

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

May 5, 2014

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

ADDRESSEES

All holders of and applicants for a power reactor operating license under Title 10 of the *Code of Federal Regulations* (10 CFR) Part 50, "Domestic Licensing Of Production And Utilization Facilities" or combined license under 10 CFR Part 52, "Licenses, Certifications, and Approvals for Nuclear Power Plants," except those who have permanently ceased operations and have certified that fuel has been permanently removed from the reactor vessel.

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 the license renewal review 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 an addressee.

BACKGROUND INFORMATION

In 10 CFR §§ 54.21 and 54.23, the regulations set forth the technical information which must be submitted in a license renewal application under 10 CFR 54.29, "Standards for issuance of a renewed license." The license renewal review focuses on the management of aging for structures and components within the scope of license renewal. In order to grant a renewed license, the NRC must find that the applicant has demonstrated compliance with the current licensing basis (CLB) in accordance with 10 CFR 54.29 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 the license renewal application (LRA) that affect aspects of the review. During the NRC's review of the LRA, 10 CFR 54.21(b) requires the applicant to identify any change to the CLB that materially

affects the contents of the LRA. In the past, these issues or separate licensing actions, examples of which are listed below, have prevented the NRC from concluding that the applicant has demonstrated that it will adequately manage the effects of aging. Whether these issues need to be considered in the license renewal review depends on the effects with the required finding of 10 CFR 54.29(a) regarding aging management for structures and components and evaluation of time-limited aging analyses (TLAAs).

SUMMARY OF ISSUE

Current Part 50 operating license holders are submitting Part 54 license renewal applications which may not reflect the consideration of current operating license issues and the changing status of the CLB of their plants. Specifically, the NRC staff has observed the following examples of such issues:

- a significant and unique change to the CLB which affects the applicant's ability to define the scope of license renewal; and
- a current operating issue which affects an applicant's ability to define its aging management programs (AMPs).

These examples highlight some issues that may affect the NRC staff's license renewal review. These issues and other similar issues may require more resources from the applicant and the NRC staff to address, potentially delaying or even postponing the LRA review schedule.

Although current combined license holders have yet to commence operation, the information in this RIS may be useful in developing and implementing their operational programs in a manner which facilitates 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 and unique 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 concurrent with the license renewal application. To comply with 10 CFR 54.21(a)(3), license renewal applicants must ensure its scope is reflective of its current CLB.

These challenges are highlighted when applicants submit their LRA concurrent with other major licensing actions. For example, the NRC's review and applicant's implementation of an 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. The changes to such areas of the CLB also can result in significant modifications to major balance-of-plant equipment. Another example is a license amendment request to transition the existing Fire Protection Program to a program based on National Fire Protection Association Standard (NFPA) 805, "Performance-Based Standard for Fire Protection for Light Water Reactor Electric Generating Plants," 2001 Edition. Such license amendment requests can involve modifications to the existing plant configuration in transitioning to the NFPA 805 program, which can include the addition and removal of fire protection SSCs under the CLB.

When the review of these types of major licensing actions is concurrent with the license renewal review, applicants should give extra consideration to the possibility of significant and unique changes to the CLB that materially affect the LRA. Such changes may necessitate new AMPs and TLAAAs or introduce new and significant aging effects and mechanisms which could result in the addition of multiple aging management review line items to the LRA. Examples of CLB changes that potentially are not significant and unique such that the LRA would not be materially affected would 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 are concurrent 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 and unique changes to the CLB affect the license renewal review depends on the timing of when the CLB change is implemented. Figure 1, "CLB Change and LRA Review Timeline," below shows different scenarios of CLB changes and their relationship to the license renewal review. The figure identifies four different scenarios for changes to the CLB, labeled A through D. Scenario A marks a CLB change that occurs before the LRA is submitted. Scenario B marks a CLB change that occurs prior to 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 the renewed license has been issued.

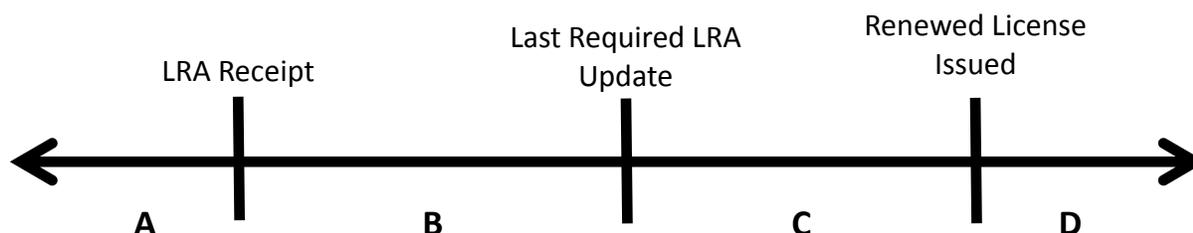


Figure 1 CLB Change and LRA Review Timeline

If the CLB change is implemented prior to the LRA receipt, as shown in Scenario A of Figure 1, the LRA should reflect the applicable CLB changes prior to submission in accordance with the requirements of 10 CFR 54.21(a), (c), and (d) and Part 54.22.

