any of its prior EISs, whether generic or specific. ~~Similarly, the NRC concludes that there is no technical or regulatory basis~~ to amend those ~~of its~~ "regulations that make or rely on findings regarding the environmental impacts of spent fuel storage during reactor operation, including Table B-1 and all regulations approving standardized reactor designs."

III. Determination of Petitions.

For the reasons cited in Section II of this document, the NRC has concluded that petitioners have not provided new and significant information that would form a ~~there is no technical or regulatory~~ basis to amend the NRC regulations identified in the PRM-51-30 and PRM-51-31. Therefore, the NRC is denying PRM-51-30 and PRM-51-31.

Earlier Part 51 PRMs

Several of the regulations identified by the petitioners have been the subject of prior rulemaking petitions (i.e., PRM-51-1, PRM-51-10, PRM-51-12, and PRMs-51-14 to 51-28) and issues similar to those raised by the petitioners were considered by the Commission in these prior petitions, and thus, these issues have been well vetted. The PRM-51-1 petitioner

⁵² 73 FR at 46210; NUREG-1437, Rev. 1, at E-38; NUREG-2157 at D-438 to D-440; COMSECY-13-0030, Enclosure 1 at 138.

asserted that Table S-3 “seriously understate[d]” the impact on human health and safety from the uranium fuel cycle and that the Table S-3 values should be revised accordingly.⁵³ The NRC denied PRM-51-1 based upon the Commission’s “generic determination that the radiological impacts of the uranium fuel cycle ... on individuals off-site will remain at or below the Commission’s regulatory limits, and as such, are of small significance.”⁵⁴ The NRC described this generic determination in Chapter 6 of the 1996 version of the License Renewal GEIS; the generic determination was based upon findings made in various NRC and EPA rulemakings.⁵⁵

The petitioners in PRM-51-10 and PRM-51-12 challenged the generic findings for spent fuel storage impacts codified in Table B-1 and requested a rulemaking to remove this finding.⁵⁶ The petitioners raised the prospect of a fire at a nuclear power reactor’s spent fuel pool and the resulting release of radioactive material to the environment. According to the petitioners’ scenario, the spent fuel pool fire would be initiated by either an accident or a successful terrorist strike that would cause a partial or complete drain of the cooling water in the spent fuel pool. The petitioners requested the amendment of several of the regulations that are the subject of PRM-51-30 and PRM-51-31, namely, Table B-1, 10 CFR 51.23, 51.53(c) and 51.95(c).⁵⁷ The petitioners requested that the impacts of spent fuel storage be considered on a site-specific basis, in license renewal cases, rather than generically, due to this potential threat. The Commission denied PRM-51-10 and PRM-51-12 and, concluding ed that the risk of such a spent fuel pool fire was very low and that given the safety and security requirements that applied to all plants, as well as the physical robustness of spent fuel pools, the environmental impacts of

⁵³ 73 FR 14946; March 20, 2008.

⁵⁴ 73 FR at 14947.

⁵⁵ *Id.*, at 14948.

⁵⁶ 73 FR 46204; August 8, 2008.

⁵⁷ *Id.*, at 46205.

spent fuel pool storage could be handled generically.⁵⁸ The NRC's denial of PRM-51-10 and PRM-51-12 was upheld ~~in court~~ by the Court of Appeals for the Second Circuit.⁵⁹

Finally, in a series of virtually identical petitions, docketed as PRM-51-14 through PRM-51-28, ~~the~~ petitioners requested that the NRC rescind all regulations that reach generic environmental impact conclusions regarding severe reactor accidents and spent fuel pool accidents, which would include various provisions of Table B-1 and 10 CFR 51.53. The PRM-51-14 through PRM-51-28 petitions were filed shortly after the NRC issued its Near-Term Task Force (NTTF) report, "Recommendations for Enhancing Reactor Safety in the 21st Century, the [NTTF] Review of Insights from the Fukushima Dai-ichi Accident," dated July 12, 2011. The NTTF report provided the NRC staff's recommendations to enhance U.S. nuclear power plant safety following the March 11, 2011, Fukushima accident in Japan. After determining that the NTTF report did not constitute new and significant information and further, that the petitioners had provided no technical or regulatory basis to amend any of the NRC regulations in question, the NRC denied the PRM-51-14 through PRM-51-28 petitions.⁶⁰

IV. Availability of Documents.

The documents identified in the following table are available to interested persons through one or more of the following methods, as indicated. For more information on accessing ADAMS, see the ADDRESSES section of this document. [update following table as needed]

⁵⁸ *Id.*, at 46206-12.

⁵⁹ *New York v. U.S. Nuclear Regulatory Commission*, 589 F.3d 551 (2nd Cir. 2009).

⁶⁰ 80 FR 40235 (August 12, 2015).

DOCUMENT	ADAMS ACCESSION NO. / WEB LINK / FEDERAL REGISTER CITATION
Blue Ribbon Commission on America's Nuclear Future- Final Report, January 2012.	http://energy.gov/sites/prod/files/2013/04/f0/brc_finalreport_jan2012.pdf
CLI-14-07, DTE Electric Co., et al., July 17, 2014.	http://www.nrc.gov/reading-rm/doc-collections/commission/orders/2014/2014-07cli.pdf
"Comments by Environmental Organizations on Draft Waste Confidence Generic Environmental Impact Statement [GEIS] and Proposed Waste Confidence Rule and Petition to Revise and Integrate All Safety and Environmental Regulations Related to Spent Fuel Storage and Disposal," January 7, 2014.	ML14029A124 ML14029A169 ML14029A154
COMSECY-13-0030, Staff Evaluation and Recommendation for Japan Lessons-Learned Tier 3 Issue on Expedited Transfer of Spent Fuel, November 12, 2013.	ML13273A601
COMSECY-13-0030 Vote Sheet, Staff Evaluation and Recommendation for Japan Lessons-Learned Tier 3 Issue on Expedited Transfer of Spent Fuel, April 8, 2014.	http://www.nrc.gov/reading-rm/doc-collections/commission/comm-secy/2013/2013-0030comvtr.pdf
<i>Federal Register</i> notice—Consideration of Environmental Impacts of Temporary Storage of Spent Fuel After Cessation of Reactor Operation, December 23, 2010.	75 FR 81032
<i>Federal Register</i> notice — <u>Waste Confidence</u> - Continued Storage of Spent Nuclear Fuel (proposed rule), September 13, 2013.	78 FR 56776
<i>Federal Register</i> notice – Environmental Effects of the Uranium Fuel Cycle, April 22, 1974.	39 FR 14188
<i>Federal Register</i> notice – Licensing and Regulatory Policy and Procedures for Environmental Protection; Uranium Fuel Cycle Impacts From Spent Fuel Reprocessing and Radioactive Waste Management, August 2, 1979.	44 FR 45362
<i>Federal Register</i> notice – Waste Confidence Decision, August 31, 1984.	49 FR 34658
<i>Federal Register</i> notice – Consideration of Environmental Impacts of Temporary Storage of Spent Fuel After Cessation of Reactor Operation, September 18, 1990.	55 FR 38472
<i>Federal Register</i> notice – Environmental Review for Renewal of Nuclear Power Plant Operating Licenses, June 5, 1996.	61 FR 28467

<i>Federal Register</i> notice – Waste Confidence Decision Update, December 23, 2010.	75 FR 81037
<i>Federal Register</i> notice - Continued Storage of Spent Nuclear Fuel (final rule), September 19, 2014.	79 FR 56238
<i>Federal Register</i> notice—Revisions to Environmental Review for Renewal of Nuclear Power Plant Operating Licenses, June 20, 2013.	78 FR 37282
<i>Federal Register</i> notice - Revise and Integrate All Safety and Environmental Regulations Related to Spent Fuel Storage and Disposal, April 21, 2014.	79 FR 22055
<i>Federal Register</i> notice - Environmental Impacts of Spent Fuel Storage During Reactor Operation, May 1, 2014.	79 FR 24595
<i>Federal Register</i> notice - Environmental Impacts of Spent Fuel Storage During Reactor Operation, <u>July 24, 2014</u> .	79 FR 42989
<i>Federal Register</i> notice - New England Coalition on Nuclear Pollution; Denial of Petition for Rulemaking, March 20, 2008.	73 FR 14946
<i>Federal Register</i> notice - The Attorney General of Commonwealth of Massachusetts, The Attorney General of California; Denial of Petitions for Rulemaking, August 8, 2008.	73 FR 46204
<i>Federal Register</i> notice - Environmental Review for Renewal of Operating Licenses (P roposed R ule), September 17, 1991.	56 FR 47016
<i>Federal Register</i> notice - Environmental Review for Renewal of Nuclear Power Plant Operating Licenses (Final Rule), June 5, 1996.	61 FR 28467
IAEA (International Atomic Energy Agency). 2005. Radioactive Waste Management Studies and Trends. IAEA/WMDB/ST/4, Vienna, Austria.	http://www-pub.iaea.org/MTCD/publications/PDF/WMDB-ST-4.pdf
Makhijani, Arjun, Comments <u>of the Institute for Energy and Environmental Research on the U.S. Nuclear Regulatory Commission's</u> on the Proposed Waste Confidence Rule Update and Proposed Rule Regarding Environmental Impacts of Temporary Spent Fuel Storage.	ML091310195

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NUREG-1437, "Generic Environmental Impact Statement for License Renewal of Nuclear Plants," June 20, 2013.	ML13107A023
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PRM-51-30, "Petition for Rulemaking to Revise and Integrate All Safety and Environmental Regulations Related to Spent Fuel Storage and Disposal," Submitted by Diane Curran on behalf of 34 Environmental Organizations ," January 28 , 2014.	ML14029A124
PRM-51-31, " Environmental Organization's Petition for Rulemaking to Consider New &and Significant Information Regarding Environmental Impacts of High-Density Spent Fuel Storage &and Mitigation Alternatives in Licensing Proceedings for New Reactors &and License Renewal Proceedings effor Existing Reactors and Duly Modify All NRC Regulations Regarding Environmental Impacts of Spent Fuel Storage During Reactor Operation ," March 12 February 18, 2014.	ML14071A382
PRM-51-31, " Environmental Organization's Amended Petition to Consider New &and Significant Information Regarding Environmental Impacts of High-Density Spent Fuel Storage &and Mitigation Alternatives in Licensing Proceedings for New Reactors &and License Renewal Proceedings effor Existing Reactors and Duly Modify All NRC Regulations Regarding Environmental Impacts of Spent Fuel Storage During Reactor Operation ," June 26, 2014.	ML14177A660

Safety Goals <u>for the Operations of Nuclear Power Plants</u> : Policy Statement: <u>Republication</u> of 1986, August 21, 1986.	51 FR 30028
SRM-SECY-14-0072, "Continued Storage of Spent Nuclear Fuel," August 26, 2014.	ML14238A219
WASH-1248, "Environmental Survey of the Uranium Fuel Cycle," April 1974.	ML14092A628

Dated at Rockville, Maryland, this day of , 2015.

For the Nuclear Regulatory Commission.

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

PRM-51-30, "Petition for Rulemaking to Revise and Integrate All Safety and Environmental Regulations Related to Spent Fuel Storage and Disposal, Submitted by Diane Curran on behalf of 34 Environmental Organizations," January 28, 2014.	ML14029A124
PRM-51-31, "Petition for Rulemaking to Consider New & Significant Information Re Environmental Impacts of High-Density Spent Fuel Storage & Mitigation Alternatives in Licensing Proceedings for New Reactors & License Renewal Proceedings of Existing Reactors, March 12, 2014.	ML14071A382
PRM-51-31, "Amended Petition to Consider New & Significant Information Re Environmental Impacts of High-Density Spent Fuel Storage & Mitigation Alternatives in Licensing Proceedings for New Reactors & License Renewal Proceedings of Existing Reactors, June 26, 2014	ML14177A660
Safety Goal Policy Statement of 1986, August 21, 1986.	51 FR 30028
SRM- SECY-14-0072, Continued Storage of Spent Nuclear Fuel, August 26, 2014.	ML14238A219
WASH-1248, "Environmental Survey of the Uranium Fuel Cycle," April 1974.	ML14092A628

Dated at Rockville, Maryland, this day of , 2015.

For the Nuclear Regulatory Commission.

Annette L. Vietti-Cook,
Secretary of the Commission

ADAMS Accession No.: ML15135A405 (Pkg.); ML15139A182 (FRN)

ADM-012 *via email

OFFICE	NRR/DPR/PRMB/ PM	NRR/DPR/PRMB/ /TL	NRR/DPR/PRMB/ RS	NRR/DPR/PRMB/ BC	NRR/DPR/DD	NRR/DLR/ D*	NRR/JLD/ D*	NMSS/MSTR/ D*
NAME	JTobin	EOesterle	GLappert	TInverso	AMohseni	CMiller	JDavis	JPiccone
DATE	5/20/2015	5/28/2015 w/comments	5/28/2015	5/29/15	7/16/15	7/30/15	7/30/15	7/30/15 w/comments
OFFICE	NRR/DPR/D	NMSS/DSFM/ D*	ADM/DAS/RAD/ BC*	NRO/D	NMSS/ D*	OGC/GCLR/ RFC*	NRR/D	EDO
NAME	LKokajko	MLombard	CBladey	GTracy	CHaney	APessin	WDean	VMcCree
DATE	8/3/15	7/30/15	8/17/15	8/21/15	8/18/15	9/17/15	10/6/15	10/28/15

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KLS Edits

Diane Curran
Harmon, Curran, Spielberg & Eisenberg, L.L.P.
1726 M Street N.W. Suite 600
Washington, D.C. 20036

Dear Ms. Curran:

I am responding to two Petitions for Rulemaking (PRMs) that you submitted on behalf of 34 environmental organizations (the petitioners). Specifically, this letter responds to the petitioners' December 20, 2013, submittal, which was corrected on January 7, 2014 (Accession No. ML14029A124 in the U.S. Nuclear Regulatory Commissions' Agencywide Documents Access and Management System (ADAMS)), and the petitioners' February 18, 2014, submittal, which was supplemented on May 1, 2014 (ADAMS Accession Nos. ML14071A382 and ML14177A660). These two petitions were docketed by the NRC as PRM-51-30 and PRM-51-31, respectively. In these two petitions, the petitioners requested that the NRC amend its regulations in Part 51 of Title 10 of the *Code of Federal Regulations* (10 CFR) that concern the impacts of spent fuel storage and disposal in environmental reviews for nuclear power plant license renewal applications.

