

UNITED STATES
NUCLEAR REGULATORY COMMISSION
OFFICE OF NUCLEAR REACTOR REGULATION
WASHINGTON, DC 20555-0001

August 21, 2023

**NRC REGULATORY ISSUE SUMMARY 2014-06, REVISION 1,
CONSIDERATION OF CURRENT OPERATING ISSUES
AND LICENSING ACTIONS IN LICENSE RENEWAL**

ADDRESSEES

All holders of, or applicants for, a power reactor operating license or construction permit under Title 10 of the *Code of Federal Regulations* (10 CFR) Part 50, "Domestic Licensing of Production and Utilization Facilities," except those that have certified that they have permanently ceased operations and permanently removed all fuel from the reactor vessel.

All holders of, or applicants for, a power reactor early site permit or a combined license under 10 CFR Part 52, "Licenses, Certifications, and Approvals for Nuclear Power Plants."

INTENT

The U.S. Nuclear Regulatory Commission (NRC) is issuing this regulatory issue summary (RIS) to provide information to applicants and licensees on how the NRC considers current operation of the facility in license renewal reviews under 10 CFR Part 54, "Requirements for Renewal of Operating Licenses for Nuclear Power Plants." This RIS requires no action or written response on the part of any addressee.

BACKGROUND INFORMATION

In 10 CFR 54.21, "Contents of application—technical information," and 10 CFR 54.23, "Contents of application—environmental information," the regulations identify the technical information that must be submitted in a license renewal application (LRA) to enable the NRC staff to determine whether the license may be renewed, as identified in 10 CFR 54.29, "Standards for issuance of a renewed license." The license renewal review focuses on the management of the aging of structures and components within the scope of license renewal. To grant a renewed license in accordance with 10 CFR 54.29, the NRC must find, in part, that the applicant has demonstrated compliance with the current licensing basis (CLB), as follows:

(a) Actions have been identified and have been or will be taken with respect to the matters identified in Paragraphs (a)(1) and (a)(2) of this section, such that there is reasonable assurance that the activities authorized by the renewed license will continue to be conducted in accordance with the CLB, and that any changes made to the plant's CLB in order to comply with this paragraph are in accord with the Act and the Commission's regulations. These matters are:

(1) managing the effects of aging during the period of extended operation on the functionality of structures and components that have been identified to require review under § 54.21(a)(1); and

(2) time-limited aging analyses that have been identified to require review under § 54.21(c).

Licensing actions and current operating issues may arise during the review of either initial or subsequent LRAs that may affect aspects of the review. For example, during the NRC staff's review of an LRA, separate licensing actions, other CLB changes, and operating experience have challenged the NRC staff's ability to conclude that the applicant has demonstrated it will adequately manage the effects of aging. Whether these issues need to be considered in the license renewal review depends on the effect that the information will have on the required finding of 10 CFR 54.29(a) in regard to the adequacy of aging management for structures and components and the applicant's evaluation of time-limited aging analyses (TLAAs).

SUMMARY OF ISSUE

As required by 10 CFR 54.21(b), license renewal applicants need to update their applications with newly developed information that could impact aging management of structures and components. Newly identified information related to a current operating license issue or CLB change(s) includes the following examples:

- a significant change to the CLB that affects the scope of license renewal as provided in the LRA
- a current operating issue that potentially challenges the adequacy of the applicant's aging management programs (AMPs)
- recent operating experience (that occurred between the operating experience review cutoff date and the submission of the LRA) or late-breaking operating experience (that arose during the LRA review) that potentially challenges the adequacy of the applicant's AMPs

These examples highlight some issues that may affect the NRC staff's license renewal review. Addressing these and similar issues may require more resources from the applicant and the NRC staff, potentially delaying the license renewal review schedule.

The above considerations pertain to current operating license holders. It is also relevant to current combined license holders that have yet to commence operation, as the information in this RIS may be useful to help them develop and implement operational programs that would facilitate eventual license renewal.

1. Issues affecting the scope of license renewal

The applicant's determination of systems, structures, and components (SSCs) within the scope of license renewal must be based on the CLB. Significant changes to the CLB that occur during the license renewal review present challenges because the CLB, and thus the scope of license renewal, may be in flux. Such changes can arise from other licensing actions that are processed concurrently with the LRA. To comply with 10 CFR 54.21(a), license renewal applicants must ensure the license renewal scope reflects their current CLB.

These challenges are highlighted when an applicant submits its LRA concurrent with other major licensing actions. For example, an applicant's implementation of an NRC-approved extended power uprate can affect multiple areas of the CLB, such as the reactor vessel internals and calculations for neutron fluence, upper shelf energy, and pressure-temperature

limits. Changing such areas of the CLB also can result in significant modifications to major balance-of-plant equipment.

