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RULEMAKING ISSUE (Notation Vote)

December 6, 2022

SECY-22-0109

FOR: The Commissioners
FROM: Daniel H. Dorman
Executive Director for Operations

SUBJECT: PROPOSED RULE: RENEWING NUCLEAR POWER PLANT
OPERATING LICENSES—ENVIRONMENTAL REVIEW
(RIN 3150-AK32; NRC-2018-0296)

PURPOSE:

The purpose of this paper is to seek Commission approval to publish in the *Federal Register* the enclosed proposed rule (Enclosure 1) that would amend Part 51 of Title 10 of the *Code of Federal Regulations* (10 CFR), “Environmental Protection Regulations for Domestic Licensing and Related Regulatory Functions.”¹ The proposed amendments include updates to Table B-1, “Summary of Findings on NEPA [National Environmental Policy Act] Issues for License Renewal of Nuclear Power Plants,” in Appendix B, “Environmental Effect of Renewing the Operating License of a Nuclear Power Plant,” to Subpart A, “National Environmental Policy Act –

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Enclosure 5 transmitted herewith contains
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transmittal document is decontrolled.

¹ This paper is staff’s response to the Staff Requirements Memorandum (SRM)-SECY-22-0024 and would constitute the NRC’s 10 year update to the LR GEIS as contemplated by Part 51, Subpart A, Appendix B. SRM-SECY-22-0024, “Rulemaking Plan for Renewing Nuclear Power Plant Operating Licenses—Environmental Review (RIN 3150-AK32; NRC-2018-0296),” (Agencywide Documents Access and Management System (ADAMS) Accession No. [ML22096A035](#)).

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Regulations Implementing Section 102(2).” The proposed updates to Table B-1 are supported by the revised NUREG-1437, draft Revision 2, “Generic Environmental Impact Statement for License Renewal of Nuclear Plants” (LR GEIS) (Enclosures 2 and 3). The proposed updates account for subsequent license renewal (SLR) by reflecting a thorough evaluation of the environmental impacts of SLR in the LR GEIS. Additionally, the proposed rulemaking would remove the word “initial” from 10 CFR 51.53(c)(3) and make conforming changes in 10 CFR 51.53(c)(3)(ii) and 10 CFR 51.95(c). As part of the rulemaking the staff will also update implementing guidance.

SUMMARY:

In accordance with SRM-SECY-22-0024, the U.S. Nuclear Regulatory Commission (NRC) staff prepared a proposed rule that aligns with Commission adjudicatory Order, CLI-22-03, and recent decisions in (*Turkey Point*, CLI-22-02, and *Peach Bottom*, CLI-22-04), regarding the NEPA analysis of SLR applications. The proposed rule would amend 10 CFR Part 51 by removing the word “initial” in 10 CFR 51.53(c)(3) and revising 10 CFR Part 51, Table B-1. To support the rule, the staff has prepared an updated draft LR GEIS that thoroughly analyzes the environmental impacts of SLR and draft associated guidance.

BACKGROUND:

The introduction to Appendix B to Subpart A of 10 CFR Part 51 states that, on a 10-year cycle, the Commission intends to review the material in Appendix B, including Table B-1, and update it if necessary ([61 FR 28467](#); June 5, 1996). In August 2020, the NRC published a scoping notice in the *Federal Register* announcing NRC’s intent to review and potentially update the 2013 LR GEIS and providing the results of the NRC’s preliminary review ([85 FR 47252](#); August 4, 2020). The comment period began in August 2020 and ended in November 2020. In this scoping notice, the NRC solicited public comments, which provided the public with an opportunity to participate in the environmental scoping process, as defined in 10 CFR 51.26. Specifically, the NRC invited the public to review the results of the staff’s preliminary review of the LR GEIS, which included addressing SLR, and provide comments and suggestions for other areas that should be updated. The NRC conducted four webinars on August 19 and 27, 2020 (an afternoon and evening session each day). Enclosure 1 in SECY-22-0024 provided a summary of significant comments and proposals received during the public scoping period.²

At the conclusion of the public scoping period, the staff used the comments received to inform and draft a rulemaking plan. In July 2021, the NRC staff submitted SECY-21-0066, “Rulemaking Plan for Renewing Nuclear Power Plant Operating Licenses—Environmental Review (RIN 3150-AK32; NRC-2018-0296)” (ADAMS Accession No. [ML20364A008](#)), to request Commission approval to initiate a rulemaking to amend Table B-1 and update the LR GEIS and associated guidance.