PRM-51-30 was filed as part of the petitioners' comments on the NRC's proposed continued storage rule and that rule's associated generic environmental impact statement (GEIS). PRM-51-31 was filed shortly after the public release of the NRC staff's findings in the expedited spent fuel transfer analysis. The NRC published a notice of receipt in the *Federal Register* for PRM-51-30 on April 21, 2014 (79 FR 22055), and for PRM-51-31 on May 1, 2014 (79 FR 24595), and published an additional notice upon receipt of the supplement to PRM-51-31 on July 24, 2014 (79 FR 42989). PRM-51-31, as supplemented, asserted that recent NRC staff studies and a statement by the former NRC Chairman, constituted "new and significant" information under the National Environmental Policy Act that justified the requests made in PRM-51-31. The NRC did not request public comments on PRM-51-30 or PRM-51-31 because the NRC determined that it had sufficient information for review and the issues have been well-vetted in past NRC proceedings.

The NRC has determined that PRM-51-30 and PRM-51-31 have not provided no-a sufficient basis to revise the regulations, as requested. The NRC is therefore denying the two petitions. The reasons for the denial are explained in the enclosed notice, which will be published in the *Federal Register*. Upon publication of the enclosed notice, the NRC will close PRM-51-30 and PRM-51-31.

In PRM-51-31, the petitioners made several non-rulemaking requests; namely, that the NRC should: suspend the effectiveness of Table B-1 of appendix B to subpart A 10 CFR Part 51; suspend the effectiveness, in new reactor licensing proceedings, of all regulations approving standardized reactor designs and all environmental assessments (EAs) approving Severe Accident Mitigation Design Alternatives; republish for public comment, the June 2013 License

D. Curran

- 2 -

Renewal GEIS, the environmental impacts statements for all new reactors, and the EAs for all new reactor design certifications; and suspend all new reactor licensing and license renewal decisions.

In its decision CLI-14-07, dated July 17, 2014 (ADAMS Accession No. ML14195A499), the Commission denied the petitioners' request to suspend all new reactor licensing decisions and license renewal decisions. The NRC is denying the remaining non-rulemaking requests as the NRC has not found ~~no~~ sufficient basis to amend the regulations identified in PRM-51-3; and as such, there is no reason to grant the non-rulemaking requests. In addition, as described in the enclosed notice, the NRC has determined that the staff studies and the statements by ~~the~~ former NRC ~~e~~Chairman, which were identified by the petitioners in PRM-51-31, as supplemented, do not constitute new and significant information warranting amendments to the NRC's regulations.

You may direct any questions regarding this matter to Jennifer C. Tobin, by calling 301-415-2328, or by e-mailing Jennifer.Tobin@nrc.gov.

Sincerely,

Annette L. Vietti-Cook
Secretary of the Commission

Enclosure:
Federal Register notice

D. Curran

- 2 -

environmental impacts statements for all new reactors, and the EAs for all new reactor design certifications; and suspend all new reactor licensing and license renewal decisions.

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You may direct any questions regarding this matter to Jennifer C. Tobin, by calling 301-415-2328, or by e-mailing Jennifer.Tobin@nrc.gov.

Sincerely,

Annette L. Vietti-Cook
Secretary of the Commission

Enclosure:
Federal Register notice

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*via e-mail

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NAME	JTobin	EOesterle	GLappert	TInverso	AMohseni	LKokajko
DATE	5/20/2015	5/28/15	5/28/15	7/14/15	7/10/15	7/22/15
OFFICE	ADM/DAS/RADB/BC*	OGC*	NRR/D	EDO	SECY	
NAME	CBladey	APessin	WDean	VMcCree	AVietti-Cook	
DATE	8/17/15	9/17/15	10/06/15	10/ /15		

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NOTATION VOTE

RESPONSE SHEET

TO: Annette Vietti-Cook, Secretary

FROM: Commissioner Ostendorff

SUBJECT: SECY-15-0136: DENIAL OF PETITIONS FOR RULEMAKING REQUESTING TO RESCIND REGULATIONS THAT MAKE GENERIC DETERMINATIONS REGARDING THE ENVIRONMENTAL IMPACTS OF SPENT FUEL STORAGE AND DISPOSAL WHEN CONSIDERING NUCLEAR POWER REACTOR LICENSE APPLICATIONS (PRM-51-30 AND PRM-51-31; NRC-2014-0014 AND NRC-2014-0055)

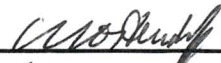
Approved XX Disapproved _____ Abstain _____ Not Participating _____

COMMENTS: Below XX Attached XX None _____

I thank the staff for their efforts on SECY-15-0136 and I approve the Federal Register Notice subject to the attached edits.

Entered in STARS

Yes _____
No _____



Signature
1/20/16

Date

NUCLEAR REGULATORY COMMISSION

10 CFR Part 51

[Docket Nos. PRM-51-30 and PRM-51-31; NRC-2014-0014 and NRC-2014-0055]

Generic Determinations Regarding the Environmental Impacts of Spent Fuel Storage and Disposal when Considering Nuclear Power Reactor License Applications

WCO Comments

AGENCY: Nuclear Regulatory Commission.

ACTION: Petitions for rulemaking; denial.

SUMMARY: The U.S. Nuclear Regulatory Commission (NRC) is denying two petitions for rulemaking (PRMs), PRM-51-30 and PRM-51-31, submitted by Diane Curran on behalf of 34 environmental organizations (the petitioners). The petitioners request that the NRC revise certain regulations that concern the impacts of spent fuel storage and disposal in environmental reviews for nuclear power plant license renewal applications. The NRC is denying the petitions because they provide an insufficient basis to consider a rulemaking to revise such regulations.

DATES: The dockets for the petitions for rulemaking, PRM-51-30 and PRM-51-31, are closed on **[INSERT DATE OF PUBLICATION IN THE *FEDERAL REGISTER*]**.

ADDRESSES: Please refer to Docket ID NRC-2014-0014 and NRC-2014-0055, respectively, when contacting the NRC about the availability of information regarding these petitions. You can access publicly-available documents related to the petition using any of the following methods:

supplement to the February 18, 2014, petition and re-noticed the petition, along with the supplement, for informational purposes only (79 FR 42989; July 24, 2014).

II. Reasons for Denial.

The NRC is denying the petitions because the petitioners have not presented a sufficient basis to amend the regulations. The petitioners largely contend that they present new and significant information that requires the agency to revisit previous NEPA analyses that form the basis for the challenged regulations. Under Supreme Court and Commission precedent, information that provides a “seriously different picture” of the environmental consequences than previously considered is new and significant information.¹³ As a result, ~~T~~the NRC determined that the current technical basis for those regulations challenged by the petitioners remain sound.

The petitioners assert that the NRC’s environmental review regulations are “balkanized”

The petitioners assert that “[t]he NRC’s piecemeal and disjointed approach to the consideration of spent fuel storage and disposal impacts violates the NEPA principle that an agency may not segment its analysis in a manner that conceals the environmental significance of its action.” Segmentation refers to instances where a Federal agency splits a project into smaller components to avoid preparing an EIS, or where an agency does not consider related actions in a single EIS.¹⁴ The NRC does not agree that its approach to the consideration of spent fuel storage and disposal impacts is piecemeal and disjointed or that NRC’s

¹³ Marsh v. Oregon Natural Resources Council, 490 U.S. 360 (1989).

¹⁴ Delaware Riverkeeper Network v. FERC, 753 F.3d 1304, 1313 (D.C. Cir. 2014) (“An agency impermissibly ‘segments’ NEPA review when it divides connected, cumulative, or similar federal actions into separate projects and thereby fails to address the true scope and impact of the activities that should be under consideration); see Council on Environmental Quality (CEQ) regulation, 10 CFR 1508.25.

environmental review regulations in 10 CFR part 51 are “balkanized” or result in NEPA segmentation.

While the petitioners have pointed to some instances where the agency relies on generic analyses as part of its overall NEPA review for certain licensing actions, the petitioners have not shown any case where the NRC artificially divided a licensing action into smaller components. Rather, as discussed below, the NRC fully considers the environmental impacts of each licensing action through a combination of site-specific EISs and, where appropriate, generic EISs. Although addressed in two generic EISs prepared by the NRC (i.e., the License Renewal GEIS and the Continued Storage GEIS), spent fuel storage and disposal impacts are reassessed by the NRC staff during each new reactor and license renewal environmental review to determine if there is new and significant information that could alter the generic conclusions. The use of generic analyses by the NRC to support licensing decisions has been upheld by the United States Supreme Court.¹⁵

In addition to the License Renewal GEIS and the Continued Storage GEIS, the NRC prepares EISs for all new reactor and license renewal applications. Within the umbrella of both its generic and site-specific EISs, the NRC adequately considers the spent fuel storage impacts of its licensing decisions. The EISs for new nuclear power reactors describe the environmental impacts from the onsite storage and management of spent nuclear fuel and offsite disposal based on 40 years of reactor operation, which is the maximum, initial term of a reactor license.¹⁶ The License Renewal GEIS describes the environmental impacts from the onsite storage and

¹⁵ In a 1983 decision concerning a challenge to Table S-3, the Supreme Court stated that “[t]he generic method chosen by the agency is clearly an appropriate method of conducting the hard look required by NEPA.” *Baltimore Gas v. NRDC*, 462 U.S. 87, 101, 103 S Ct. 2246, 2254 (1983).

¹⁶ 10 CFR 52.104.

offsite disposal of spent nuclear fuel generated during an additional 20 years of reactor operation (i.e., 20 years beyond the expiration of the initial license).¹⁷ The Continued Storage GEIS describes the environmental impacts of the continued storage of spent nuclear fuel beyond the licensed life for operation of a reactor. Additionally, spent fuel storage and disposal impacts are reassessed by the NRC staff during each new reactor and license renewal environmental review to determine if there is new and significant information that could alter the generic conclusions.

Moreover, the underlying technical bases for the consideration of spent fuel storage and disposal impacts in EISs for new nuclear power reactors and the License Renewal GEIS are the same. Combined with the Continued Storage GEIS, these NEPA documents provide a complete analysis of spent fuel storage and disposal impacts. The regulations in 10 CFR part 51 are both premised upon, and support, this NEPA framework of generic EISs supported by site-specific EISs.

The NRC's approach improves the effectiveness of environmental reviews by generically resolving issues that are not substantially different from one proceeding to another, while still ensuring that those impacts are considered in subsequent licensing actions. The NRC conducts environmental and safety reviews for the issuance of licenses for the operation of nuclear power plants including the onsite storage of spent nuclear fuel. The NRC has also conducted separate environmental and safety reviews for the issuance of specific licenses for the storage of spent nuclear fuel in independent spent fuel storage installations (ISFSIs).¹⁸ With respect to spent fuel disposal, the U.S. Department of Energy (DOE) is responsible for developing an EIS for spent

¹⁷ 10 CFR 54.31.

¹⁸ NRC regulation, 10 CFR 72.3, defines an ISFSI as "a complex designed and constructed for the interim storage of spent nuclear fuel."

the impacts that have been analyzed generically in the Continued Storage GEIS and License Renewal GEIS. The NRC concludes that its 10 CFR Part 51 environmental review regulations are not "~~balkanized, inappropriately segmented~~" and are consistent. ~~Thus, there is no technical or regulatory and thus there is no~~ reason to amend these regulations.

The petitioners assert that Table S-3 has been repudiated

The petitioners' expert, Dr. Arjun Makhijani, in a declaration attached to the petitioners' January 2014 submission, states that the Table S-3 finding regarding the impacts of spent fuel disposal is no longer valid because the finding is based upon the disposal of spent fuel in a bedded salt repository and that such disposal would result in zero releases of radioactive effluents, and therefore, zero radiological dose. Dr. Makhijani asserts that

[m]oreover, we note that Table S-3 at 10 CFR 51.51 is invalid for estimating high-level waste disposal impacts. Among other things, its underlying assumption of disposal in a bedded salt repository for spent fuel disposal was repudiated by the NRC itself in 2008. Therefore, the NRC must prepare a new disposal impact analysis in the context of its waste confidence decision.²⁰

The petitioners, through Dr. Makhijani's declaration, assert that the NRC must prepare a new analysis concerning the impacts of spent fuel disposal.

Dr. Makhijani's statement evaluates Table S-3 in isolation and does not consider later developments in the NRC's regulatory policy and Supreme Court precedent. The Atomic Energy Commission, the predecessor agency of the NRC, promulgated the initial version of Table S-3 on April 22, 1974 (39 FR 14188). Since the promulgation of Table S-3, the Nuclear

²⁰ "Declaration of Dr. Arjun Makhijani Regarding the Waste Confidence Proposed Rule and Draft Generic Environmental Impact Statement," attached to PRM-51-30 (paragraph 2.8 on p. 6).

