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RULEMAKING ISSUE (Affirmation)

February 21, 2024

FOR: The Commissioners SECY-24-0017

FROM: Raymond V. Furstenau
Acting Executive Director for Operations

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

PURPOSE:

The purpose of this paper is to obtain Commission approval to publish in the *Federal Register* the enclosed final rule (Enclosure 1) that will amend Part 51 of Title 10 of the *Code of Federal Regulations* (10 CFR), "Environmental Protection Regulations for Domestic Licensing and Related Regulatory Functions." The paper does not address any new commitments or resource implications.

SUMMARY:

The final rule includes 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 Part 51, Subpart A, "National Environmental Policy Act—Regulations Implementing Section 102(2)." The updates to Table B-1 are supported by the revised NUREG-1437, Revision 2, "Generic Environmental Impact Statement for License Renewal of Nuclear Plants" (LR GEIS) (Enclosure 2). The updates fully account for one term of subsequent license renewal (SLR) by reflecting a thorough evaluation of the environmental impacts of SLR in the LR GEIS; the staff has also updated associated guidance. Additionally, the final rule will 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).

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BACKGROUND:

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 the Commission’s decisions in CLI-22-02, CLI-22-03, and CLI-22-04 regarding the NEPA analysis of SLR applications. The staff proposed to remove the word “initial” from 10 CFR 51.53 and to revise the LR GEIS, Table B-1, and associated guidance to fully support SLR. 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)” (ML22096A035), approving the staff’s recommendation to proceed with the rulemaking.

On December 6, 2022, the staff submitted SECY-22-0109, “Proposed Rule: Renewing Nuclear Power Plant Operating Licenses—Environmental Review (RIN 3150-AK32; NRC-2018-0296)” (ML22165A003) requesting Commission approval to publish the proposed rule. On March 3, 2023, the proposed rule was published in the *Federal Register* (88 FR 13329) for a 60-day comment period, which ended on May 2, 2023. During the comment period, the staff conducted six hybrid public meetings to discuss the rule changes and supporting updates to the LR GEIS and to gather comments. Additionally, the staff conducted an informational meeting with Federally recognized Tribes on April 19, 2023, to afford Tribal representatives an opportunity to discuss the rule with the staff, and a public meeting on November 8, 2023, on cumulative effects of regulation to discuss effective and implementation dates of the final rule.

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. Category 1 issues are only re-evaluated in nuclear power plant-specific environmental reviews if there is new and significant information. Category 2 issues are required to be addressed in each nuclear power plant-specific supplement to the LR GEIS. The impact findings documented in the LR GEIS on environmental issues for license renewal of nuclear power plants are summarized in Table B-1.

Additionally, to support the staff’s environmental review, license renewal applicants must prepare an environmental report in accordance with 10 CFR 51.53(c)(3). That section directs applicants for initial license renewal (initial LR) or SLR to analyze Category 2 issues and to rely on Table B-1 and the LR GEIS for Category 1 issues. The staff uses the information in that environmental report to analyze Category 2 issues and in its evaluation of new and potentially significant information regarding Category 1 issues in the plant-specific supplement to the LR GEIS.

DISCUSSION:

Overview of the LR GEIS

The primary purpose of the LR GEIS is to identify and evaluate environmental issues for license renewal and determine which issues could result in the same or similar impact at all nuclear power plants or a specific subset of plants and which issues could result in different levels of impact. This revision to the LR GEIS evaluates the environmental issues and findings of the 2013 LR GEIS and updates the analysis and assumptions to fully support SLR as well as initial

LR. Lessons learned, knowledge gained, and experience from license renewal environmental reviews performed by the NRC staff since development of the 2013 LR GEIS provided an important 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 environmental reviews also were analyzed to assess the existing environmental issues and identify new ones. The purpose of this evaluation was to determine if the findings presented in the 2013 LR GEIS remain valid for initial LR and to update the analysis and assumptions to support one SLR term. In doing so, the staff considered the need to modify, add to, or delete any of the 78 environmental issues presented in the 2013 LR GEIS and codified in Table B-1. As a result of the detailed evaluation, the staff identified 80 environmental issues, which are considered in detail in the LR GEIS revision. Fifty-nine of these issues are Category 1 and would not require additional plant-specific analysis. Of the remaining 21 issues, 20 are Category 2 and one issue remained uncategorized. No environmental issues identified in Table B-1 and evaluated in the 2013 LR GEIS were eliminated, but certain issues were consolidated, and one issue was subdivided into three separate issues.