In February 2022, the Commission issued SRM-SECY-21-0066, “Rulemaking Plan for Renewing Nuclear Power Plant Operating Licenses – Environmental Review (RIN 3150-AK32; NRC-2018-0296)” (ADAMS Accession No. [ML22053A308](#)), directing the staff to develop a rulemaking plan that aligned with Commission Order CLI-22-03 and recent decisions in Orders

² Scoping Summary Report for the Review and Update of the Generic Environmental Impact Statement for License Renewal of Nuclear Plants dated June 2021 (ADAMS Accession No. [ML21039A574](#)).

CLI-22-02 and CLI-22-04, which concluded that the 2013 LR GEIS did not apply to SLR reviews. The SRM also directed the staff to include in the rulemaking plan a proposal to remove the word “initial” from 10 CFR 51.53(c)(3) to specify that it applies to SLR and to revise the LR GEIS and Table B-1 and associated guidance to fully support SLR.

In March 2022, the staff submitted SECY-22-0024, “Rulemaking Plan for Renewing Nuclear Power Plant Operating Licenses – Environmental Review (RIN 3150-AK32; NRC-2018-0296)” (ADAMS Accession No. [ML22062B643](#)) requesting Commission approval to initiate a rulemaking that would align with Commission adjudicatory Order CLI-22-03 and recent decisions in Orders CLI-22-02 and CLI-22-04 by removing the word “initial” from section 51.53(c)(3) and revising the LR GEIS and Table B-1. The staff also proposed to update associated guidance to fully support SLR. The staff requested Commission approval to make other needed updates to the LR GEIS to account for changes to applicable laws and regulations, new data, and experience in conducting similar environmental reviews. The staff identified this rulemaking as a high priority effort. In April 2022, the Commission issued SRM-SECY-22-0024, “Rulemaking Plan for Renewing Nuclear Power Plant Operating Licenses – Environmental Review (RIN 3150-AK32; NRC-2018-0296)” (ADAMS Accession No. [ML22096A035](#)), approving the staff’s recommendation to proceed with the rulemaking. The Commission directed the staff to conduct the rulemaking within 24 months. Additionally, pursuant to SRM-SECY-21-0066, the staff submitted a second paper to the Commission, SECY-22-0036, which concluded that no further updates to the LR GEIS were needed beyond those identified in SECY-22-0024 and that the rulemaking effort identified in SECY-22-0024 should constitute the agency’s 10-year update to the LR GEIS. In June, the Commission approved these recommendations in SRM-SECY-22-0036.

DISCUSSION:

Overview of the LR GEIS

The primary purpose of the LR GEIS is to identify all environmental issues for license renewal and evaluate those environmental impacts considered to be generic for all, or a subset of, nuclear power plants. The LR GEIS also identifies and provides information on issues that need to be addressed in plant-specific environmental reviews for nuclear power plant license renewals (initial license renewal (initial LR) or SLR). The NRC documents these reviews in supplemental environmental impact statements (SEISs) to the LR GEIS.

The environmental issues evaluated in the LR GEIS and listed in Table B-1 are characterized as either Category 1 or Category 2. Category 1 issues are considered generic, as the impacts have been found to be essentially the same or similar at all, or a subset of, nuclear plants and that additional plant-specific mitigation measures are not likely to be sufficiently beneficial to warrant consideration. Category 1 issues are only reevaluated in nuclear power plant-specific environmental reviews if there is new and potentially significant information that could challenge the LR GEIS generic conclusion. In contrast, Category 2 issues are those that must be considered on a plant-specific basis. Each nuclear power plant-specific environmental review must address Category 2 issues. Table B-1 summarizes the impact findings documented in the LR GEIS on environmental issues for license renewal of nuclear power plants.

Additionally, license renewal applicants must prepare an environmental report in accordance with 10 CFR 51.53(c)(3) to support the staff’s environmental review. That section directs applicants for license renewals to analyze Category 2 issues and rely on Table B-1 and the LR

GEIS for Category 1 issues. The staff uses the information in the environmental report submitted by the applicant to analyze Category 2 issues in the plant-specific supplement to the LR GEIS and to determine whether new and significant information exists with respect to any Category 1 issues.

