

**Response to Request for Information
Letter Dated November 1, 2023**

1. At the Environment and Public Works Committee NRC oversight hearing on April 19, 2023, you were asked about the time and resources required for SLR. You stated, "I recently have become aware of this [time and resource] discrepancy in the hours myself. I am focusing on it and working with the career staff to find out what the issues are here."¹¹ Since that hearing, what have you done to identify the issues and what action have you taken to resolve the discrepancy in SLR review time and costs?

RESPONSE:

The Commission continues to challenge the NRC staff to improve the timeliness and cost associated with the subsequent license renewal (SLR) review process while ensuring reasonable assurance of adequate protection. Acknowledging the challenges, the NRC staff has already implemented several improvements to increase efficiencies in the SLR application review process. Additionally, the staff is engaged with stakeholders to identify additional means to streamline and further incorporate risk-informed decision-making.

Over the past few months, the NRC staff met several times with stakeholders to identify strategies for further efficiencies. Through these meetings, the staff has identified approaches that may be pursued by the industry (e.g., by enhancing applications and updating industry guidance) and the NRC (e.g., through additional review process improvements).

In addition, the NRC staff is refining its approach for reviewing SLR applications. Risk information is one of several key factors that the staff is considering as it determines the appropriate depth of review for various SLR application portions. The staff is considering how parts of the application that were approved for the initial license renewal, as well as information available from the license renewal program overlap with other regulatory requirements and may be used to streamline SLR application reviews. More stakeholder engagement is planned for early next year to further evaluate the use of risk information in SLR application reviews.

With these ongoing process improvements, the NRC staff anticipates an overall reduction in hours for future SLR application reviews while maintaining reasonable assurance of safety. By leveraging process improvements already implemented, the NRC reduced the resource estimates for the SLR application review for the Virgil C. Summer Nuclear Station by about 4,000 hours. As the staff continues to engage with stakeholders, the NRC staff anticipates that additional efficiencies will be gained. Separately, the staff is assessing activities that may support shortening the overall review schedules.

¹¹ *The Nuclear Regulatory Commission's Proposed Fiscal Year 2024 Budget*, 118th Cong. (April 19, 2023), (testimony of Chair Christopher Hanson), <https://www.epw.senate.gov/public/cache/files/f/a/faa1fdee-b869-4888-bf76-5ba6d8b317bb/7E54B634C0E27EA505434A976688E43E.spw-04192023-nrc-2024-budget.pdf>.

2. What specific steps is the Commission, as a whole, taking to ensure the NRC's SLR review and approval process is efficient, timely, predictable, and affordable?

RESPONSE:

On November 2, 2023, the Commission was briefed by the NRC staff on the latest updates related to the SLR program. Following the brief, the Commission issued a Staff Requirements Memorandum directing the Executive Director for Operations to provide the Commission with a roadmap to restore the license renewal program to a path of timely and predictable reviews and achieve the goal of 18-month reviews. The roadmap will include action items and deadlines to risk-inform renewal reviews, leverage operating programs, leverage previous reviews, and leverage the agency's and industry's operating experience in aging management. It will also include dates for achieving staffing levels appropriate for the workload and request any resource allocation or reallocation, if necessary, that the Commission would need to provide.

The Commission closely monitors the NRC staff's ongoing efforts to implement various enhancements to streamline SLR application reviews. Some examples of completed process improvements include: replacing an inspection as a part of the licensing decision with existing information from the post-approval inspections from the initial license renewal period of extended operations; reducing the number of Advisory Committee on Reactor Safeguards meetings to one full committee meeting; and increasing the use of remote communications, including online portals, which has maximized the efficiency of NRC staff review time and reduced time required for staff to travel to and from reactor sites. Additionally, the optimization of audits and adoption of requests for confirmation of information have reduced the number of requests for additional information. As the NRC staff continues to engage with stakeholders and work on additional enhancements, such as proposed revisions to NRC regulatory guidance documents for SLR, the Commission will continue to be informed and monitor progress.

The revised license renewal generic environmental impact statement (LR GEIS) and associated final rule, once issued, will result in additional efficiencies due to the fact that they incorporate new information, lessons learned, and knowledge gained from initial license renewal and SLR application reviews performed by the NRC since development of the 2013 LR GEIS. The Commission has taken significant steps to facilitate an accelerated schedule for the revised LR GEIS. For example, the Commission has provided significant additional resources to accelerate the staff's review and approved establishing a dedicated team of agency experts within the NRC to prepare the revised LR GEIS. The Commission approved the draft LR GEIS in just over one month.

3. What specific steps, such as implementing process improvement methodologies, are the NRC staff taking to ensure the NRC's SLR review and approval process is efficient, timely, predictable, and affordable?

RESPONSE:

The NRC staff is implementing several process improvements to ensure that SLR application reviews are conducted in accordance with the NRC's Principles of Good Regulation, including efficiency, clarity, and reliability. Before an SLR application is submitted to the NRC, the NRC staff communicates with the applicant on lessons

learned from previous reviews, updates to relevant guidance documents, and the characteristics of a quality application. The NRC staff and industry have recognized that early and consistent engagement enhances efficiency in application reviews.