Environmental issues in the revised LR GEIS are arranged by resource area, in the same manner as the 2013 LR GEIS. In the revised LR GEIS, the environmental impacts of continued nuclear power plant operations during the license renewal term (initial LR or one SLR) and associated refurbishment activities are addressed in each resource area. This analysis provides the technical basis for the 80 identified environmental issues. Additionally, the revised LR GEIS includes a description of a range of replacement energy alternatives to the proposed action (license renewal), however, analyses and conclusions on alternatives will continue to be presented in the plant-specific supplement to the LR GEIS for each individual licensing review. The revised LR GEIS considers and evaluates the 80 environmental 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 gas emissions and climate change, (12) cumulative effects, and (13) impacts common to all alternatives (uranium fuel cycle and termination of nuclear power plant operations and decommissioning).

In the revised LR GEIS, the staff used the following general analytical approach to evaluate potential environmental issues and the impacts associated with continued operations and any refurbishment: (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, including information related to impacts during an SLR term; (4) assess the nature and magnitude of the potential environmental effect (impact) on the affected resource; (5) characterize the significance of the effect; (6) determine whether the results of the analysis apply to all or a specific subset of nuclear power plants, i.e., whether the issue is Category 1 (generic) or Category 2 (plant-specific); and (7) consider additional mitigation measures for reducing adverse impacts.

In addition, the staff made targeted changes, including removal of duplicative text, and organizational changes to this LR GEIS to address changes to NEPA from the Fiscal Responsibility Act of 2023 (Public Law No. 118-5, 137 Stat. 10). The changes include the

relocation of text and other materials from Chapters 2 and 4 and Chapters 6, 7, and 8 in their entirety to the appendices. With these revisions, the document meets the 300-page limit for environmental impact statements analyzing proposed agency actions of “extraordinary complexity” specified in the revised NEPA statute.

Overview of the Final Rule (Changes to NRC Regulations)

The final rule amends Appendix B to Subpart A to apply to initial LR and one SLR term and to update the findings on environmental issues in Table B-1 with the data supported by the analyses in the LR GEIS (NUREG-1437, Revision 2). The amendments also will revise the title of Table B-1 and allow applicants for both initial LR or the first SLR term to use the LR GEIS, including the reliance upon its generic analyses and the Category 1 findings. The final rule will 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 final rule will amend 10 CFR 51.95, “Postconstruction Environmental Impact Statements,” to clarify the reference to the current revision of the LR GEIS.

Applicability of License Renewal Terms

As directed by the Commission in Staff Requirements—SECY-22-0109, “Proposed Rule: Renewing Nuclear Power Plant Operating Licenses—Environmental Review,” the proposed rule sought comment on whether the applicability of the license renewal term should be expanded beyond two terms (i.e., initial LR and one term of SLR). Several comments from industry supported expansion citing an efficient use of resources, while a few members of the public opposed it, citing insufficient information on aging management.

The final rule and LR GEIS remain applicable to initial LR and one term of SLR, due in part to the lack of public support, no immediate industry need, and scheduling impacts. The staff has no knowledge of licensees that are actively contemplating a third renewal term. Staff also notes that the next review of the LR GEIS is scheduled for calendar year 2031 per SRM-SECY-22-0036, “Rulemaking Plan for Renewing Nuclear Power Plant Operating Licenses—10-Year Environmental Regulatory Update (NRC-2022-0087),” at which point there will be another opportunity to consider expanding the scope of the LR GEIS to include additional SLR terms.