In Scenario B, CLB changes are reported pursuant to 10 CFR 54.21(b). Per the schedule set forth in 10 CFR 54.21(b), license renewal applicants must amend the LRA to identify any CLB changes that materially affect the contents of the LRA. The last update to the LRA that the applicant is required to submit is at least three months prior to the scheduled completion of the NRC review. This last annual 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 will evaluate these CLB changes for significant and unique changes and therefore may need additional time to make the finding required by 10 CFR 54.29(a). The NRC will issue its Safety Evaluation Report when all open items have been closed, including any open items created by the reported CLB changes.

If the CLB change is implemented after the last required LRA update, but prior to the renewed license decision, as shown in Scenario C of Figure 1, the NRC will still evaluate known CLB changes that materially affect the LRA for significant and unique changes. The NRC will review these changes to determine if they affect the staff's finding required by 10 CFR 54.29(a). If there is an impact to this finding, the NRC reserves the right to extend the schedule to review the CLB changes and their effects on the aging management activities and TLAAAs prior to making its 10 CFR 54.29(a) finding. If the renewed license is approved, these CLB changes may be subject to the 10 CFR 54.37(b) reporting requirements. CLB changes that occur after the renewed license is approved, as illustrated in Scenario D, may also be subject to the 10 CFR 54.37(b) reporting requirements. Regulatory Issue Summary 2007-16, Rev. 1, "Implementation of the Requirements of 10 CFR 54.37(b) for Holders of Renewed Licenses," provides additional information on these post-renewal reporting requirements.

2. Issues affecting the content of an aging management program.

In accordance with 10 CFR 54.21, each license renewal applicant must demonstrate that the effects of aging will be adequately managed so that the intended functions of structures and components within the scope of license renewal will be maintained for the period of extended operation. NUREG-1801, Revision 2, "Generic Aging Lessons Learned (GALL) Report," describes a method acceptable to the NRC staff for these demonstrations. However, for plant-specific technical issues, the applicant needs to provide a sufficient technical basis to justify the adequacy of the proposed AMPs and TLAAAs in order to meet 10 CFR 54.21. When an applicant does not provide an adequate technical basis, the NRC staff cannot complete its review of the LRA.

For example, when an applicant identifies an aging mechanism for an SSC which is subject to an aging management review under 10 CFR 54.21(a) but for which the program elements of a GALL Report-based AMP may not be prescriptive, such as reaction with aggregates in concrete structures, it is incumbent upon the applicant to augment the program, or develop a new plant-specific AMP, to demonstrate that the effects of aging will be adequately managed. Another example would be a design basis change to a structure or component within the scope of license renewal. By changing the design basis, such as rebuilding the containment building, the applicant needs to determine if the current aging management activities are adequate or if new and appropriate aging management activities need to be defined. An additional example is the applicant's identification of a degraded condition of a structure or component within the scope of license renewal, such as a degraded reactor vessel closure stud; in this example, the applicant must determine if any aging effects are associated with the degradation. The applicant can propose to manage the aging effects using an AMP based on the GALL Report or a plant-specific AMP, but the internal operating experience must support the proposed AMP's ability and effectiveness to adequately manage the effects of aging through the period of extended operation. The above examples illustrate some of the ways that licensees could meet 10 CFR 54.21.

In order to make the finding required by 10 CFR 54.29(a), for plant-specific current operating issues, the NRC staff needs a sufficient technical basis from which to evaluate the adequacy of the applicant's aging management activities. Therefore, license renewal applicants should ensure that their aging management activities have been developed based on a full understanding of the scope of license renewal and the aging effects affecting plant structures and components within that scope.

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 affects a determination on license renewal. This RIS requires no action or written response. Therefore, the RIS does not contain a new or changed NRC staff position or an interpretation of these regulations that would constitute backfitting as defined in 10 CFR 50.109, or represent an inconsistency with applicable issue finality provisions in 10 CFR Part 52.

FEDERAL REGISTER NOTIFICATION

A notice of opportunity for public comment on this RIS was not published in the *Federal Register* because it is informational and pertains to an NRC staff position that does not represent a departure from current regulatory requirements and practice.

CONGRESSIONAL REVIEW ACT

The NRC has determined that this RIS is not a major rule as designated by the Congressional Review Act (5 U.S.C. 801-808) and, therefore, is not subject to the Act.

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 request for information or an information collection requirement unless the requesting document displays a currently valid OMB control number.

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Please direct any questions about this matter to the technical contact listed below.

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