Waste Policy Act of 1982 (NWSA) adopted deep geologic disposal as the nation's solution for spent fuel disposal. ~~In addition~~Nonetheless, in 1983, the United States Supreme Court, in its *Baltimore Gas & Elec. Co. v. NRDC* decision,²¹ upheld both Table S-3 and the approach taken by the NRC in using Table S-3 data in individual licensing proceedings. In *Baltimore Gas*, the Supreme Court recognized that the purpose of Table S-3 was "not to evaluate or select the most effective long-term waste disposal technology or develop site selection criteria," ~~but "to analyze intensively the most probable long-term waste disposal method."~~²²—In this regard, the Court noted that the NRC's intent, as stated in the 1979 rule revising Table S-3 (44 FR 45362; August 2, 1979), was to estimate the impact of the long-term waste disposal method conservatively.²³ This conservative analysis included the NRC's use of the zero release assumption.²⁴ The Court also noted that other aspects of Table S-3 were premised upon the assumption that "all volatile materials in the fuel would escape to the environment" prior to the sealing of the geologic repository; this assumption balanced the zero-release assumption, an approach that the Court found acceptable.²⁵ In addition to concluding that it was "not unreasonable" for the NRC to employ the zero release assumption, the Court stated that "the zero-release assumption is but a single figure in an entire Table, which the Commission expressly designed as a risk-averse estimate of the environmental impact of the fuel cycle ... [a] reviewing court should not magnify a single line item beyond its significance as only part of a larger Table."²⁶

²¹ *Baltimore Gas v. NRDC*, 462 U.S. 87, 103 S.Ct. 2246 (1983).

²² *Id.*, 462 U.S. at 102, 103 S.Ct. at 2254-55.

²³ *Id.*, 462 U.S. at 102, 103 S.Ct. at 2255.

²⁴ *Id.* ("The zero-release assumption cannot be evaluated in isolation. Rather, it must be assessed in relation to the limited purpose for which the Commission made the assumption").

²⁵ *Id.*, 462 U.S. at 103, 103 S.Ct. at 2255.

²⁶ *Id.*, 462 U.S. at 102-03, 103 S.Ct. at 2255.

Following the enactment of the NWPA and the *Baltimore Gas* decision, the NRC issued a waste confidence decision in 1984 (49 FR 34658; August 31, 1984), and subsequently updated this decision in 1990 (55 FR 38472; September 18, 1990) and again in 2010 (75 FR 81032; December 23, 2010). In its 1990 revision, the Commission discussed the relationship of Table S-3 with its Waste Confidence decision. Specifically, the Commission noted that the promulgation of Table S-3 was the outgrowth of efforts to generically evaluate the environmental impacts of the operation of a light water reactor and in so doing, that Table S-3 assigned numerical values for environmental costs resulting from uranium fuel cycle activities to support one year of light water reactor operation. The number of curies indicated for spent fuel disposal in Table S-3 reflects the total volume of waste material, not the amount of radioactivity projected to be released from the repository—an issue that is to be addressed in the safety and environmental review for the actual geologic repository itself.

~~Dr. Makhijani's statements regarding the validity of disposal in a bedded salt repository for spent fuel were similar to comments he provided on the NRC's 2010 waste confidence decision update. In response to Dr. Makhijani's comments, the NRC explained that, in considering the disposal of spent nuclear fuel in a geologic repository, its concern was not whether a zero-release assumption will be met, but rather that appropriate public health and safety standards are established and met during the construction and operation of a repository. Such standards would ensure that any releases of radioactive material to the environment are not inimical to public health and safety.²⁷~~

Table S-3 lists environmental data to be used by applicants and the NRC staff for new reactor applications under 10 CFR parts 50 and 52. Specifically, Table S-3 is the basis for

²⁷ ~~Continued Storage GEIS section D.2.49.2, p. D-517.~~

evaluating the environmental effects of the portions of the uranium fuel cycle for light water reactors that occur before new fuel is delivered to the plant and after spent fuel is removed from the plant site. The NRC has made generic determinations that the radiological impacts of the uranium fuel cycle on individuals off-site will remain at or below the Commission's regulatory limits (e.g., the public dose limits set forth in 10 CFR part 20). The NRC described this generic determination and conclusion in the License Renewal GEIS.²⁸ Additionally, as part of the new reactor EISs under 10 CFR part 52 and the License Renewal GEIS, the NRC concluded that the assumptions and methodology used in preparing Table S-3 were conservative enough that the impacts described by the use of Table S-3 would still be bounding. In these EISs, the staff discussed why the contemporary fuel cycle impacts are below those identified in Table S-3 and as such, Table S-3 remains bounding²⁹.

~~Furthermore~~The NRC concludes that Table S-3 is bounding because, as reflected in section 4.12.1.1 of the License Renewal GEIS, industry practice has shown that the current fleet of reactors uses nuclear fuel more efficiently due to higher fuel burnup. Therefore, less uranium fuel per year of reactor operation is required than in the past to generate the same amount of electricity. Fewer spent fuel assemblies per reactor-year are generated, hence, the waste storage and deep geologic repository impacts are lessened. ~~The NRC is not aware of The petitioners have not provided~~ any new information that would cause ~~it the NRC~~ to revisit these conclusions regarding Table S-3. ~~Finally, the NRC has provided ample opportunity for public comment on all new reactor EISs as well as the 2013 revision to the License Renewal GEIS (NUREG-1437, Revision 1) and its related amendments to 10 CFR part 51.~~

²⁸ 2013 GEIS section 4.12.1.1, p. 4-185

²⁹ For example, see the Bell Bend Nuclear Power Plant EIS, NUREG 2179 vol. 1, section 6.1, for a discussion of the NRC determination that Table S-3 remains bounding published in April 2015.

The issue of concern to the NRC in considering the disposal of spent nuclear fuel in a geologic repository has not been whether a zero-release assumption will be met or ultimately the type of environmental media (e.g., bedded salt, basalt, granite, etc.) selected for the repository but rather that the appropriate standards are established and met, thereby ensuring that any releases of radioactive materials to the environment would not be inimical to public health and safety. ~~The Commission has previously made clear in other proceedings that “[a]lthough a repository has not yet been constructed and its safety and environmental acceptability demonstrated, no fundamental breakthrough in science or technology is needed to implement a successful waste disposal program.”³⁰ This focus on whether a fundamental breakthrough in science or technology is needed has guided the Commission’s consideration of the feasibility of the disposal of high level waste and spent nuclear fuel.~~

While the NRC and U.S. Department of Energy have, in the past, concentrated efforts regarding geologic repository research and licensing efforts on a non-bedded salt repository, characterizing the resulting analysis as confirming that there is a risk of “significant” radiation releases and radiation doses from deep geologic disposal is also not valid. The Commission has previously made clear in other proceedings that “[a]lthough a repository has not yet been constructed and its safety and environmental acceptability demonstrated, no fundamental breakthrough in science or technology is needed to implement a successful waste disposal program.”³¹ This focus on whether a fundamental breakthrough in science or technology is needed has guided the Commission’s consideration of the feasibility of the disposal of high level waste and spent nuclear fuel. As stated in Volume 1, Appendix B of the Continued Storage

³⁰ 2010 Waste Confidence Decision Update, 75 FR 81037, 81046 (December 23, 2010) *quoting* the 1984 Waste Confidence Decision, 49 FR 34658, 34667 (August 31, 1984).

³¹ 1984 Waste Confidence Decision, 49 FR 34658, 34667 (August 31, 1984).

GEIS, "the consensus within the scientific and technical community engaged in nuclear waste management is that safe geologic disposal is achievable with currently available technology...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."³²

The issue of concern to the NRC in considering the disposal of spent nuclear fuel in a geologic repository has not been whether a zero-release assumption will be met or ultimately the type of environmental media (e.g., bedded salt, basalt, granite, etc.) selected for the repository but rather that the appropriate standards are established and met. Radiation dose limits for disposal of radioactive materials are typically no greater than 100 mrem/yr (such as the U.S. Environmental Protection Agency (EPA) limits for the proposed Yucca Mountain geologic repository). Although a geologic repository meeting such radiation dose limits is not a "zero" release facility, compliance with these dose limits would provide adequate protection of public health and safety. Given the substantial effort developing repositories, it is reasonable to assume geologic disposal facilities can be developed within a variety of geologic formations and types that would be protective of public health and safety. For example, the NRC-National Academy of Sciences (NAS) study, referred to by Dr. Makhijani, concludes on the overall performance of candidate repositories that "[a]ll radionuclides in unprocessed spent fuel can be adequately contained."³³ ~~Therefore, under NEPA considerations, this is clearly not a risk for significant radiation releases and radiation doses~~ This finding is further as demonstrated by in the NRC's recently ~~comple~~tion of NUREG-1949, "Safety Evaluation Report Related to

³² NUREG-2157, pg. 2 of Appendix B, section B.2.1.

³³ NRC-National Academies of Science Report, "A Study of the Isolation System for Geologic Disposal of Radioactive Wastes," p. 8 and 11.

Disposal of High-Level Radioactive Wastes in a Geologic Repository at Yucca Mountain, Nevada.” In conclusion, the NRC has determined that Table S-3 is still bounding and that the petitioners have not provided new and significant information that requires the NRC to amend Table S-3. there is little, if any, technical or regulatory benefit to updating it, as the purpose of Table S-3 is to inform the preparation of licensee environmental reports submitted with new reactor applications.

The petitioners assert that Table S-3 and Table B-1 are inconsistent with each other

The petitioners assert that Table S-3 and Table B-1 are inconsistent with each other. The petitioners state in PRM-51-30, “[t]he inconsistencies and questions raised by comparing Table S-3 and Table B-1 are unacceptable under NEPA’s standard for clarity and rigor of scientific analysis.” In his comments, Dr. Makhijani stated,

Table S-3 summarizes the NRC’s conclusion that the impacts of spent fuel disposal will be zero, based on the assumption that spent fuel will be disposed of in a bedded salt repository. Proposed Table B-1 contradicts Table S-3 by concluding that long-term doses could be as high as 100 millirem per year. But the NRC does not attempt to reconcile proposed Table B-1 and Table S-3; nor does it address the fact that in the 2008 Draft Waste Confidence Update, it repudiated bedded salt as a geologic medium for a repository.³⁴

The environmental effects of operating uranium fuel cycle facilities including radioactive waste disposal at a geologic repository were evaluated in two NRC documents, WASH-1248 and NUREG-0116. The results of these evaluations were summarized and promulgated as Table S-3 in 10 CFR 51.51(b). Paragraph (a) in 10 CFR 51.51 states:

[E]very environmental report prepared for the construction permit stage or early site permit stage or combined license stage of a light-water- cooled nuclear power reactor, and submitted on or

³⁴ Makhijani Declaration attached to PRM-51-30, p. 9.

fuel and high level waste disposal, this issue is considered Category 1.” Therefore, the Commission, by rule, has determined that a single significance determination is not necessary.

Further, neither the Council on Environmental Quality’s nor the NRC’s regulations for implementing NEPA under 10 CFR part 51 explicitly requires an agency to assign a single significance level to environmental impact issues; CEQ regulations state that “[i]mpacts shall be discussed in proportion to their significance” in the context of preparing environmental impact statements for agency actions.⁴⁰ In conclusion, the petitioners’ ~~request and~~ assertion that NEPA requires an agency to assign a single level of significance to the issue in question ~~is not proven~~ and the information presented does not provide a ~~sufficient~~ basis to amend the NRC’s finding for the issue, “Offsite radiological impacts of spent nuclear fuel and high-level waste disposal,” in Table B-1 in appendix B to subpart A of 10 CFR part 51.

The petitioners assert that license renewal applicants in 10 CFR 51.53(c) and NRC staff in 51.71(d) are excused from addressing spent fuel storage impacts in license renewal environmental reviews

The NRC disagrees with the petitioners’ assertion that the NRC’s regulations in 10 CFR 51.53(c) and 51.71(d) “excuse license renewal applicants and the NRC from addressing spent fuel storage impacts in license renewal cases.” The NRC has determined that the potential environmental impacts of spent fuel storage impacts are of a generic nature and as such, do not need to be re-analyzed for every license renewal action. As mentioned previously, for future reactor license renewal applications the NRC will incorporate the environmental impacts analyzed in the Continued Storage GEIS as well as the License Renewal GEIS into the overall NEPA analysis supporting the licensing decision. †The Supreme Court has upheld the use of

⁴⁰ 40 CFR 1502.2(b).

generic environmental analyses by the NRC.⁴¹ ~~Moreover, As~~ part of the environmental review for each license renewal application, NRC reviews site-specific issues for any new and significant information. In the event that the NRC determines that there is new and significant information concerning the generic spent fuel storage impact finding or any other generic finding, the NRC will consider such information when preparing the supplemental EIS for that particular licensing action and if necessary, will also determine whether the License Renewal GEIS ~~or Continued Storage GEIS~~ should be revised accordingly.

Moreover, the quality of the NRC's environmental analysis of spent fuel storage is not dependent on whether the NRC prepares a site-specific or generic analysis. In conducting both the License Renewal GEIS and the Continued Storage GEIS, the NRC employed assumptions, including those based upon reactor licensee operating experience, that are sufficiently conservative to bound the predicted impacts such that any variances that may occur from site to site are unlikely to result in environmental impact determinations that are greater than those presented in both GEISs.⁴² In addition, recent spent fuel studies (including expedited spent fuel transfer regulatory analysis COMSECY-13-0030 and NUREG-2161) continue to support the findings of the License Renewal GEIS. Though the studies may contain "new" information, the information is not "significant;" ~~for the purposes of the environmental analysis.~~ The NUREG-2161 compared spent fuel pool accident consequences from previous research studies and found that they are of the same magnitude. Finally, the Continued Storage GEIS supports the Commission's original determination that supports use of a generic analysis. ~~Thus there is no technical or regulatory reason to amend these regulations.~~

⁴¹ *Baltimore Gas*, 462 U.S. at 101, 103 S Ct. at 2254 ("[t]he generic method chosen by the agency is clearly an appropriate method of conducting the hard look required by NEPA").