Public Comments

The NRC received 1,889 comment submissions (1,839 individuals submitted a campaign letter, which counted as one unique comment). A comment submission is a communication or document submitted to the NRC by an individual or entity, with one or more individual comments addressing a subject or issue. A total of 44 unique and technically complex comment submissions were received. In addition, the staff considered comments provided at the six public meetings.

Appendix A.2 of the LR GEIS provides the staff’s analyses and responses to the comments received on the proposed rule (ML23201A226). The NRC staff considered these comments in developing the final rule and edited, as appropriate, the LR GEIS and guidance documents in response to these comments.

Major Changes from the Proposed Rule to the Final Rule

The section "Response and Public Comment Analysis" in the enclosed final rule describes the changes, in detail, in response to public comment. Two issues were raised that resulted in substantive changes to the proposed rule and are briefly discussed in the following paragraphs.

Greenhouse Gas Emissions and Climate Change: The NRC received comments stating that under the current Part 51 regulations, the NRC already has a framework for considering "additive" climate change impacts on environmental resources that may be affected by license renewal on a site-specific basis. Therefore, there is no need for the proposed new Category 2 issue or section 51.53(c)(3)(ii)(Q) to consider the additive or incremental effects of climate change or mitigation measures for purposes of the NRC's license renewal NEPA evaluation.

NRC Staff Response: The staff disagrees that the new Category 2 issue and accompanying section 51.53(c)(3)(ii)(Q) on climate change are unnecessary. However, with respect to mitigation measures, the staff agrees with the comments that the NRC's regulations at 10 CFR 51.53(c)(3)(iii) already require that environmental reports submitted by license renewal applicants address mitigation. The final rule has been revised to eliminate the duplicative requirement in 10 CFR 51.53(c)(3)(ii)(Q) specific to mitigation measures for climate change impacts. The staff also made conforming changes to Section 4.12 in Regulatory Guide 4.2, Supplement 1, Revision 2 and Section 4.12.5 in NUREG-1555, Supplement 1, Revision 2.

Human health (Microbiological hazards): The NRC received a comment stating that the proposed addition to Section 3.9.2.2 of the LR GEIS regarding discharges to waters of the United States infers reference to the Clean Water Act, which has the potential to expand the scope of this issue if changes to the definition of "waters of the United States" occur in the future. In addition, the comment recommends limiting the scope to waters receiving discharges that are accessible to the public for recreational use.

NRC Staff Response: The NRC staff agrees in part and disagrees in part with the comment. The staff agrees that reference to the Clean Water Act should be removed. Members of the public should be protected from microbiological hazards resulting from plant discharges into water bodies and not just to plant discharges into "waters of the United States." However, the staff does not agree that the scope of the Category 2 issue, "Microbiological hazards to the public," should be limited to waters receiving discharges that are accessible to the public for "recreational use." The staff modified the text in Section 3.9.2.2 of the LR GEIS; Sections 3.9 and 4.9 of Regulatory Guide 4.2, Supplement 1, Revision 2; and Sections 3.9 and 4.9 in NUREG-1555, Supplement 1, Revision 2 to reflect that members of the public could be exposed to microbiological organisms in thermal effluents at nuclear plants that use cooling ponds, lakes, canals, or that discharge to publicly accessible surface waters. The staff also updated the text in Chapter 2 (i.e., Table 2.1-1), Section 4.9.1.1.3 of the LR GEIS, and in Section 51.53(c)(3)(ii)(G) and Table B-1 of the final rule for consistency.

Associated Guidance

The NRC staff will publish guidance¹ for license renewal of nuclear power plants to support implementation of the final rule. These documents will provide guidance on: (1) the development

¹ Regulatory Guide 4.2, Revision 2, Supplement 1, "Preparation of Environmental Reports for Nuclear Power Plant License Renewal Applications" (ADAMS Accession No. ML23201A144), and NUREG-1555

of environmental reports by a license renewal applicant, (2) how an applicant could demonstrate its consideration of new and significant information for each Category 1 and Category 2 issue in the LR GEIS, and (3) how the NRC staff will evaluate an application that references the LR GEIS and develop a draft and final SEIS.

