

NEI Position on Implementation of 10 CFR 54.37(b)

10 CFR 54.37 specifies the actions that are required by the holder of a renewed license:

§ 54.37(b)

After the renewed license is issued, the FSAR update required by 10 CFR 50.71(e) must include any systems, structures, and components newly identified that would have been subject to an aging management review or evaluation of time-limited aging analyses in accordance with § 54.21. This FSAR update must describe how the effects of aging will be managed such that the intended function(s) in § 54.4(b) will be effectively maintained during the period of extended operation.

Discussion

Based on the industry experience gained during preparation of numerous license renewal applications (LRAs) and license renewal guidance documents, NEI has coordinated development of a common industry position on implementation of 10 CFR 54.37(b). This industry position addresses the meaning of the words “newly identified”. The NRC discussion in the Statements of Consideration (SOC) for the 1995 license renewal rule indicates that “newly identified” refers to systems, structures, and components (SSCs) that were installed in the plant prior to approval of the license renewal application. However, NRC Inspection Manual 71003 indicates that the NRC will be verifying that newly installed SSCs must be included in an aging management program. Because of this apparent contradiction, NEI has prepared the following position. We request that the NRC accept the industry position, for the reasons discussed in this paper. Further, we request that the NRC Staff indicate its acceptance of this position by issuing as a Regulatory Issue Summary.

Position

10 CFR 54.37(b) must be implemented to include “newly identified” SSCs in the Final Safety Analysis Report (FSAR) update required by 10 CFR 50.71(e) when all of the following conditions occur:

- There is a change to the current licensing basis (CLB)
- The change to the CLB impacts SSCs that were not in scope for license renewal when the LRA was approved

- The SSCs would have been in scope of LR based on the changed CLB, if 10 CFR 54.4(a) were applied to the SSCs in the above

Likewise, SSCs that are plant additions or modifications that are installed after the new license is issued are not subject to the provision of 10 CFR 54.37(b).

Bases for Position

1. *Design controls under 10 CFR 50 are adequate to maintain the functionality of SSCs installed both during the initial license term and during the extended operating term, after issuance of the renewed license. In both cases, SSCs will be designed and maintained to be acceptable for the license term applicable at the time of installation.*

Existing NRC regulatory requirements for adequate design and for ongoing inspections, surveillance, etc. will ensure that systems, structures, and components will function as needed to maintain the current licensing basis and the design basis. This is a regulatory requirement for all plants, whether or not they chose to renew a plant operating license under 10 CFR Part 54.

This conclusion is consistent with the NRC's first principle of license renewal, which emphasizes the adequacy of the current licensing basis.

Additional Support

- a. Programs and activities exist for managing age-related degradation during the current operating term of a nuclear plant. These programs are improved through the corrective action process, assessments, and review of operating experience during the original 40-year license term. These improvements will continue during the period of extended operation.
- b. Some existing programs and activities were further improved to manage applicable aging effects during the period of extended operation; and in some cases, new programs and activities were developed to provide added assurance that aging effects will be adequately managed during the period of extended operation; but the existing aging management programs are adequate for the initial 40-year license term.
- c. The first principle of license renewal holds that the CLB is adequate. Therefore, the modification process in accordance with the CLB is adequate. For example, the modification process is adequate to address SSCs installed at year ten¹ (10) of the original 40-year license term without consideration of license renewal. Logically, the same modification process is then adequate to address SSCs installed at year 30¹ of the 60-year renewed license term. In

both cases, the remaining license term is 30 years.¹ If the CLB process is adequate during the original license term, the same process is adequate during the renewed license term.

2. *The fundamental basis of Part 54, as reflected in both the 1991 and the 1995 final rules, is that the license renewal review focuses on managing the effects of aging in the extended period of operation.*

The 1991 version of the rule focused on managing age-related degradation unique to license renewal (ARDUTLR), which occurs during the period of extended operation. The 1995 version of the rule requires the applicant to demonstrate that the effects of aging will be managed to maintain the intended functions during the period of extended operation. The focus in the 1995 version, while reviewing existing aging management programs, is on maintaining functionality during the period of extended operation. The salient point is that both versions of the rule are focused on aging after 40 years for components that were installed with consideration of the initial 40-year license term. Components that are installed after the renewal is issued will be designed and maintained considering the renewal term, and thus are not the focus of aging management reviews performed for Part 54.