⁴² Statements of Consideration for 1996 (61 FR 28467, 28479-480) and 2013 (78 FR 37282, 37310) License Renewal GEISs.

energy requirements beyond the term of the plant's current license.⁴⁴

As stated in the 2013 License Renewal GEIS,

[t]he purpose and need for the proposed action (issuance of a renewed license) is to provide an option that allows for baseload power generation capability beyond the term of the current nuclear power plant operating license to meet future system generating needs. Such needs may be determined by other energy planning decision-makers, such as State, utility, and, where authorized, Federal agencies (other than NRC). Unless there are findings in the safety review required by the Atomic Energy Act of 1954, as amended (AEA), or the NEPA environmental review that would lead the NRC to reject a license renewal application, the NRC does not have a role in the energy-planning decisions of whether a particular nuclear power plant should continue to operate.⁴⁵

As shown by these statements, it has been the NRC's longstanding position not to consider the need for power or economic costs in making its license renewal decisions. Consideration of the need for power or the economic cost of renewing the operating license of nuclear reactor is beyond the NRC's statutory and regulatory purview; rather such consideration is the responsibility of State and local authorities and where appropriate, Federal agencies such as the Federal Energy Regulatory Commission or the Tennessee Valley Authority. The petitioners' assertion that NRC's regulatory approach of excluding need for power from consideration in re-licensing decisions "cripples" NRC's ability to assess the environmental impacts of storing spent fuel is not new and significant information and thus does not provide a basis for amending the regulations ~~proven and does not provide a sufficient regulatory basis to amend the NRC's regulations.~~

⁴⁴ 61 FR at 28472.

⁴⁵ License Renewal GEIS, NUREG-1437, Revision 1 (2013), Section 1.3, p. 1-3 – 1-4.

“Reasonable assurance” findings not included in proposed section 51.23

In commenting upon the NRC’s proposed Continued Storage rule (78 FR 56776; September 13, 2013), the petitioners asserted that the NRC’s proposal to remove the “reasonable assurance” statement from 10 CFR 51.23(a) was improper. Prior to the promulgation of the Continued Storage final rule (79 FR 56238; September 19, 2014), 10 CFR 51.23(a) stated, in part, that “the Commission believes there is reasonable assurance that sufficient mined geologic repository capacity will be available to dispose of the commercial high-level radioactive waste and spent fuel generated in any reactor when necessary.”⁴⁶ In the final Continued Storage rule, the NRC removed the “reasonable assurance” statement.⁴⁷ The statements of consideration of the final Continued Storage rule explained that 10 CFR 51.23(a) set forth the NRC’s generic determination 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 Continued Storage GEIS). In particular, the statements of consideration noted that,

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.⁴⁸

Consequently, there is no need to retain the “reasonable assurance” statement, which is a safety finding, as 10 CFR 51.23(a) stated only the generic environmental determination and the

⁴⁶ 10 CFR 51.23(a) (2013).

⁴⁷ 79 FR at 56260.

⁴⁸ 79 FR at 56253.

remainder of 10 CFR 51.23 concern~~ed~~ the NRC's NEPA compliance. In this regard, the statements of consideration explained,

The [Continued Storage] 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 [Continued Storage] 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 [Continued Storage] 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 [Continued Storage] 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 [Continued Storage] 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 [Continued Storage] GEIS.⁴⁹

The petitions do not present any ~~technical or regulatory~~ new and significant information that would form a basis to amend 10 CFR 51.23, particularly in light of the September 19, 2014 Continued Storage rulemaking.

The petitioners assert that expedited spent fuel transfer analysis is "new and significant information"

⁴⁹ 79 FR at 56254-55.

approach of using the NRC's Safety Goal Policy Statement of 1986 as a screening metric. The SRM-COMSECY-13-0030 is the agency's determination on this issue.

Nonetheless, the Petitioners contend that NUREG-2161 and COMSECY-13-0030 constitute new and significant information based on those documents' discussion of the severity of the impact of a spent fuel pool accident, sensitivity studies showing that some mitigation measures could be cost beneficial, and the possibility that a reactor accident could impact the likelihood of a spent fuel pool fire. However, none of these sources of information provides a "seriously different picture" of the environmental consequences of spent fuel storage. First, as noted above, the NRC has frequently recognized that the consequences of a spent fuel accident could be large but has determined that the overall risk of spent fuel pool accidents is small in light of the low probability of such an event.⁵⁰ Thus, the petitioners have not shown that magnitude of the consequences of a spent fuel pool accident constitutes new and significant information. Rather, NUREG-2161 and COMSECY-13-0030's recognition that the consequences of a spent fuel pool accident could be large but that the overall risk from such an event is small in light of the low probability of such an event comports with the agency's previous considerations of this issue. Second, while the sensitivity studies may have shown some mitigation measures could be cost-beneficial, they are based on alternate assumptions that do not represent the NRC's analysis of the most likely impacts of a spent fuel pool accident. In any event, petitioners have not shown that any information in these sensitivity studies would undermine the agency's overall conclusion that despite potentially large consequences, the low probability renders the overall risk of a spent fuel pool accident low. Finally, contrary to petitioners' assertions, the NRC has frequently responded to claims that the probability of a

⁵⁰ License Renewal GEIS, NUREG-1437, Revision 1 (2013), Appendix E, p. E-34 to -39.

reactor accident could impact the probability of a spent fuel pool accident and repeatedly found that such a probability is very low.⁵¹

Consequently, the NRC concludes that neither COMSECY-13-0030 nor NUREG-2161 constitutes “new and significant information” requiring the NRC to supplement any of its prior EISs, whether generic or specific. ~~Similarly, the NRC concludes that there is no technical or regulatory basis to amend those of its~~ “regulations that make or rely on findings regarding the environmental impacts of spent fuel storage during reactor operation, including Table B-1 and all regulations approving standardized reactor designs.”

III. Determination of Petitions.

For the reasons cited in Section II of this document, the NRC has concluded that ~~there is no technical or regulatory~~ petitioners have not provided new and significant that would form a basis to amend the NRC regulations identified in the PRM-51-30 and PRM-51-31. Therefore, the NRC is denying PRM-51-30 and PRM-51-31.

Earlier Part 51 PRMs

Several of the regulations identified by the petitioners have been the subject of prior rulemaking petitions (i.e., PRM-51-1, PRM-51-10, PRM-51-12, and PRMs-51-14 to 51-28) and issues similar to those raised by the petitioners were considered by the Commission in these prior petitions, and thus, these issues have been well vetted. The PRM-51-1 petitioner asserts

⁵¹ 73 FR at 46210; 2013 GEIS at E-38; NUREG-2157 at D-438 to D-440; COMSECY-13-0030, Enclosure 1 at 138.

spent fuel pool storage could be handled generically.⁵⁷ The NRC's denial of PRM-51-10 and PRM-51-12 was upheld ~~in court~~ by the Second Circuit Court of Appeals.⁵⁸

Finally, in a series of virtually identical petitions, docketed as PRM-51-14 through PRM-51-28, the petitioners requested that the NRC rescind all regulations that reach generic environmental impact conclusions regarding severe reactor accidents and spent fuel pool accidents, which would include various provisions of Table B-1 and 10 CFR 51.53. The PRM-51-14 through PRM-51-28 petitions were filed shortly after the NRC issued its Near-Term Task Force (NTTF) report, "Recommendations for Enhancing Reactor Safety in the 21st Century, NTTF Review of Insights from the Fukushima Dai-ichi Accident," dated July 12, 2011. The NTTF report provided the NRC staff's recommendations to enhance U.S. nuclear power plant safety following the March 11, 2011, Fukushima accident in Japan. After determining that the NTTF report did not constitute new and significant information and further, that the petitioners had provided no technical or regulatory basis to amend any of the NRC regulations in question, the NRC denied the PRM-51-14 through PRM-51-28 petitions.⁵⁹

IV. Availability of Documents.

The documents identified in the following table are available to interested persons through one or more of the following methods, as indicated. For more information on accessing ADAMS, see the ADDRESSES section of this document.

⁵⁷ *Id.*, at 46206-12.

⁵⁸ *New York v. U.S. Nuclear Regulatory Commission*, 589 F.3d 551 (2nd Cir. 2009).

⁵⁹ 80 FR 40235 (August 12, 2015).

[WCO comments](#)

Diane Curran
Harmon, Curran, Spielberg & Eisenberg, L.L.P.
1726 M Street N.W. Suite 600
Washington, D.C. 20036

Dear Ms. Curran:

I am responding to two Petitions for Rulemaking (PRMs) that you submitted on behalf of 34 environmental organizations (the petitioners). Specifically, this letter responds to the petitioners' December 20, 2013, submittal, which was corrected on January 7, 2014 (Accession No. ML14029A124 in the U.S. Nuclear Regulatory Commissions' Agencywide Documents Access and Management System (ADAMS)), and the petitioners' February 18, 2014, submittal, which was supplemented on May 1, 2014 (ADAMS Accession Nos. ML14071A382 and ML14177A660). These two petitions were docketed by the NRC as PRM-51-30 and PRM-51-31, respectively. In these two petitions, the petitioners requested that the NRC amend its regulations in Part 51 of Title 10 of the *Code of Federal Regulations* (10 CFR) that concern the impacts of spent fuel storage and disposal in environmental reviews for nuclear power plant license renewal applications.

PRM-51-30 was filed as part of the petitioners' comments on the NRC's proposed continued storage rule and that rule's associated generic environmental impact statement (GEIS). PRM-51-31 was filed shortly after the public release of the NRC staff's findings in the expedited spent fuel transfer analysis. The NRC published a notice of receipt in the *Federal Register* for PRM-51-30 on April 21, 2014 (79 FR 22055), and for PRM-51-31 on May 1, 2014 (79 FR 24595), and published an additional notice upon receipt of the supplement to PRM-51-31 on July 24, 2014 (79 FR 42989). PRM-51-31, as supplemented, asserted that recent NRC staff studies and a statement by the former NRC Chairman, constituted "new and significant" information under the National Environmental Policy Act that justified the requests made in PRM-51-31. The NRC did not request public comments on PRM-51-30 or PRM-51-31 because the NRC determined that it had sufficient information for review and the issues have been well-vetted in past NRC proceedings.

The NRC has determined that PRM-51-30 and PRM-51-31 have [not](#) provided [sufficient](#) basis to revise the regulations, as requested. The NRC is therefore denying the two petitions. The reasons for the denial are explained in the enclosed notice, which will be published in the *Federal Register*. Upon publication of the enclosed notice, the NRC will close PRM-51-30 and PRM-51-31.

In PRM-51-31, the petitioners made several non-rulemaking requests; namely, that the NRC should: suspend the effectiveness of Table B-1 of 10 CFR Part 51; suspend the effectiveness, in new reactor licensing proceedings, of all regulations approving standardized reactor designs and all environmental assessments (EAs) approving Severe Accident Mitigation Design Alternatives; republish for public comment, the June 2013 License Renewal GEIS, the

D. Curran

- 2 -

environmental impacts statements for all new reactors, and the EAs for all new reactor design certifications; and suspend all new reactor licensing and license renewal decisions.

In its decision CLI-14-07, dated July 17, 2014 (ADAMS Accession No. ML14195A499), the Commission denied the petitioners' request to suspend all new reactor licensing decisions and license renewal decisions. The NRC is denying the remaining non-rulemaking requests as the NRC has not found ~~no~~ a sufficient basis to amend the regulations identified in PRM-51-3; and as such, there is no reason to grant the non-rulemaking requests. In addition, as described in the enclosed notice, the NRC has determined that the staff studies and the statements by the former NRC ~~e~~C~~h~~airman, which were identified by the petitioners in PRM-51-31, as supplemented, do not constitute new and significant information.

You may direct any questions regarding this matter to Jennifer C. Tobin, by calling 301-415-2328, or by e-mailing Jennifer.Tobin@nrc.gov.

Sincerely,

Annette L. Vietti-Cook
Secretary of the Commission

Enclosure:
Federal Register notice

NOTATION VOTE

RESPONSE SHEET

TO: Annette Vietti-Cook, Secretary

FROM: Commissioner Baran

SUBJECT: SECY-15-0136: DENIAL OF PETITIONS FOR RULEMAKING REQUESTING TO RESCIND REGULATIONS THAT MAKE GENERIC DETERMINATIONS REGARDING THE ENVIRONMENTAL IMPACTS OF SPENT FUEL STORAGE AND DISPOSAL WHEN CONSIDERING NUCLEAR POWER REACTOR LICENSE APPLICATIONS (PRM-51-30 AND PRM-51-31; NRC-2014-0014 AND NRC-2014-0055)

Approved X Disapproved Abstain Not Participating

COMMENTS: Below X Attached X None

I approve the Federal Register Notice and transmittal letter subject to the attached edits.

Entered in STARS

Yes XX

No

Jeff Baran
Signature

2/17/16
Date

JMB Edits

NUCLEAR REGULATORY COMMISSION

10 CFR Part 51

[Docket Nos. PRM-51-30 and PRM-51-31; NRC-2014-0014 and NRC-2014-0055]

Generic Determinations Regarding the Environmental Impacts of Spent Fuel Storage and Disposal when Considering Nuclear Power Reactor License Applications

AGENCY: Nuclear Regulatory Commission.

ACTION: Petitions for rulemaking; denial.

SUMMARY: The U.S. Nuclear Regulatory Commission (NRC) is denying two petitions for rulemaking (PRMs), PRM-51-30 and PRM-51-31, submitted by Diane Curran on behalf of 34 environmental organizations (the petitioners). The petitioners request that the NRC revise certain regulations that concern the impacts of spent fuel storage and disposal in environmental reviews for nuclear power plant license ~~renewal~~ applications. The NRC is denying the petitions because they provide an insufficient basis to consider a rulemaking to revise such regulations.