The NRC staff is also considering how the best practices identified for new and advanced reactor reviews that have recently contributed to timely and cost-effective safety decisions may be implemented for license renewal reviews. For each SLR application, the NRC staff is rightsizing the estimated review hours for each specific review area. Rightsizing involves analyzing hours expended on previous reviews, accounting for work already accomplished for fleet programs that may be informative to the review, and considering unique features related to a specific plant. The hours expended are closely tracked and any potential deviations from the original estimate are assessed to determine whether an increase is necessary to make a required regulatory finding.

The NRC staff is striving to develop a standardized approach for referencing previous reviews, such as initial license renewal applications or fleet programs. The upcoming revisions to the Generic Aging Lessons Learned for Subsequent License Renewal Report (GALL-SLR Report) and Standard Review Plan for Review of Subsequent License Renewal Applications for Nuclear Power Plants are also expected to enhance the NRC's generic guidance to minimize the need to review common technical issues on a plant-specific basis.

The NRC staff also plans to make audit questions publicly available shortly after the audit is concluded, rather than the previous practice of releasing them with the audit report. By doing so, new applicants can benefit from understanding the types of technical topics, issues, and questions being asked by the NRC staff in audits.

Additionally, the NRC staff is modernizing its information technology tools. For example, the NRC staff is working on enhanced project management tools that will reduce the resources needed to complete these reviews. The modernization of these tools will facilitate more efficient reviews.

The NRC staff also continues to train its application reviewers on the inspection and oversight process, to afford a holistic understanding of the license renewal process. By doing so, the reviewers are better equipped to conduct their technical reviews by giving appropriate consideration to other NRC regulations and programs that support safety.

In its environmental reviews, the NRC staff is leveraging contractor support with environmental impact statement development to allow more staff resources to focus on the increased workload of multiple pending and expected initial license renewal and SLR applications while also working to complete the update to the LR GEIS as quickly as possible.

4. Will you direct the Executive Director for Operations and other senior NRC staff to establish more ambitious milestone schedules and cost estimates that reflect increased efficiency aligned with the organization's experience with license renewal?

RESPONSE:

As included in response to Question 2, my colleagues and I have directed the Executive Director for Operations to submit a roadmap to the Commission to restore the license renewal program to a path of timely and predictable reviews and achieve the goal of 18-month reviews. This roadmap is due to the Commission in March 2024.

With regards to review costs, the NRC staff has developed a strategic goal to substantially reduce the hours spent on SLR application reviews this fiscal year while maintaining reasonable assurance of safety, in an effort to address the discrepancy between hours spent on SLR application reviews and initial license renewal application reviews and to enhance the efficiency of SLR reviews. The staff plans to achieve this strategic goal through implementation of the strategies discussed above.

The Commission plans to closely monitor the staff's efforts to implement the process improvements identified to facilitate efficient application reviews.

In addition, the ongoing rulemaking to address Commission direction to expand the scope of the LR GEIS to cover one term of SLR is expected to improve the efficiency of environmental reviews for SLR applications going forward.

5. What unique and different items are considered as part of the NRC's SLR review and approval process compared to the initial license renewal process? What unique and different items are considered that are not covered in a licensee's aging management program?

RESPONSE:

The NRC acknowledges that there are many similarities between initial license renewal and SLR and is working to determine how to best address that in application reviews. However, there are also notable differences between initial license renewal and SLR.

Since its initial issuance in 2001, the NRC's aging management guidance in the Generic Aging Lessons Learned (GALL) Report (ML012060392) has been regularly enhanced to account for plant operating experience, lessons learned in the staff's renewal reviews, knowledge gains through research, and the issuance of new and updated industry consensus standards and technical reports. The GALL-SLR Report (ML17187A031), issued in 2017, was the fourth major revision to the guidance, and its issuance was informed by more than 30 public meetings with stakeholders. In July 2023, the NRC staff issued, for public comment, draft updates of the GALL-SLR Report and Standard Review Plan for Review of Subsequent License Renewal Applications for Nuclear Power Plants; the comment period ended in October. The NRC staff expects to issue the final guidance documents towards the end of 2024, after considering public comments received on the draft documents.

As compared to the 2017 GALL-SLR Report, the 2023 draft GALL-SLR Report includes six new aging management programs, three new technical topics, and nine areas that are more challenging to review for 60 – 80 years than they were for 40 – 60 years. In addition, some parts of the guidance for the aging management programs that are carried through had been changed between initial license renewal and SLR to account for lessons learned. Therefore, the programs are not identical, although they may be

substantially similar. For both initial license renewal and SLR applications, the staff reviews the recent operating experience to determine whether the program in the generic guidance is appropriate, or, if modified by the licensee, whether the changes are appropriate.

Other factors also contributed to the resources spent on the first three SLRs:

- Each of the sites initially requesting subsequent renewal had plant-specific materials or operating experience that were not addressed in the generic NRC guidance, requiring additional review to identify an acceptable aging management approach.
- The sites initially requesting subsequent renewal, except for one, had existing license renewal (40 – 60 years) aging management programs that were developed prior the first issuance of the NRC's GALL Report guidance in 2001. As a result, there were significant differences between their existing programs and those described in the current GALL-SLR Report. Enhancements to the legacy plant programs to bring them up to date involved a greater depth of review than the depth of review anticipated for plants utilizing aging management programs currently described in the GALL-SLR Report.