The staff reviewed and evaluated the environmental issues and impact findings in the 2013 LR GEIS for both initial LR and SLR. Since the development of the 2013 LR GEIS, 15 commercial nuclear power plants have undergone an initial LR environmental review. The NRC also considered five SLR environmental reviews, including three reviews (Turkey Point, Peach Bottom, and Surry) where a final SEIS was issued and two reviews (i.e., North Anna and Point Beach) for which the NRC has issued a draft SEIS but not a final SEIS.

This revision to the LR GEIS includes an evaluation of the environmental issues and findings of the 2013 LR GEIS and updates the analysis and assumptions to fully support SLR. Lessons learned, knowledge gained, and experience from license renewal environmental reviews performed by the NRC staff since development of the 2013 LR GEIS provided a significant source of new information for this assessment. In addition, new scientific research, changes in environmental regulations and impact methodology, and other new information were considered in evaluating the significance of impacts associated with initial LR and SLR. Public comments on previous plant-specific license renewal reviews also were analyzed to assess the existing environmental issues and identify potential new ones for consideration in the revised LR GEIS.

The purpose of this evaluation was to determine whether the findings presented in the 2013 LR GEIS remain valid for initial LR and to ensure that the analysis and assumptions support SLR reviews. In doing so, the NRC considered the need to modify, add to, or delete any of the 78 environmental issues in the 2013 LR GEIS and codified in Table B-1. As a result of this evaluation, the staff identified 80 environmental issues, which are considered in detail in the proposed LR GEIS revision. Fifty-nine of these issues were determined to be Category 1 and would not require additional plant-specific analysis. Of the remaining 21 issues, 20 were determined to be Category 2, and 1 issue remained uncategorized. None of the 78 environmental issues identified in Table B-1 and evaluated in the 2013 LR GEIS were eliminated, but certain issues were consolidated, 1 issue was subdivided into separate issues, and 3 new issues were added, bringing the total environmental issues to 80 for the proposed revision.

In the revised LR GEIS, the general analytical approach used by the NRC staff to evaluate potential environmental impacts was to (1) describe the nuclear power plant activity or aspect of plant operations or refurbishment that could affect the resource, (2) identify the resource that is affected, (3) evaluate past license renewal reviews and other available information, (4) assess the nature and magnitude of the potential environmental impact on the affected resource from initial LR or SLR, (5) characterize the significance of the effects, (6) determine whether the results of the analysis apply to all nuclear power plants or to a specific subset of plants—that is, whether the environmental issue is Category 1 (generic) or Category 2 (plant specific), and (7) consider additional mitigation measures for adverse impacts.

The following summarizes the types of proposed changes to Table B-1. These changes are listed by order of appearance in Table B-1, not by order of significance:

- One Category 2 issue, “Groundwater quality degradation (cooling ponds at inland sites),” and a related Category 1 issue, “Groundwater quality degradation (cooling ponds in salt marshes),” were consolidated into a single Category 2 issue, “Groundwater quality degradation (plants with cooling ponds).”
- Two related Category 1 issues, “Infrequently reported thermal impacts (all plants),” and “Effects of cooling water discharge on dissolved oxygen, gas supersaturation, and eutrophication,” and the thermal effluent component of the Category 1 issue, “Losses from predation, parasitism, and disease among organisms exposed to sublethal stresses,” were consolidated into a single Category 1 issue, “Infrequently reported effects of thermal effluents.”
- One Category 2 issue, “Impingement and entrainment of aquatic organisms (plants with once-through cooling systems or cooling ponds),” and the impingement component of a Category 1 issue, “Losses from predation, parasitism, and disease among organisms exposed to sublethal stresses,” were consolidated into a single Category 2 issue, “Impingement mortality and entrainment of aquatic organisms (plants with once-through cooling systems or cooling ponds).”
- One Category 1 issue, “Impingement and entrainment of aquatic organisms (plants with cooling towers),” and the impingement component of the Category 1 issue, “Losses from predation, parasitism, and disease among organisms exposed to sublethal stresses,” were consolidated into a single Category 1 issue, “Impingement mortality and entrainment of aquatic organisms (plants with cooling towers).”
- One Category 2 issue, “Threatened, endangered, and protected species and essential fish habitat,” was divided into three Category 2 issues: (1) “Endangered Species Act: federally listed species and critical habitats under U.S. Fish and Wildlife jurisdiction,” (2) “Endangered Species Act: federally listed species and critical habitats under National Marine Fisheries Service jurisdiction,” and (3) “Magnuson-Stevens Act: essential fish habitat.”
- Two new Category 2 issues, “National Marine Sanctuaries Act: sanctuary resources” and “Climate change impacts on environmental resources,” were added.
- One Category 2 issue, “Severe accidents,” was changed to a Category 1 issue.
- One new Category 1 issue, “Greenhouse gas impacts on climate change,” was added.
- Several issue titles and findings were revised for clarity.