DATES: The dockets for the petitions for rulemaking, PRM-51-30 and PRM-51-31, are closed on **[INSERT DATE OF PUBLICATION IN THE *FEDERAL REGISTER*]**.

ADDRESSES: Please refer to Docket ID NRC-2014-0014 and NRC-2014-0055, respectively, when contacting the NRC about the availability of information regarding these petitions. You can access publicly-available documents related to the petition using any of the following methods:

petitioners filed a corrected version of the first petition on January 7, 2014. The NRC published a notice of receipt of the first petition in the *Federal Register* (FR) on April 21, 2014, and assigned it Docket No. PRM-51-30 (79 FR 22055).

The petition requests that the NRC revise certain regulations in 10 CFR part 51 that concern the impacts of spent fuel storage and disposal in environmental reviews for nuclear power plant initial licensing and license renewal applications. The NRC implements its responsibilities under the National Environmental Policy Act (NEPA) through its 10 CFR part 51 regulations. The petitioners assert that the NRC's 10 CFR part 51 regulations are "balkanized" and "disparate and inconsistent," and that these regulations should be made into a "cohesive and consistent whole." The petitioners identified the following NRC regulations as being within the scope of their request: 10 CFR 51.53(c),² 10 CFR 51.51 (Table S-3),³ 10 CFR 51.71(d),⁴ and Table B-1⁵ in appendix B to subpart A of 10 CFR part 51 (Table B-1), as well as the NRC's proposed amendments to 10 CFR 51.23, as set forth in its September 13, 2013, proposed rule (77 FR 56776).⁶ ~~Except for 10 CFR 51.23 and Table S-3, these regulations concern the~~

² Section 51.53 is entitled "Post-construction environmental reports." Paragraph (c) describes the contents of the required environmental report submitted by an applicant in support of its application to renew a nuclear power plant's operating license.

³ Table S-3 is entitled "Uranium Fuel Cycle Environmental Data" and is set forth at 10 CFR 51.51. Table S-3 shows the maximum effect per annual fuel requirement and is the basis for evaluating the contribution of the environmental effects of uranium mining and milling, the production of uranium hexafluoride, isotopic enrichment, fuel fabrication, reprocessing of irradiated fuel, transportation of radioactive materials and management of low-level wastes and high-level wastes related to uranium fuel cycle activities to the environmental costs of licensing the nuclear power reactor.

⁴ Section 51.71 is entitled "Draft environmental impact statement—contents." Paragraph (d) describes the analysis required to be included in the draft environmental impact statement (EIS). For license renewal actions, the supplemental draft EIS relies on the findings and other supporting information in NUREG-1437, Revision 1, "Generic Environmental Impact Statement for License Renewal of Nuclear Plants—Final Report" (2013).

⁵ Table B-1 is entitled "Summary of Findings on NEPA Issues for License Renewal of Nuclear Power Plants."

⁶ The proposed amendments to 10 CFR 51.23 were adopted in a final rulemaking (79 FR 56238; September 19, 2014). Section 51.23 is entitled "Environmental impacts of continued storage of spent nuclear fuel beyond the licensed life for operation of a reactor" and states 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 Continued Storage GEIS]" (10 CFR 51.23(a)).

~~environmental review undertaken by the NRC staff when considering an application for the renewal of a nuclear power plant's operating license.~~

Sections 51.53(c) and a portion of section 51.71(d) are premised upon NUREG-1437, "Generic Environmental Impact Statement for License Renewal of Nuclear Plants," an environmental impact statement (EIS) initially published in May 1996 and then revised and updated in June 2013 (License Renewal GEIS).⁷ The License Renewal GEIS describes the potential environmental impacts of renewing the operating license of a nuclear power plant for an additional 20 years. The NRC classifies the license renewal issues described in the License Renewal GEIS as either generic or site-specific. Generic issues concern environmental impacts that are common to all nuclear power plants. Site-specific issues are addressed initially by the license renewal applicant (i.e., a nuclear power plant licensee seeking a renewal of its operating license under the NRC's license renewal regulations in 10 CFR part 54) in its environmental report, which is required by 10 CFR 51.45, and then by the NRC, in its supplemental environmental impact statement (SEIS) prepared for each license renewal application.⁸ For any given license renewal action, the License Renewal GEIS together with the site-specific SEIS documents the NRC's NEPA analysis.

In Table B-1, generic issues are designated as "Category 1" issues and site-specific issues are designated as "Category 2" issues. Absent new and significant information, Category 1 issues are not required to be analyzed for an applicant's environmental report or the

⁷ The current version of the License Renewal GEIS is NUREG-1437, Revision 1.

⁸ Section 51.95(c) requires, for the consideration of potential environmental impacts of renewing a nuclear power plant's operating license, that the NRC prepare an environmental impact statement that is a supplement to the Commission's NUREG-1437, Rev. 1, "Generic Environmental Impact Statement for License Renewal of Nuclear Plants" (June 2013).

staff's SEIS. Table B-1 codifies the findings of the License Renewal GEIS and is wholly concerned with nuclear power plant license renewal.⁹

The purpose of Table S-3 is to support the environmental review for new reactor applications. In addition to considering the environmental impacts of the construction and operation of a commercial nuclear power reactor, the NRC considers the contributions from the uranium fuel cycle activities.¹⁰ Table S-3 identifies the uranium fuel cycle impacts, generically, for new reactor applications.

The petitioners assert that the NRC's proposed amendments to 10 CFR 51.23, as set forth in the NRC's proposed rule of September 13, 2013 (77 FR 56776), are "confusing" to the extent that the proposed continued storage regulation included safety findings, which should be placed in either 10 CFR parts 50 or 52, and because the proposed regulation no longer includes the "reasonable assurance" finding. The petitioners also assert that Table S-3 has been "repudiated" and that it is inconsistent with the findings in Table B-1. In addition, the petitioners assert that Table B-1 does not include a finding as to whether offsite spent fuel disposal impacts are significant or not.

The petitioners further assert that 10 CFR 51.53(c) and 51.71(d) "excuse" license renewal applicants and the NRC, respectively, from addressing spent fuel storage impacts in individual license renewal cases. As both regulatory provisions are premised upon the findings in the License Renewal GEIS, the petitioners, essentially, object to the finding that impacts of spent fuel storage during the license renewal period are a Category 1, or generic issue, and have a "small" impact. Finally, the petitioners assert that the economic costs of spent fuel

⁹ Table B-1 was amended to reflect the June 2013 GEIS update. The NRC rule amending Table B-1 and other 10 CFR part 51 regulations was published in the FR on June 20, 2013 (78 FR 37282).

¹⁰ Uranium fuel cycle activities include "uranium mining and milling, the production of uranium hexafluoride, isotopic enrichment, fuel fabrication, spent fuel storage and disposal" (44 FR 45362; August 2, 1979).

storage and disposal should be incorporated into reactor cost-benefit analyses and that the need for power should be considered in license renewal decisions.

PRM-51-31

The petitioners filed their second petition on February 18, 2014. The petitioners' second petition asserts that COMSECY-13-0030, "Staff Evaluation and Recommendation for Japan Lessons-Learned Tier 3 Issue on Expedited Transfer of Spent Fuel"¹¹ (the expedited spent fuel transfer analysis), and NUREG-2161, "Consequence Study of a Beyond-Design-Basis Earthquake Affecting the Spent Fuel Pool for a U.S. Mark I Boiling-Water Reactor,"¹² constitute new and significant information. The petitioners further request that the NRC "duly modify NRC's regulations that make or rely on findings regarding the environmental impacts of spent fuel storage during reactor operation, including Table B-1 and all regulations approving standardized reactor designs."

The NRC published a notice of receipt of the second petition in the FR on May 1, 2014, and assigned it Docket No. PRM-51-31 (79 FR 24595). The petitioners subsequently submitted an "amended petition" for rulemaking on June 26, 2014, seeking to add "the observations made by Chairman Macfarlane in her dissenting comments" on the expedited transfer of spent fuel. The petitioners assert that the former Chairman's dissenting vote on the expedited spent fuel transfer proceeding provides "new and significant" information that would affect the NRC's environmental reviews ~~in license renewal~~. The NRC treated the "amended petition" as a

¹¹ COMSECY-13-0030, "Memorandum from Mark Satorius, Executive Director for Operations, to NRC Commissioners Re: Staff Evaluation and Recommendations for Lessons Learned Tier 3 Issue on Expected Transfer of Spent Fuel" (Nov. 12, 2013), and documents cited therein.

¹² NUREG-2161, "Consequence Study of a Beyond-Design-Basis Earthquake Affecting the Spent Fuel Pool for a U.S. Mark I Boiling-Water Reactor."

supplement to the February 18, 2014, petition and re-noticed the petition, along with the supplement, for informational purposes only (79 FR 42989; July 24, 2014).

II. Reasons for Denial.

The NRC is denying the petitions because the petitioners have not presented a sufficient basis to amend the regulations. Petitioners largely contend that they present new and significant information that requires the agency to revisit previous NEPA analyses that form the basis for the challenged regulations. Under Supreme Court and Commission precedent, information that provides a “seriously different picture” of the environmental consequences than previously considered is new and significant information.¹³ As explained below, the NRC does not find that the Petitioners’ information provides a “seriously different picture” of the environmental consequences of spent fuel storage. As a result, the ~~The~~ NRC determined that the current technical basis for those regulations challenged by the petitioners remains sound.

The petitioners assert that the NRC’s environmental review regulations are “balkanized”

The petitioners assert that “[t]he NRC’s piecemeal and disjointed approach to the consideration of spent fuel storage and disposal impacts violates the NEPA principle that an agency may not segment its analysis in a manner that conceals the environmental significance of its action.” Segmentation refers to instances where a Federal agency splits a project into smaller components to avoid preparing an EIS, or where an agency does not consider related

¹³ Marsh v. Oregon Natural Resources Council, 490 U.S. 360 (1989).

actions in a single EIS.¹⁴ The NRC does not agree that its approach to the consideration of spent fuel storage and disposal impacts is piecemeal and disjointed or that NRC's environmental review regulations in 10 CFR part 51 are "balkanized" or result in NEPA segmentation.

While the petitioners have pointed to some instances where the agency relies on generic analyses as part of its overall NEPA review for certain licensing actions, the petitioners have not shown any case where the NRC artificially divided a licensing action into smaller components. Rather, as discussed below, the NRC fully considers the environmental impacts of each licensing action through a combination of site-specific EISs and, where appropriate, generic EISs. ~~Although addressed in two generic EISs prepared by the NRC (i.e., the License Renewal GEIS and the Continued Storage GEIS), spent fuel storage and disposal impacts are reassessed by the NRC staff during each new reactor and license renewal environmental review to determine if there is new and significant information that could alter the generic conclusions.~~ The use of generic analyses by the NRC to support licensing decisions has been upheld by the United States Supreme Court.¹⁵

In addition to the License Renewal GEIS and the Continued Storage GEIS, the NRC prepares EISs for all new reactor and license renewal applications. Within the umbrella of both its generic and site-specific EISs, the NRC adequately considers the spent fuel storage impacts of its licensing decisions. The EISs for new nuclear power reactors describe the environmental

¹⁴ *Delaware Riverkeeper Network v. FERC*, 753 F.3d 1304, 1313 (D.C. Cir. 2014) ("An agency impermissibly 'segments' NEPA review when it divides connected, cumulative, or similar federal actions into separate projects and thereby fails to address the true scope and impact of the activities that should be under consideration); see Council on Environmental Quality (CEQ) regulation, 10 CFR 1508.25.

¹⁵ In a 1983 decision concerning a challenge to Table S-3, the Supreme Court stated that "[t]he generic method chosen by the agency is clearly an appropriate method of conducting the hard look required by NEPA." *Baltimore Gas v. NRDC*, 462 U.S. 87, 101, 103 S Ct. 2246, 2254 (1983).

impacts from the onsite storage and management of spent nuclear fuel and offsite disposal based on 40 years of reactor operation, which is the maximum, initial term of a reactor license.¹⁶ The License Renewal GEIS describes the environmental impacts from the onsite storage and offsite disposal of spent nuclear fuel generated during an additional 20 years of reactor operation (i.e., 20 years beyond the expiration of the initial license).¹⁷ The Continued Storage GEIS describes the environmental impacts of the continued storage of spent nuclear fuel beyond the licensed life for operation of a reactor. Although addressed in two generic EISs prepared by the NRC (i.e., the License Renewal GEIS and the Continued Storage GEIS), Additionally, spent fuel storage and disposal impacts are reassessed by the NRC staff during each new reactor and license renewal environmental review to determine if there is new and significant information that could alter the generic conclusions.

Moreover, the underlying technical bases for the consideration of spent fuel storage and disposal impacts in EISs for new nuclear power reactors and the License Renewal GEIS are the same. Combined with the Continued Storage GEIS, these NEPA documents provide a complete analysis of spent fuel storage and disposal impacts. The regulations in 10 CFR part 51 are both premised upon, and support, this NEPA framework of generic EISs supported by site-specific EISs.

The NRC's approach improves the effectiveness of environmental reviews by generically resolving issues that are not substantially different from one proceeding to another, while still ensuring that those impacts are considered in subsequent licensing actions. The NRC conducts environmental and safety reviews for the issuance of licenses for the operation of nuclear power

¹⁶ 10 CFR 52.104.