When the review of these types of major licensing actions occurs concurrently with the license renewal review, applicants should give extra consideration to the possibility of significant changes to the CLB that could materially affect the LRA. Such changes may necessitate new AMPs and TLAAs or may introduce new and significant aging effects and mechanisms that could result in the addition of multiple aging management review line items to the LRA. Examples of CLB changes that are potentially not significant such that the LRA would not be materially affected could involve SSCs that are removed from the scope of license renewal or SSCs that were added in scope but are already accounted for by existing aging management activities in the LRA. Regardless of the significance of the impact to the LRA, the NRC staff must review all such CLB changes before it can make the finding required by 10 CFR 54.29(a). Therefore, LRA reviews that occur concurrently with licensing action reviews or other CLB changes may require extra consideration, resources, and review time, including reviews held in abeyance pending final determination of the impact of the CLB change on the LRA.

How significant changes to the CLB may affect the license renewal review depends on when the CLB change is made. Figure 1 shows four scenarios of CLB changes, labeled A through D, and their relationship to the license renewal review. Scenario A marks a CLB change that occurs before the LRA is submitted. Scenario B marks a CLB change that occurs before the last required LRA update. Scenario C marks a CLB change that occurs after the last required LRA update but before the renewed license decision. Scenario D marks a CLB change that occurs after issuance of the renewed license.

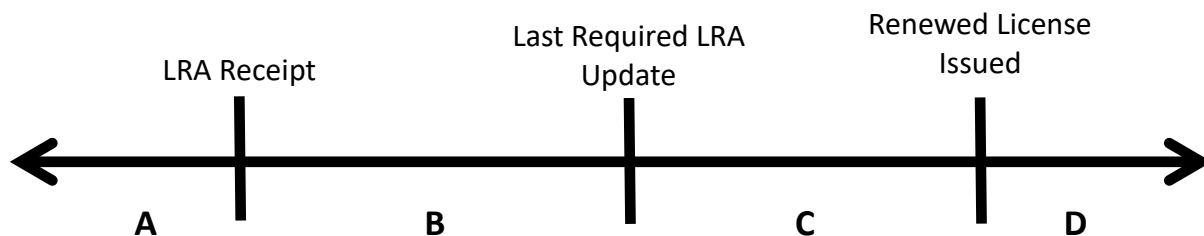


Figure 1 CLB change and LRA review timeline

Scenario A. If the CLB change is implemented before the LRA receipt, the LRA should reflect the applicable CLB changes before submission, in accordance with the requirements of 10 CFR 54.21(a), (c), and (d) and 10 CFR 54.22, “Contents of application—technical specifications.”

Scenario B. CLB changes are reported pursuant to 10 CFR 54.21(b). As stated in 10 CFR 54.21(b), license renewal applicants must amend the LRA annually to identify any CLB changes that materially affect the contents of the LRA, including the final safety analysis report supplement. The applicant is required to submit the last annual update to the LRA at least 3 months before the scheduled completion of the NRC review. This update must capture all CLB changes up to that point that materially affect the contents of the LRA, in accordance with 10 CFR 54.21(b). The NRC staff will evaluate these CLB changes for significance and therefore may need additional time to make the finding required by 10 CFR 54.29(a). The NRC staff will issue its safety evaluation report when all open items have been closed, including any open items associated with the reported CLB changes.

Scenario C. If the CLB change is implemented after the last required LRA update but before the renewed license decision, the NRC staff will still evaluate the CLB changes that materially affect the LRA for significance. The NRC staff will review these changes to determine whether they affect the finding required by 10 CFR 54.29(a). If this finding is impacted, the NRC staff may extend the review schedule to evaluate the CLB changes and their effects on aging management and TLAAAs before making its 10 CFR 54.29(a) finding.

Scenario D. The CLB changes that occur after the renewed license is issued are addressed by 10 CFR Part 50 requirements (e.g., 10 CFR 50.59, "Changes, tests and experiments," and 10 CFR 50.90, "Application for amendment of license, construction permit, or early site permit") and may also be subject to the 10 CFR 54.37(b) reporting requirements. RIS 2007-16, Revision 1, "Implementation of the Requirements of 10 CFR 54.37(b) for Holders of Renewed Licenses," dated April 28, 2010 (Agencywide Documents Access and Management System Accession No. ML100250279), provides additional information on these post-renewal reporting requirements.

2. Operating experience that occurs after the development of the application or during the license renewal application review

As discussed in Appendix A.4, "Operating Experience for Aging Management Programs," to NUREG-2192, Revision 0, "Standard Review Plan for Review of Subsequent License Renewal Applications for Nuclear Power Plants," issued July 2017 (ADAMS Accession No. ML17188A158), for subsequent license renewal (for plant operation from 60 to 80 years) and in LR-ISG-2011-05, "Ongoing Review of Operating Experience," issued March 2012 (ADAMS Accession No. ML12044A215), for license renewal (for plant operation from 40 to 60 years), operating experience is a crucial aspect of any efforts to effectively manage aging effects. Operating experience provides support for all other aspects of effective AMPs and, as a continuous feedback mechanism, is used to identify AMP changes that are necessary to maintain the overall effectiveness of the AMP. Operating experience can provide objective evidence to support the conclusion that the effects of aging are managed adequately so that the intended function(s) of structures and components will be maintained during the period of extended operation. Pursuant to 10 CFR 54.21(a)(3), a license renewal applicant is required to demonstrate that the effects of aging on structures and components subject to an aging management review are adequately managed so that their intended function(s) will be maintained consistent with the CLB for the period of extended operation.