These proposed changes are intended to ensure that future environmental reviews meet the “hard look” standard under NEPA and to maintain the relevance and efficiency of the NRC’s license renewal environmental review process.

Environmental issues in the revised LR GEIS are arranged by resource (i.e., subject matter) area, in the same manner as in the 2013 LR GEIS. For each resource area, the revised LR GEIS evaluates the environmental impacts of continued nuclear power plant operations during the license renewal term and associated refurbishment activities. This analysis provides the technical basis for the 80 identified environmental issues. Additionally, the NRC staff described a range of replacement energy alternatives to license renewal in the revised LR GEIS

for detailed consideration in plant-specific SEISs. The revised LR GEIS considers and evaluates the 80 environmental impact issues within the context of the following environmental resource areas: (1) land use and visual resources, (2) air quality and noise, (3) geologic environment, (4) water resources (surface water and groundwater resources), (5) ecological resources (terrestrial resources, aquatic resources, and federally protected ecological resources), (6) historic and cultural resources, (7) socioeconomics, (8) human health (radiological and nonradiological hazards and postulated accidents), (9) environmental justice, (10) waste management (radioactive and nonradioactive waste and spent nuclear fuel), (11) greenhouse gases and climate change, (12) cumulative impacts, and (13) impacts common to all alternatives (uranium fuel cycle and termination of nuclear power plant operations and decommissioning).

Additionally, with the exception of issues related to the Continued Storage rule, which explicitly considers 40 years of operation plus two license renewal terms, the analysis in the LR GEIS could apply to any license renewal term (i.e., initial, first SLR, or a term beyond the first SLR). However, because the NRC will update the LR GEIS every 10 years, the LR GEIS could be limited to initial LR and one SLR term with minimal impact on the NRC's regulatory activities. While the staff drafted and is recommending that the LR GEIS apply to any license renewal term, if the Commission approves the more limited approach, the staff could modify the LR GEIS and rule to only apply to initial LR and SLR with minimal edits.

Overview of Proposed Rule

The proposed rule would update the findings on environmental issues in Table B-1 with the data supported by the analyses in proposed NUREG-1437, Revision 2 to fully account for SLR. The proposed amendments also would revise the title of Table B-1 and direct applicants for both initial LR or SLR to use the LR GEIS, including reliance upon its generic analyses for the Category 1 findings. Further, the proposed rule would amend 10 CFR 51.53, "Postconstruction environmental reports," to remove the word "initial" and make conforming changes to the provisions of 10 CFR 51.53(c)(3). Additionally, the proposed rule would amend 10 CFR 51.95, "Postconstruction environmental impact statements," to clarify the reference to the current revision of NUREG-1437.

Implementing Guidance

The NRC staff plans to publish guidance³ for license renewal of nuclear power plants to support the implementation of the rule. These documents would provide guidance on (1) the development of environmental reports by license renewal applicants, (2) one or more acceptable ways that applicants can demonstrate meeting the values and assumptions for each Category 1 issue in the LR GEIS, and (3) how the NRC staff will evaluate applications that reference the LR GEIS and develop a draft and final SEIS. These documents are referenced in the preamble of the proposed rule and would be available for public comment concurrent with the proposed rule and the LR GEIS.