¹⁷ 10 CFR 54.31.

plants including the onsite storage of spent nuclear fuel. The NRC has also conducted separate environmental and safety reviews for the issuance of specific licenses for the storage of spent nuclear fuel in independent spent fuel storage installations (ISFSIs).¹⁸ With respect to spent fuel disposal, the U.S. Department of Energy (DOE) is responsible for developing an EIS for spent fuel disposal in a geologic repository. In addition, the NRC has previously determined the potential radiological effects of offsite spent fuel disposal in a permanent repository or some other permanent disposal scenario while evaluating the environmental effects of the uranium fuel cycle.¹⁹

The consideration of spent fuel storage and disposal impacts builds upon the knowledge gained from previous environmental reviews and associated rulemakings and is consistent throughout the NRC's regulations in that the NRC relies on the same technical bases to make impact determinations. The only differences are in the timeframes in which these impacts occur and whether the impacts occur during continued onsite storage or offsite disposal. In each of these regulatory situations, the technical bases remain the same.

Tables S-3 and B-1 in the NRC's regulations were developed at separate times for different purposes but have common technical bases. The 2014 continued storage rule, and its supporting Continued Storage GEIS, updated the NRC's NEPA findings in Table B-1 for the issues, "Onsite storage of spent nuclear fuel" and "Offsite radiological impacts of spent nuclear fuel and high-level waste disposal." In doing so, the NRC effectively incorporated the NEPA analysis of continued spent fuel storage into ~~the new reactor, license renewal, and ISFSI impact analyses. For new reactors, 10 CFR 51.23(b) directs that the impact determinations in~~

¹⁸ NRC regulation, 10 CFR 72.3, defines an ISFSI as "a complex designed and constructed for the interim storage of spent nuclear fuel."

¹⁹ See WASH-1248, "Environmental Survey of the Uranium Fuel Cycle," April 1974, and NUREG-0116, "Environmental Survey of the Reprocessing and Waste Management Portions of the LWR Fuel Cycle," October 1976.

NUREG-2157 shall be deemed incorporated into the associated EIS. And for licensing actions for which an environmental assessment (EA) is being prepared (such as an ISFSI built under a specific license at a site occupied by a nuclear power reactor), 10 CFR 51.30(b) directs that the impacts determinations in NUREG-2157 regarding the continued storage of spent fuel shall be considered, if such impacts are relevant to the proposed action.

For a given future reactor licensing action that relies on the Continued Storage GEIS and rule, the NRC will incorporate the environmental impacts analyzed in the Continued Storage GEIS into the overall licensing decision. The NRC's NEPA review for each licensing action that involves either a new reactor or a license renewal application will fully account for the reasonably foreseeable impacts of spent fuel storage and disposal, including, where applicable, the impacts that have been analyzed generically in the Continued Storage GEIS and License Renewal GEIS. The NRC concludes that its 10 CFR Part 51 environmental review regulations are not "~~balkanized,~~"inappropriately segmented and are consistent. Thus, there is no ~~technical or regulatory~~ reason to amend these regulations.

The petitioners assert that Table S-3 has been repudiated

The petitioners' expert, Dr. Arjun Makhijani, in a declaration attached to the petitioners' January 2014 submission, states that the Table S-3 finding regarding the impacts of spent fuel disposal is no longer valid because the finding is based upon the disposal of spent fuel in a bedded salt repository and that such disposal would result in zero releases of radioactive effluents, and therefore, zero radiological dose. Dr. Makhijani asserts that

[m]oreover, we note that Table S-3 at 10 CFR 51.51 is invalid for estimating high-level waste disposal impacts. Among other things, its underlying assumption of disposal in a bedded salt repository for spent fuel disposal was repudiated by the NRC itself

in 2008. ~~Therefore, the NRC must prepare a new disposal impact analysis in the context of its waste confidence decision.~~²⁰

The petitioners, through Dr. Makhijani's declaration, assert that the NRC must prepare a new analysis concerning the impacts of spent fuel disposal.

Dr. Makhijani's statement evaluates Table S-3 in isolation and does not consider later developments in the NRC's regulatory policy and Supreme Court precedent. The Atomic Energy Commission, the predecessor agency of the NRC, promulgated the initial version of Table S-3 on April 22, 1974 (39 FR 14188). Since the promulgation of Table S-3, the Nuclear Waste Policy Act of 1982 (NWPA) adopted deep geologic disposal as the nation's solution for spent fuel disposal. ~~In addition~~ Nonetheless, in 1983, the United States Supreme Court, in its *Baltimore Gas & Elec. Co. v. NRDC* decision,²¹ upheld both Table S-3 and the approach taken by the NRC in using Table S-3 data in individual licensing proceedings. In *Baltimore Gas*, the Supreme Court recognized that the purpose of Table S-3 was "not to evaluate or select the most effective long-term waste disposal technology or develop site selection criteria," ~~but "to analyze intensively the most probable long-term waste disposal method."~~²² ~~In this regard, t~~The Court noted that the NRC's intent, as stated in the 1979 rule revising Table S-3 (44 FR 45362; August 2, 1979), was to estimate the impact of the long-term waste disposal method conservatively.²³ This conservative analysis included the NRC's use of the zero release assumption.²⁴ The Court also noted that other aspects of Table S-3 were premised upon the

²⁰ ~~"Declaration of Dr. Arjun Makhijani Regarding the Waste Confidence Proposed Rule and Draft Generic Environmental Impact Statement," attached to PRM-51-30 (paragraph 2.8 on p. 6).~~

²¹ *Baltimore Gas v. NRDC*, 462 U.S. 87, 103 S.Ct. 2246 (1983).

²² *Id.*, 462 U.S. at 102, 103 S.Ct. at 2254-55.

²³ *Id.*, 462 U.S. at 102, 103 S.Ct. at 2255.

²⁴ *Id.* ("The zero-release assumption cannot be evaluated in isolation. Rather, it must be assessed in relation to the limited purpose for which the Commission made the assumption").

assumption that “all volatile materials in the fuel would escape to the environment” prior to the sealing of the geologic repository; this assumption balanced the zero-release assumption, an approach that the Court found acceptable.²⁵ In addition to concluding that it was “not unreasonable” for the NRC to employ the zero release assumption, the Court stated that “the zero-release assumption is but a single figure in an entire Table, which the Commission expressly designed as a risk-averse estimate of the environmental impact of the fuel cycle ... [a] reviewing court should not magnify a single line item beyond its significance as only part of a larger Table.”²⁶

Following the enactment of the NWPA and the *Baltimore Gas* decision, the NRC issued a waste confidence decision in 1984 (49 FR 34658; August 31, 1984), and subsequently updated this decision in 1990 (55 FR 38472; September 18, 1990) and again in 2010 (75 FR 81032; December 23, 2010). In its 1990 revision, the Commission discussed the relationship of Table S-3 with its Waste Confidence decision. Specifically, the Commission noted that the promulgation of Table S-3 was the outgrowth of efforts to generically evaluate the environmental impacts of the operation of a light water reactor and in so doing, that Table S-3 assigned numerical values for environmental costs resulting from uranium fuel cycle activities to support one year of light water reactor operation. The number of curies indicated for spent fuel disposal in Table S-3 reflects the total volume of waste material, not the amount of radioactivity projected to be released from the repository—an issue that is to be addressed in the safety and environmental review for the actual geologic repository itself.

~~Dr. Makhijani's statements regarding the validity of disposal in a bedded salt repository for spent fuel were similar to comments he provided on the NRC's 2010 waste confidence~~

²⁵ *Id.*, 462 U.S. at 103, 103 S.Ct. at 2255.

²⁶ *Id.*, 462 U.S. at 102-03, 103 S.Ct. at 2255.

~~decision update. In response to Dr. Makhijani's comments, the NRC explained that, in considering the disposal of spent nuclear fuel in a geologic repository, its concern was not whether a zero-release assumption will be met, but rather that appropriate public health and safety standards are established and met during the construction and operation of a repository. Such standards would ensure that any releases of radioactive material to the environment are not inimical to public health and safety.²⁷~~

Table S-3 lists environmental data to be used by applicants and the NRC staff for new reactor applications under 10 CFR parts 50 and 52. Specifically, Table S-3 is the basis for evaluating the environmental effects of the portions of the uranium fuel cycle for light water reactors that occur before new fuel is delivered to the plant and after spent fuel is removed from the plant site. The NRC has made generic determinations that the radiological impacts of the uranium fuel cycle on individuals off-site will remain at or below the Commission's regulatory limits (e.g., the public dose limits set forth in 10 CFR part 20). The NRC described this generic determination and conclusion in the License Renewal GEIS.²⁸ Additionally, as part of the new reactor EISs under 10 CFR part 52 and the License Renewal GEIS, the NRC concluded that the assumptions and methodology used in preparing Table S-3 were conservative enough that the impacts described by the use of Table S-3 would still be bounding. In these EISs, the staff discussed why the contemporary fuel cycle impacts are below those identified in Table S-3 and as such, Table S-3 remains bounding²⁹.

~~Furthermore~~The NRC concludes that Table S-3 remains bounding because, as reflected in section 4.12.1.1 of the License Renewal GEIS, industry practice has shown that the current

²⁷ ~~Continued Storage GEIS section D.2.49.2, p. D-517.~~

²⁸ 2013 GEIS section 4.12.1.1, p. 4-185

²⁹ For example, see the Bell Bend Nuclear Power Plant EIS, NUREG 2179 vol. 1, section 6.1, for a discussion of the NRC determination that Table S-3 remains bounding published in April 2015.

fleet of reactors uses nuclear fuel more efficiently due to higher fuel burnup. Therefore, less uranium fuel per year of reactor operation is required than in the past to generate the same amount of electricity. Fewer spent fuel assemblies per reactor-year are generated, hence, the waste storage and deep geologic repository impacts are lessened. The ~~NRC is not aware of petitioners have not provided~~ any new information that would cause ~~it the NRC~~ to revisit these conclusions regarding Table S-3. ~~Finally, the NRC has provided ample opportunity for public comment on all new reactor EISs as well as the 2013 revision to the License Renewal GEIS (NUREG-1437, Revision 1) and its related amendments to 10 CFR part 51.~~

~~The issue of concern to the NRC in considering the disposal of spent nuclear fuel in a geologic repository has not been whether a zero release assumption will be met or ultimately the type of environmental media (e.g., bedded salt, basalt, granite, etc.) selected for the repository but rather that the appropriate standards are established and met, thereby ensuring that any releases of radioactive materials to the environment would not be inimical to public health and safety. The Commission has previously made clear in other proceedings that "[a]lthough a repository has not yet been constructed and its safety and environmental acceptability demonstrated, no fundamental breakthrough in science or technology is needed to implement a successful waste disposal program."³⁰ This focus on whether a fundamental breakthrough in science or technology is needed has guided the Commission's consideration of the feasibility of the disposal of high level waste and spent nuclear fuel.~~

While the NRC and ~~U.S. Department of Energy~~DOE have, in the past, concentrated efforts regarding geologic repository research and licensing efforts on a non-bedded salt repository, characterizing the resulting analysis as confirming that there is a risk of "significant"

³⁰ ~~2010 Waste Confidence Decision Update, 75 FR 81037, 81046 (December 23, 2010) quoting the 1984 Waste Confidence Decision, 49 FR 34658, 34667 (August 31, 1984).~~

radiation releases and radiation doses from deep geologic disposal is ~~also not valid~~accurate.
~~As stated in Volume 1, Appendix B of the Continued Storage GEIS, "the consensus within the scientific and technical community engaged in nuclear waste management is that safe geologic disposal is achievable with currently available technology...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."~~³⁴ The issue of concern to the NRC in considering the disposal of spent nuclear fuel in a geologic repository has not been whether a zero-release assumption will be met or ultimately the type of environmental media (e.g., bedded salt, basalt, granite, etc.) selected for the repository but rather that the appropriate standards are established and met, thereby ensuring that any releases of radioactive materials to the environment would not be inimical to public health and safety.

Radiation dose limits for disposal of radioactive materials are typically no greater than 100 mrem/yr (such as the U.S. Environmental Protection Agency (EPA) limits for the proposed Yucca Mountain geologic repository). Although a geologic repository meeting such radiation dose limits is not a "zero" release facility, compliance with these dose limits would provide adequate protection of public health and safety. Given the substantial effort developing repositories, it is reasonable to assume geologic disposal facilities can be developed within a variety of geologic formations and types that would be protective of public health and safety. For example, the NRC-National Academy of Sciences (NAS) study, referred to by Dr. Makhijani, concludes on the overall performance of candidate repositories that "[a]ll radionuclides in

³⁴ NUREG-2157, pg. 2 of Appendix B, section B.2.1.

unreprocessed spent fuel can be adequately contained.”³² ~~Therefore, under NEPA considerations, this is clearly not a risk for significant radiation releases and radiation doses as demonstrated by the NRC’s recent completion of NUREG-1949, “Safety Evaluation Report Related to Disposal of High-Level Radioactive Wastes in a Geologic Repository at Yucca Mountain, Nevada.”~~ In conclusion, the NRC has determined that Table S-3 is still bounding and that the petitioners have not provided new and significant information that requires the NRC to amend Table S-3. ~~there is little, if any, technical or regulatory benefit to updating it, as the purpose of Table S-3 is to inform the preparation of licensee environmental reports submitted with new reactor applications.~~

The petitioners assert that Table S-3 and Table B-1 are inconsistent with each other

The petitioners assert that Table S-3 and Table B-1 are inconsistent with each other. The petitioners state in PRM-51-30, “[t]he inconsistencies and questions raised by comparing Table S-3 and Table B-1 are unacceptable under NEPA’s standard for clarity and rigor of scientific analysis.” In his comments, Dr. Makhijani stated,

Table S-3 summarizes the NRC’s conclusion that the impacts of spent fuel disposal will be zero, based on the assumption that spent fuel will be disposed of in a bedded salt repository. Proposed Table B-1 contradicts Table S-3 by concluding that long-term doses could be as high as 100 millirem per year. But the NRC does not attempt to reconcile proposed Table B-1 and Table S-3; nor does it address the fact that in the 2008 Draft Waste Confidence Update, it repudiated bedded salt as a geologic medium for a repository.³³

³² NRC-National Academies of Science Report, “A Study of the Isolation System for Geologic Disposal of Radioactive Wastes,” p. 8 and 11.