The NRC staff acknowledges and understands that applicants must set a cutoff date for the review of operating experience in order to complete and submit their applications for the staff's review. However, recent (i.e., between the operating experience review cutoff date and the submission of the LRA) or late-breaking (i.e., during the LRA review) operating experience could affect an applicant's ability to define its aging management activities and thus affect the staff's ability to reach a regulatory decision under 10 CFR 54.29(a). For example, if a new aging mechanism is identified during the LRA review, such as a corrosion mechanism that could compromise the pressure boundary of a piping component subject to an aging management review, the applicant must determine whether the proposed inspection techniques and inspection frequencies are capable of identifying loss of material before a loss of intended function. This may result in the applicant augmenting the specific aging management program, or developing a new plant-specific AMP, to demonstrate that the effects of aging will be adequately managed.

To make the finding required by 10 CFR 54.29(a), the NRC staff needs to receive information about recent and late-breaking operating experience, if it materially affects an AMP, to have sufficient technical basis to evaluate the adequacy of the applicant's aging management

activities. License renewal applicants should inform the staff in a timely manner of recent or late-breaking operating experience using appropriate communication vehicles, including voluntary supplements to the application and the annual update required by 10 CFR 54.21(b), as delineated above. The NRC staff will evaluate the recent and late-breaking operating experience for impacts to the adequacy of the applicant's AMPs and, therefore, may need additional information and time to determine whether the finding required by 10 CFR 54.29(a) may be made.

BACKFITTING AND ISSUE FINALITY DISCUSSION

This RIS provides information that clarifies how a licensing action or current operating issue identified during a license renewal review may affect the NRC's determination on license renewal. This RIS requires no action or written response. Therefore, this RIS does not contain a new or changed NRC staff position or an interpretation of the regulations that would constitute backfitting as defined in 10 CFR 50.109, "Backfitting," or represent an inconsistency with applicable issue finality provisions in 10 CFR Part 52.

FEDERAL REGISTER NOTIFICATION

The NRC published a notice of opportunity for public comment on this RIS in the *Federal Register* (NRC-2023-0052) on March 7, 2023 (88 FR 14091). The agency received feedback from six commenters. The staff considered all comments but made no changes to the RIS. The staff discusses the evaluation of these comments in a publicly available memorandum (ADAMS Accession No. ML23191A262).

CONGRESSIONAL REVIEW ACT

This RIS is not a rule as defined in the Congressional Review Act (5 U.S.C. §§ 801–808).

PAPERWORK REDUCTION ACT STATEMENT

This RIS does not contain new or amended information collection requirements that are subject to the Paperwork Reduction Act of 1995 (44 U.S.C. 3501 et seq.). Existing requirements were approved by the Office of Management and Budget (OMB), approval number 3150-0155.

PUBLIC PROTECTION NOTIFICATION

The NRC may not conduct or sponsor, and a person is not required to respond to, a collection of information unless the document requesting or requiring the collection displays a currently valid OMB control number.

CONTACT

Please direct any questions about this matter to the lead project manager listed below.

/RA/
Russell Felts, Director
Division of Reactor Oversight
Office of Nuclear Reactor Regulation

Lead Project Manager: Christopher Tyree, NRR
301-415-3754
Email: Christopher.Tyree@nrc.gov

Note: NRC generic communications may be found on the NRC public website, <http://www.nrc.gov>, under NRC Library/Document Collections.

SUBJECT: NRC REGULATORY ISSUE SUMMARY 2014-06, REVISION 1,
CONSIDERATION OF CURRENT OPERATING ISSUES AND LICENSING
ACTIONS IN LICENSE RENEWAL DATED: AUGUST 21, 2023

DISTRIBUTION: RIS File

ADAMS ACCESSION NUMBER: ML23167A044

*via e-concurrence L-2021-GEN-0005

OFFICE	PM:NLRP:DNRL	Tech Editor	BC:NLRP:DNRL	OCIO	OE	OGC
NAME	CTyree	KAzariah-Kribbs	LGibson	DCullison	Jperalta	STurk
DATE	7/24/2023	7/14/2023	7/24/2023	7/25/2023	7/24/23	08/04/2023
OFFICE	LA:IOEB:DRO	PM:IOEB:DRO	PM:IOEB:DRO	BC:IOEB:DRO	D:DRO:NRR	
NAME	IBetts	PClark	BBenney	LRegner	RFelts (TMartinez-Navedo) for	
DATE	08/10/2023	8/14/2023	8/10/2023	8/18/2023	8/21/2023	

OFFICIAL RECORD COPY