³ Draft Regulatory Guide DG-4027, "Preparation of Environmental Reports for Nuclear Power Plant License Renewal Applications" (ADAMS Accession No. [ML22165A072](#)), which would be Revision 2 to Regulatory Guide 4.2, Supplement 1, and draft NUREG-1555, Supplement 1, Revision 2, "Standard Review Plans for Environmental Reviews for Nuclear Power Plants: Operating License Renewal" (ADAMS Accession No. [ML22165A070](#)).

Anticipated Costs and Benefits

The staff prepared a draft regulatory analysis (Enclosure 4) to determine anticipated costs and benefits associated with this rulemaking. The regulatory analysis concluded that the proposed rule and associated guidance would result in undiscounted total net savings of \$91.4 million to the industry and \$31.7 million to the NRC.

Stakeholder Engagement

As discussed in SECY-22-0024, the NRC published in the *Federal Register* a scoping notice that indicated the results of the NRC staff's preliminary review and invited public comments and proposals for updating other areas of the LR GEIS ([85 FR 47252](#); August 4, 2020). Four public meetings were held on August 19 and August 27, 2020 (an afternoon and evening session on each day), to gather public comments. Enclosure 1 of SECY-22-0024 summarizes the significant comments and proposals received during the public scoping period. Because those scoping activities fully supported this revision to the LR GEIS, the Commission did not direct the staff to undertake additional scoping.

If the Commission approves publication of the proposed rule, the staff plans to hold public meetings and outreach during the comment period.

Relationship to Other Ongoing Activities

The proposed rulemaking has no direct nexus to any other rulemaking activities related to 10 CFR Part 51. Commission approval of this rulemaking would ensure that the generic findings in Table B-1 of Appendix B to Subpart A of 10 CFR Part 51 fully account for initial LR and SLR of nuclear power plant operating licenses. This would enable pending and future license renewal applicants to realize the efficiencies based on the findings for Category 1 issues in Table B-1, as supported by the technical basis in the revised LR GEIS, in preparing environmental reports as part of their applications.

COMMITMENT:

There are no commitments in this paper.

RECOMMENDATION:

The NRC staff recommends that the Commission approve the enclosed proposed rule (Enclosure 1) for publication in the *Federal Register*.

If the Commission approves the staff's recommendation, the NRC will complete the following activities:

- The NRC will publish the proposed rule in the *Federal Register* for a 60-day comment period. The *Federal Register* notice also will request comment on the draft LR GEIS (Enclosures 2 and 3), the draft regulatory analysis (Enclosure 4), and the draft revised guidance documents.

- The NRC staff will submit the proposed information collection requirements to the Office of Management and Budget for its review and approval on or immediately after the date of publication of the proposed rule in the *Federal Register*. The proposed rule contains amended information collection requirements that are subject to the Paperwork Reduction Act of 1995 (44 U.S.C. 3501, et seq.).
- The Office of Congressional Affairs will inform the appropriate congressional committees.
- The NRC staff will work with the Office of Public Affairs on public communications when the NRC publishes the proposed rule in the *Federal Register*.

RESOURCES:

This rulemaking is designated as a high-priority rulemaking in accordance with the common prioritization of rulemaking. Enclosure 5 includes an estimate of the NRC resources needed to complete this rulemaking.

COORDINATION:

The Office of the General Counsel reviewed this package and has no legal objection. The Office of the Chief Financial Officer reviewed this package and determined that it has no financial impact.

**Daniel H.
Dorman**

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Enclosures:

1. Proposed Rule
2. Draft Generic Environmental
Impact Statement for License
Renewal of Nuclear Plants, Volume 1
3. Draft Generic Environmental
Impact Statement for License
Renewal of Nuclear Plants, Volume 2
4. Draft Regulatory Analysis
5. Estimated Resources
(Not Publicly Available)

SUBJECT: PROPOSED RULE: RENEWING NUCLEAR POWER PLANT OPERATING
 LICENSES – ENVIRONMENTAL REVIEW (RIN 3150-AK32; NRC-2018-0296)
 DATED: December 6, 2022

**ADAMS Accession Nos: ML22165A003 (pkg); SECY: ML22165A004; FRN: M22165A005;
 Draft LR GEIS: ML22173A108; Draft Regulatory Analysis: ML22165A008;
 Estimated Resources: ML22165A008**

SECY-012

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