³³ Makhijani Declaration attached to PRM-51-30, p. 9.

The environmental effects of operating uranium fuel cycle facilities including radioactive waste disposal at a geologic repository were evaluated in two NRC documents, WASH-1248 and NUREG-0116. The results of these evaluations were summarized in and promulgated as Table S-3 in 10 CFR 51.51(b). Paragraph (a) in 10 CFR 51.51 states:

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

The environmental effects or issues summarized in Table S-3 include: land use; water consumption and thermal effluents; radioactive releases; burial of transuranic, high-level and low-level radioactive wastes; and radiation doses from transportation and occupational exposures. The contributions in Table S-3 for reprocessing, waste management, and transportation of wastes are maximized for either of the two fuel cycles (i.e., a fuel cycle that includes spent fuel reprocessing and one that does not)—the cycle that results in the greater environmental impact, and thus the most conservative analysis, is used. The environmental impact values are expressed in terms normalized to show the potential impacts attributable to processing the fuel required for the operation of a 1,000-MWe nuclear power plant for one year at an 80 percent availability factor to produce about 800 MW-yr (0.8 GW-yr) of electricity. This normalization is referred to as one reference reactor year. For each environmental

consideration, Table S-3 presents a result that has been integrated over the entire uranium fuel cycle except during reactor operations.³⁴ The environmental impacts of reactor operations are addressed in the EIS prepared for each individual reactor licensing action (i.e., an EIS for a new reactor licensing application or a SEIS for a license renewal application).

Although certain fuel cycle operations and fuel management practices have changed over the years, the assumptions and methodology used in preparing Table S-3 were, and continue to be, conservative enough that the impacts described in Table S-3 are still bounding. In similar fashion, the NRC assessed the generic environmental impacts of renewing the operating license for a nuclear power plant in the License Renewal GEIS. Table B-1 summarizes the Commission's findings on the scope and magnitude of the environmental effects of renewing the operating license for a nuclear power plant, based on technical bases documented in the 2013 update of the License Renewal GEIS. Subject to an evaluation of those Category 2 issues, which require further site-specific analysis, and the identification of possible new and significant information for any Category 1 or Category 2 issue, Table B-1 represents the analysis of the environmental impacts associated with the renewal of any operating license and is to be used in accordance with 10 CFR 51.95(c). On a 10-year cycle, the Commission intends to review the findings in Table B-1 and update them if necessary. The latest review and update was completed in 2013.

Both the License Renewal GEIS and Table B-1 incorporate Table S-3 by reference.³⁵ Tables S-3 and B-1 were developed at separate times for different purposes. However, the technical bases for the consideration of spent fuel storage and disposal impacts for both tables

³⁴ The only exception is that the waste quantities listed under the entry called "solids (buried onsite)" also includes wastes generated at the reactor.

³⁵ Table B-1 references Table S-3 under the "Uranium Fuel Cycle" section of the table.

are the same, and as such, the tables are consistent with each other. The impact of the spent nuclear fuel disposal finding in Table B-1 (i.e., "Offsite radiological impacts of spent nuclear fuel and high-level waste disposal") is consistent with the solid waste disposal information presented in Table S-3 as the findings in Table B-1 could not be reached without the environmental effects evaluations conducted in WASH-1248 and NUREG-0116, which are summarized in Table S-3. The NRC concludes that Tables B-1 and S-3 are consistent with each other and there is no technical or regulatory reason to amend either ~~or both~~ tables.

No significance determination for "off-site spent fuel disposal" in Table B-1

The petitioners assert that Table B-1, which codifies the findings of the License Renewal GEIS, does not include a finding as to whether the impacts of spent fuel disposal are significant or not. The "significance determination" in NEPA is made by an agency in determining whether it is necessary to prepare an EIS for a given proposed action.³⁶ With respect to the environmental review of reactor license renewal applications, the NRC has already prepared a generic EIS, the License Renewal GEIS. In addition, for each site-specific license renewal action, the NRC prepares a SEIS. Therefore, the lack of a finding as to whether the impacts of spent fuel disposal are "significant" or "not significant" is irrelevant, as the NRC has already satisfied the "significance determination" by preparing a generic EIS and by its regulatory requirement to prepare a site-specific EIS for each reactor license renewal application it considers.

³⁶ *Lower Alloways Creek Tp. V. Public Service Elec. & Gas Co.*, 687 F.2d 732, 740 (3rd Cir. 1987) ("agency must undertake a comprehensive assessment of the expected effects of a proposed action before it can determine whether that action is 'significant' for NEPA purposes ...[i]f, however, it is clear the human environment will be 'significantly' affected, then a full-scale EIS is mandatory"); *Blue Mountains Biodiversity Project v. Blackwood*, 161 F.3d 1208, 1211-14, and 1216 (9th Cir. 1998) (Forest Service made clear error of judgment in its decision to prepare an environmental assessment, rather than an environmental impact statement); see also Mandelker, NEPA Law and Litigation, 2d, §§ 8.48-8.58.

the licensed life for operation of a reactor. In making conforming changes to the Table B-1 entry for the issue "Offsite radiological impacts of spent nuclear fuel and high-level waste disposal," the final rule restored the Category 1 designation and references the existing radiation protection standards for Yucca Mountain instead of making a single impact finding.

The NRC's practice, once it has determined to prepare an EIS, has been to assign a significance level to most potential environmental impacts, by resource area or environmental issue, arising from the proposed action. These levels are "Small, Moderate, and Large." The assigning of these levels to any given impact is not required by law; it is solely a matter of NRC practice. Further, NRC does not assign such a level to every resource area or environmental issue covered by a given EIS. The NRC only assigns a single significance level for a generic issue where it is meaningful and appropriate to do so when considering both the context and intensity of a potential environmental impact.³⁸

In this regard, the NRC has never assigned a single impact significance level to the issue of "Offsite radiological impacts of spent nuclear fuel and high-level waste disposal." Although the status of a repository, including a repository at Yucca Mountain, remains uncertain and beyond the control of the NRC, the NRC has adopted EPA's radiation protection standards (40 CFR part 197) for Yucca Mountain because they are the current standard for ensuring that the ultimate disposal of spent nuclear fuel will present no undue risk to public health and safety. As discussed in the Continued Storage GEIS, it is reasonable to believe that wherever a geologic repository is ultimately sited, ~~the NRC's and EPA's environmental and~~ radiological protection standards comparable to those established for Yucca Mountain would ~~apply~~ be issued if necessary. Given these considerations, the Commission's narrative finding in Table B-1 with

³⁸ See CEQ regulation 40 CFR 1508.27, which defines the term "significantly," in relation to both "context" and "intensity."

respect to the issue of offsite disposal is likewise appropriate. That finding states “[t]he 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.” Therefore, the Commission, by rule, has determined that a single significance determination is not necessary.

Further, neither the Council on Environmental Quality’s nor the NRC’s regulations for implementing NEPA under 10 CFR part 51 explicitly require an agency to assign a single significance level to environmental impact issues; CEQ regulations state that “[i]mpacts shall be discussed in proportion to their significance” in the context of preparing environmental impact statements for agency actions.³⁹ In conclusion, the petitioners’ ~~request and~~ assertion that NEPA requires an agency to assign a single level of significance to the issue in question ~~is not proven~~ and the information presented does not provide a sufficient basis to amend the NRC’s finding for the issue, “Offsite radiological impacts of spent nuclear fuel and high-level waste disposal,” in Table B-1 in appendix B to subpart A of 10 CFR part 51.

The petitioners assert that license renewal applicants in 10 CFR 51.53(c) and NRC staff in 51.71(d) are excused from addressing spent fuel storage impacts in license renewal environmental reviews

The NRC disagrees with the petitioners’ assertion that the NRC’s regulations in 10 CFR 51.53(c) and 51.71(d) “excuse license renewal applicants and the NRC from addressing spent fuel storage impacts in license renewal cases.” The NRC has determined that the potential

³⁹ 40 CFR 1502.2(b).

environmental impacts of spent fuel storage impacts are of a generic nature and as such, do not need to be re-analyzed for every license renewal action. As mentioned previously, for a given future reactor license renewal that relies on the Continued Storage and License Renewal GEIS's, the NRC will incorporate the environmental impacts analyzed in the Continued Storage GEIS as well as the License Renewal GEIS into the overall NEPA analysis supporting the licensing decision. ~~†~~The Supreme Court has upheld the use of generic environmental analyses by the NRC.⁴⁰ Moreover, As part of the environmental review for each license renewal application, NRC reviews site-specific issues for any new and significant information. In the event that the NRC determines that there is new and significant information concerning the generic spent fuel storage impact finding or any other generic finding, the NRC will consider such information when preparing the supplemental EIS for that particular licensing action ~~and if necessary, will also determine whether the License Renewal GEIS should be revised accordingly.~~

Moreover, the quality of the NRC's environmental analysis of spent fuel storage is not dependent on whether the NRC prepares a site-specific or generic analysis. In conducting both the License Renewal GEIS and the Continued Storage GEIS, the NRC employed assumptions, including those based upon reactor licensee operating experience, that are sufficiently conservative to bound the predicted impacts such that any variances that may occur from site to site are unlikely to result in environmental impact determinations that are greater than those presented in both GEISs.⁴¹ In addition, recent spent fuel studies (including expedited spent fuel transfer regulatory analysis included in COMSECY-13-0030 and NUREG-2161) continue to

⁴⁰ *Baltimore Gas*, 462 U.S. at 101, 103 S Ct. at 2254 ("[t]he generic method chosen by the agency is clearly an appropriate method of conducting the hard look required by NEPA").

⁴¹ Statements of Consideration for 1996 (61 FR 28467, 28479-480) and 2013 (78 FR 37282, 37310) License Renewal GEISs.

support the findings of the License Renewal GEIS. Though the studies may contain “new” information, the information is not “significant.” for purposes of the environmental analysis. The NUREG-2161 compared spent fuel pool accident consequences from previous research studies and found that they are of the same magnitude. Finally, the Continued Storage GEIS supports reinforces the Commission’s original determination that supports use of a generic analysis. ~~Thus there is no technical or regulatory reason to amend these regulations.~~

The petitioners assert that the need for power and economic costs were excluded in license renewal environmental reviews

The petitioners assert that NRC regulations in 10 CFR 51.53(c) and 51.71(d) excuse license renewal applicants and NRC staff from addressing the need for power in license renewal cases. The petitioners state, “[b]y excluding need for power from consideration in re-licensing decisions, the [Continued Storage] GEIS cripples its ability to assess the environmental impacts of storing spent fuel...This results in an ‘unbounded’ analysis of radiological risk.” The petitioners also assert that “it is essential to incorporate the economic costs of spent fuel storage and disposal in reactor cost-benefit analyses.”

In conjunction with the issuance of the License Renewal GEIS in 1996, the Commission amended its ~~environmental protection~~ regulations concerning environmental reviews for nuclear power plant license renewal actions.⁴² These amendments defined the generic environmental impacts addressed in the License Renewal GEIS and the environmental impacts for which nuclear plant site-specific analyses were to be performed. The Commission stated in the June 5, 1996 final rule for the “Environmental Review for Renewal of Nuclear Power Plant Operating Licenses,”

⁴² 61 FR 28467; June 5, 1996.

[T]he NRC will neither perform analyses of the need for power nor draw any conclusions about the need for generating capacity in a license renewal review. [The] definition of purpose and need reflects the Commission's recognition that, absent findings in the safety review required by the Atomic Energy Act of 1954, as amended, or in the NEPA environmental analysis that would lead the NRC to reject a license renewal application, the NRC has no role in the energy planning decisions of State regulators and utility officials. From the perspective of the licensee and the State regulatory authority, the purpose of renewing an operating license is to maintain the availability of the nuclear plant to meet system energy requirements beyond the term of the plant's current license.⁴³

As stated in the 2013 License Renewal GEIS,

[t]he purpose and need for the proposed action (issuance of a renewed license) is to provide an option that allows for baseload power generation capability beyond the term of the current nuclear power plant operating license to meet future system generating needs. Such needs may be determined by other energy planning decision-makers, such as State, utility, and, where authorized, Federal agencies (other than NRC). Unless there are findings in the safety review required by the Atomic Energy Act of 1954, as amended (AEA), or the NEPA environmental review that would lead the NRC to reject a license renewal application, the NRC does not have a role in the energy-planning decisions of whether a particular nuclear power plant should continue to operate.⁴⁴

As shown by these statements, it has been the NRC's longstanding position not to consider the need for power or economic costs in making its license renewal decisions.

~~Consideration of the need for power or the economic cost of renewing the operating license of nuclear reactor is beyond the NRC's statutory and regulatory purview; rather such consideration is the responsibility of State and local authorities and where appropriate, Federal agencies such as the Federal Energy Regulatory Commission or the Tennessee Valley Authority. The~~

⁴³ 61 FR at 28472.

⁴⁴ License Renewal GEIS, NUREG-1437, Revision 1 (2013), Section 1.3, p. 1-3 – 1-4.

petitioners' assertion that NRC's regulatory approach of excluding need for power from consideration in ~~re-licensing~~license renewal decisions "cripples" NRC's ability to assess the environmental impacts of storing spent fuel ~~is not proven and does not provide a sufficient regulatory basis to amend the NRC's regulations~~does not provide a basis for amending the regulations.