Backfitting and Issue Finality Considerations

The final rule codifies in 10 CFR Part 51 certain environmental issues identified in the revised LR GEIS and revises § 51.53(c)(3) to remove the word “initial.” The NRC has determined that the backfitting rule in § 50.109 and the issue finality provisions in 10 CFR part 52 do not apply to this final rule because this amendment does not involve any provision that would either constitute backfitting as that term is defined in 10 CFR Chapter I or affect the issue finality of any approval issued under 10 CFR Part 52.

Regulatory Analysis—Anticipated Costs and Benefits

The staff prepared a regulatory analysis (Enclosure 3) to determine anticipated costs and benefits associated with this rulemaking. The regulatory analysis concluded that the final rule and associated guidance would result in undiscounted total net savings of \$89.5 million to the industry and \$36 million to the NRC. A summary also is provided in the section “Cost and Benefits” in the enclosed final rule.

Stakeholder and Tribal Engagement

The NRC conducted six hybrid public meetings to promote a full understanding of the proposed rule, the draft revised LR GEIS, and associated draft guidance documents, and to receive public comments. In addition, on April 19, 2023, the NRC staff held an information meeting with Federally recognized Tribes. Also, on November 8, 2023, the NRC conducted a virtual public meeting on the cumulative effects of regulation to discuss the effective and implementation dates of the final rule.

Relationship to Other Ongoing Activities

The final rule 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 one term of 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.

RECOMMENDATION:

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

If the Commission approves publication of the LR GEIS, the staff will complete the following activities:

Supplement 1, Revision 2, “Standard Review Plans for Environmental Reviews for Nuclear Power Plants: Operating License Renewal” (ADAMS Accession No. ML23201A227).

1. The staff will publish the final rule in the *Federal Register*, and it will become effective 30 days after publication. Compliance with the rule will be required no later than 1 year after publication.
2. The staff will publish the LR GEIS (Enclosure 2); Regulatory Guide 4.2, Revision 2, Supplement 1, "Preparation of Environmental Reports for Nuclear Power Plant License Renewal Applications"; NUREG-1555, Supplement 1, Revision 2, "Standard Review Plans for Environmental Reviews for Nuclear Power Plants: Operating License Renewal"; and the regulatory analysis (Enclosure 3).
3. The staff will submit the collection of information contained the final rule to the Office of Management and Budget.
4. The Office of Congressional Affairs will inform the appropriate congressional committees.
5. The staff will work with the Office of Public Affairs on an appropriate public communication when the NRC publishes the final rule in the *Federal Register*.

RESOURCES:

This rulemaking is designated as a high-priority rulemaking in accordance with the common prioritization of rulemaking process. The Operating Reactors business line includes resources for this rulemaking for fiscal year 2024. There is no need to change the budgeted resources as a result of this paper.

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 for resource implications and has no objections.



Raymond V. Furstenau
Acting Executive Director
for Operations

Enclosures:

1. Final Rule: FRN: Renewing NPP Operating Licenses-Environmental Review (RIN 3150-AK32; NRC -2018-0296)
2. NUREG-1437, Generic Environmental Impact Statement for License Renewal of Nuclear Plants (Vol 1: Vol 2: Vol 3)
3. Regulatory Analysis: Renewing NPP Operating Licenses - Environmental Review (RIN 3150-AK32; NRC-2018-0296)
4. Legal Enclosure for the Generic Environmental Impact Statement for License Renewal Update

SUBJECT: FINAL RULE: RENEWING NUCLEAR POWER PLANT OPERATING LICENSES—
 ENVIRONMENTAL REVIEW (RIN 3150-AK32; NRC-2018-0296) DATED: February
 21, 2024

ADAMS Accession Nos: ML23202A179 (pkg); **SECY:** ML23202A150; **FRN:** ML23205A024;
LR GEIS: ML23202A170; **Regulatory Analysis:** ML23205A029; **Legal Enclosure:** ML23333A165

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