"Reasonable assurance" findings not included in proposed section 51.23

In commenting upon the NRC's proposed Continued Storage rule (78 FR 56776; September 13, 2013), the petitioners asserted that the NRC's proposal to remove the "reasonable assurance" statement from 10 CFR 51.23(a) was improper. Prior to the promulgation of the Continued Storage final rule (79 FR 56238; September 19, 2014), 10 CFR 51.23(a) stated, in part, that "the Commission believes there is reasonable assurance that sufficient mined geologic repository capacity will be available to dispose of the commercial high-level radioactive waste and spent fuel generated in any reactor when necessary."⁴⁵ In the final Continued Storage rule, the NRC removed the "reasonable assurance" statement.⁴⁶ The statements of consideration of the final Continued Storage rule explained that 10 CFR 51.23(a) set forth the NRC's generic determination 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 Continued Storage GEIS). In particular, the statements of consideration noted that,

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

⁴⁵ 10 CFR 51.23(a) (2013).

⁴⁶ 79 FR at 56260.

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.⁴⁷

Consequently, there is no need to retain the "reasonable assurance" statement, which is a safety finding, as 10 CFR 51.23(a) stated only the generic environmental determination and the remainder of 10 CFR 51.23 concerned the NRC's NEPA compliance. In this regard, the statements of consideration explained,

The [Continued Storage] 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 [Continued Storage] 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 [Continued Storage] 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 [Continued Storage] 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 [Continued Storage] 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 [Continued Storage] GEIS.⁴⁸

⁴⁷ 79 FR at 56253.

⁴⁸ 79 FR at 56254-55.

The petitions do not present any ~~technical or regulatory~~ new and significant information that would form a basis to amend 10 CFR 51.23, particularly in light of the September 19, 2014 Continued Storage rulemaking.

The petitioners assert that expedited spent fuel transfer analysis is "new and significant information"

The petitioners request that the NRC "consider, in all pending and future reactor licensing and re-licensing decisions, new and significant information bearing on the environmental impacts of high-density pool storage in reactor pools and alternatives for avoiding or mitigating those impacts." The petitioners assert that NRC staff generated new and significant information during its post-Fukushima Expedited Spent Fuel Transfer proceeding. Specifically, on October 9, 2013, the NRC released NUREG-2161, "Consequence Study of a Beyond-Design-Basis Earthquake Affecting the Spent Fuel Pool for a U.S. Mark I Boiling Water Reactor" and on November 12, 2013, the NRC delivered a regulatory analysis in COMSECY-13-0030, "Staff Evaluation and Recommendation for Japan Lessons Learned Tier 3 Issue on Expedited Transfer of Spent Fuel." These documents concluded that spent fuel pools are very robust structures with large safety margins, and that proposed regulatory actions for safety improvements were not warranted. This conclusion not only covers spent fuel pools at operating reactors applying for license renewal but also spent fuel pools that would be constructed at new reactor sites. Citing the low risk to public health and safety from spent fuel pool storage, the Commission subsequently concluded that regulatory action need not be pursued in Staff Requirements Memorandum (SRM), SRM-COMSECY-13-0030, issued on May 23, 2014.

The petitioners ~~believed~~ contend that former Chairman Allison Macfarlane's comments on COMSECY-13-0030, also provide new and significant information that requires the NRC to reconsider its impact findings in the 2013 license renewal GEIS. The former Chairman's comments were considered by the other Commissioners in the development of the SRM on this issue. However, the other four NRC Commissioners at that time determined in SRM-COMSECY-13-0030, that no further generic assessments concerning the expedited transfer of spent fuel to dry cask storage should be pursued. Notably, the SRM supported the staff's approach of using the NRC's Safety Goal Policy Statement of 1986 as a screening metric. The SRM-~~COMSECY-13-0030~~ is the agency's determination on this issue.

Nonetheless, the Petitioners contend that NUREG-2161 and COMSECY-13-0030 constitute new and significant information based on those documents' discussion of the severity of the impact of a spent fuel pool accident, sensitivity studies showing that some mitigation measures could be cost beneficial, and the possibility that a reactor accident could impact the likelihood of a spent fuel pool fire. However, none of these sources of information provide a "seriously different picture" of the environmental consequences of spent fuel storage. First, as noted above, the NRC has frequently recognized that the consequences of a spent fuel accident could be large but has determined that the overall risk of spent fuel pool accidents is small in light of the low probability of such an event.⁴⁹ Thus, the petitioners have not shown that the magnitude of the consequences of a spent fuel pool accident constitute new and significant information. Rather, NUREG-2161 and COMSECY-13-0030's recognition that the consequences of a spent fuel pool accident could be large but that the overall risk from such an event is small in light of the low probability of such an event comports with the agency's

⁴⁹ License Renewal GEIS, NUREG-1437, Revision 1 (2013), Appendix E, p. E-34 to -39.

previous consideration of this issue. Second, while the sensitivity studies may have shown some mitigation measures could be cost-beneficial, they are based on alternate assumptions that do not represent the NRC's analysis of the most likely impacts of a spent fuel pool accident. In any event, petitioners have not shown with specificity that any information in these sensitivity studies would undermine the agency's overall conclusion that despite potentially large consequences, the low probability renders the overall risk of a spent fuel pool accident low. Finally, contrary to petitioners' assertions, the NRC has frequently responded to claims that the probability of a reactor accident could impact the probability of a spent fuel pool accident and repeatedly found that such a probability is very low.⁵⁰

Consequently, the NRC concludes that neither COMSECY-13-0030 nor NUREG-2161 constitute "new and significant information" requiring the NRC to supplement any of its prior EISs, whether generic or specific. Similarly, the NRC concludes that there is no technical or regulatory basis to amend those of its "regulations that make or rely on findings regarding the environmental impacts of spent fuel storage during reactor operation, including Table B-1 and all regulations approving standardized reactor designs."

III. Determination of Petitions.

For the reasons cited in Section II of this document, the NRC has concluded that the petitions failed to present significant new information or sufficient ~~there is no~~ technical or regulatory basis that would warrant the requested rulemaking to amend the NRC regulations

⁵⁰ 73 FR at 46210; 2013 GEIS at E-38; NUREG-2157 at D-438 to D-440; COMSECY-13-0030, Enclosure 1 at 138.

identified in the PRM-51-30 and PRM-51-31. Therefore, the NRC is denying PRM-51-30 and PRM-51-31.

Earlier Part 51 PRMs

Several of the regulations identified by the petitioners have been the subject of prior rulemaking petitions (i.e., PRM-51-1, PRM-51-10, PRM-51-12, and PRMs-51-14 to 51-28) and issues similar to those raised by the petitioners were considered by the Commission in these prior petitions, and thus, these issues have been well vetted. The PRM-51-1 petitioner asserts that Table S-3 “seriously understate[d]” the impact on human health and safety from the uranium fuel cycle and that the Table S-3 values should be revised accordingly.⁵¹ The NRC denied PRM-51-1 based upon the Commission’s “generic determination that the radiological impacts of the uranium fuel cycle ... on individuals off-site will remain at or below the Commission’s regulatory limits, and as such, are of small significance.”⁵² The NRC described this generic determination in Chapter 6 of the 1996 version of the License Renewal GEIS; the generic determination was based upon findings made in various NRC and EPA rulemakings.⁵³

The petitioners in PRM-51-10 and PRM-51-12 challenged the generic findings for spent fuel storage impacts codified in Table B-1 and requested a rulemaking to remove this finding.⁵⁴ The petitioners raised the prospect of a fire at a nuclear power reactor’s spent fuel pool and the resulting release of radioactive material to the environment. According to the petitioners’ scenario, the spent fuel pool fire would be initiated by either an accident or a successful terrorist

⁵¹ 73 FR 14946; March 20, 2008.

⁵² 73 FR at 14947.

⁵³ *Id.*, at 14948.

⁵⁴ 73 FR 46204; August 8, 2008.

~~strike that would cause a partial or complete drain of the cooling water in the spent fuel pool. The petitioners requested the amendment of several of the regulations that are the subject of PRM-51-30 and PRM-51-31, namely, Table B-1, 10 CFR 51.23, 51.53(c) and 51.95(c).⁵⁵ The petitioners requested that the impacts of spent fuel storage be considered on a site-specific basis, in license renewal cases, rather than generically, due to this potential threat. The Commission denied PRM-51-10 and PRM-51-12, concluding that the risk of such a spent fuel pool fire was very low and that given the safety and security requirements that applied to all plants, as well as the physical robustness of spent fuel pools, the environmental impacts of spent fuel pool storage could be handled generically.⁵⁶ The NRC's denial of PRM-51-10 and PRM-51-12 was upheld in court.⁵⁷~~

~~Finally, in a series of virtually identical petitions, docketed as PRM-51-14 through PRM-51-28, the petitioners requested that the NRC rescind all regulations that reach generic environmental impact conclusions regarding severe reactor accidents and spent fuel pool accidents, which would include various provisions of Table B-1 and 10 CFR 51.53. The PRM-51-14 through PRM-51-28 petitions were filed shortly after the NRC issued its Near-Term Task Force (NTTF) report, "Recommendations for Enhancing Reactor Safety in the 21st Century, NTTF Review of Insights from the Fukushima Dai-ichi Accident," dated July 12, 2011. The NTTF report provided the NRC staff's recommendations to enhance U.S. nuclear power plant safety following the March 11, 2011, Fukushima accident in Japan. After determining that the NTTF report did not constitute new and significant information and further, that the~~

⁵⁵ *Id.*, at 46205.

⁵⁶ *Id.*, at 46206-12.

⁵⁷ *New York v. U.S. Nuclear Regulatory Commission*, 589 F.3d 551 (2nd Cir. 2009).

~~petitioners had provided no technical or regulatory basis to amend any of the NRC regulations in question, the NRC denied the PRM-51-14 through PRM-51-28 petitions.⁵⁸~~

IV. Availability of Documents.

The documents identified in the following table are available to interested persons through one or more of the following methods, as indicated. For more information on accessing ADAMS, see the ADDRESSES section of this document.

DOCUMENT	ADAMS ACCESSION NO. / WEB LINK / FEDERAL REGISTER CITATION
Blue Ribbon Commission on America's Nuclear Future- Final Report, January 2012.	http://energy.gov/sites/prod/files/2013/04/f0/brc_finalreport_jan2012.pdf
CLI-14-07 DTE Electric Co. et.al., July 17, 2014	http://www.nrc.gov/reading-rm/doc-collections/commission/orders/2014/2014-07cli.pdf
"Comments by Environmental Organizations on Draft Waste Confidence Generic Environmental Impact Statement [GEIS] and Proposed Waste Confidence Rule and Petition to Revise and Integrate All Safety and Environmental Regulations Related to Spent Fuel Storage and Disposal," January 7, 2014.	ML14029A124 ML14029A169 ML14029A154
COMSECY-13-0030, Staff Evaluation and Recommendation for Japan Lessons-Learned Tier 3 Issue on Expedited Transfer of Spent Fuel, November 12, 2013.	ML13273A601
COMSECY-13-0030 Vote Sheet, Staff Evaluation and Recommendation for Japan Lessons-Learned Tier 3 Issue on Expedited Transfer of Spent Fuel, April 8, 2014.	http://www.nrc.gov/reading-rm/doc-collections/commission/comm-secy/2013/2013-0030comvtr.pdf

⁵⁸ ~~80 FR 40235 (August 12, 2015).~~

Diane Curran
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Dear Ms. Curran:

I am responding to two Petitions for Rulemaking (PRMs) that you submitted on behalf of 34 environmental organizations (the petitioners). Specifically, this letter responds to the petitioners' December 20, 2013, submittal, which was corrected on January 7, 2014 (Accession No. ML14029A124 in the U.S. Nuclear Regulatory Commissions' Agencywide Documents Access and Management System (ADAMS)), and the petitioners' February 18, 2014, submittal, which was supplemented on May 1, 2014 (ADAMS Accession Nos. ML14071A382 and ML14177A660). These two petitions were docketed by the NRC as PRM-51-30 and PRM-51-31, respectively. In these two petitions, the petitioners requested that the NRC amend its regulations in Part 51 of Title 10 of the *Code of Federal Regulations* (10 CFR) that concern the impacts of spent fuel storage and disposal in environmental reviews for nuclear power plant license renewal applications.

PRM-51-30 was filed as part of the petitioners' comments on the NRC's proposed continued storage rule and that rule's associated generic environmental impact statement (GEIS). PRM-51-31 was filed shortly after the public release of the NRC staff's findings in the expedited spent fuel transfer analysis. The NRC published a notice of receipt in the *Federal Register* for PRM-51-30 on April 21, 2014 (79 FR 22055), and for PRM-51-31 on May 1, 2014 (79 FR 24595), and published an additional notice upon receipt of the supplement to PRM-51-31 on July 24, 2014 (79 FR 42989). PRM-51-31, as supplemented, asserted that recent NRC staff studies and a statement by the former NRC Chairman, constituted "new and significant" information under the National Environmental Policy Act that justified the requests made in PRM-51-31. The NRC did not request public comments on PRM-51-30 or PRM-51-31 because the NRC determined that it had sufficient information for review and the issues have been well-vetted in past NRC proceedings.

The NRC has determined that PRM-51-30 and PRM-51-31 have provided not provided a sufficient basis to revise the regulations, as requested. The NRC is therefore denying the two petitions. The reasons for the denial are explained in the enclosed notice, which will be published in the *Federal Register*. Upon publication of the enclosed notice, the NRC will close PRM-51-30 and PRM-51-31.

In PRM-51-31, the petitioners made several non-rulemaking requests; namely, that the NRC should: suspend the effectiveness of Table B-1 of 10 CFR Part 51; suspend the effectiveness, in new reactor licensing proceedings, of all regulations approving standardized reactor designs and all environmental assessments (EAs) approving Severe Accident Mitigation Design Alternatives; republish for public comment, the June 2013 License Renewal GEIS, the