3. *The 1995 license renewal rule establishes the basis for SSCs discussed in 10 CFR 54.37(b) as being in the past and as existing SSCs in the license renewal process.*

A significant observation to establishing the basis to this position paper is that the 1995 version of Part 54 changed 10 CFR 54.37(b) to indicate that the SSCs covered by this part are those that were in the plant prior to the issuance of the new license, were not in scope when the LRA was prepared, but due to changes in the CLB would have been in scope if the scoping criteria of 10 CFR 54.4(a) were applied later. This position in part is based on and supported by words in the Statement of Consideration (60 FR 22484; 5/8/95): “The Commission believes that it is important to note that the systems, structures and components discussed in Section 54.37(b) are those newly identified systems, structures and components that would have been subject to an aging management review in the license renewal process.” “SSCs newly identified” are referenced to the past and as existing equipment. The only SSCs “that would have been subject to an aging management review in the license renewal process” are the existing SSCs at the time of the license renewal process, not SSCs installed after issue of the new license as indicated in the wording in the 1991 Rule. These SSCs would be structures and components that have the potential to be in service beyond the

¹ These time periods are examples only, the time of the modification and the remaining plant license term could be any period from 1 to 40 years.

license term as it existed at the time of the SSC's design and installation, but were not included in the aging management review supporting the LRA.

4. *SSCs added to the plant after the new license is issued will be designed and maintained for operation up to the end of the renewed license term. If the licensee chooses to renew the license a second time, the rule would require inclusion of these SSCs in the integrated plant assessment (IPA) for the second renewal process.*

If the licensee chooses to obtain a second renewed license and operate the plant for up to 80 years, Part 54 will require inclusion of the “new” SSCs installed after issuance of the first renewal license in the second IPA. This second IPA will identify whether these “new” SSCs are in scope and subject to aging management review, and identify needed aging management programs. The IPA process is focused on equipment that has the potential to operate for greater than its original design life. As the NRC stated in the 1995 license renewal rule, “the IPA process is not intended to demonstrate absolute assurance that structures or components will not fail, but rather that there is reasonable assurance that they will perform such that the intended functions, as delineated in Sec. 54.4, are maintained consistent with the CLB.” See 60 Fed.Reg. 22,479 (May 8, 1995).

For new SSCs added to the plant after the renewal license is issued, the second renewal process provides reasonable assurance that the new SSCs added to the plant will perform the intended function during the additional 20 years of operation. Prior to the additional 20 years, NRC regulations in 10 CFR Part 50 provides this assurance (see Item 1).

5. *10 CFR Part 54 neither specifies nor implies requirements for ongoing programmatic controls, like those specified for fire protection (10 CFR 50.48) or environmental qualification (10 CFR 50.49).*

10 CFR 50.48 and 10 CFR 50.49 includes requirements for processes or programs that are ongoing for the duration of the operating license (See Attachment 1, 10 CFR 50.48(a) and 10 CFR 50.49(a)). By contrast, the language of 10 CFR Part 54 contains no language that either directs or implies the need for ongoing processes or programs, with the possible exception of 10 CFR 54.37(b). Section 54.37(b) requires the renewal licensee to update the UFSAR and describes the specific contents of the update from the original supplement required by 10CFR54.21(d). (For this reason, Section 54.37 is entitled: “Additional records and record keeping requirements.”)

A plant's licensing basis during the license renewal period will consist of the CLB and new commitments to manage and correct age-related degradation. Existing processes and programs will maintain these commitments. A separate process or program is not required since existing processes and programs like commitment management and the 50.59 review process are in place. These programs or processes maintain commitments to activities that are in the USFAR or could be added (new) to the USFAR supplement to maintain compliance with the rule.

10 CFR Part 54 does not require an ongoing aging management review of modifications involving installation of new equipment after issuance of a renewed license. As previously discussed, 10 CFR 54.37(b) is an FSAR update requirement that refers to scoping of SSCs existing prior to LRA approval. In addition, Section 54.33 ("Continuation of CLB and Conditions of Renewed License") does not have words that reflect or imply this as a requirement. This section is where you would expect such a review to be specified if this review was required to be performed as an ongoing activity. Based on the above, we conclude that NRC regulations do not require licensees to review modifications involving installation of new or replacement equipment post-license renewal, until the license is renewed for a second time in accordance with Part 54 rules. Only changes that affect functions of existing SSCs will require review.

Conclusion

10 CFR Part 50 is adequate to maintain functionality of SSCs for the initial license term. Part 54 focuses on aging of SSCs after the initial license term. The 1995 SOC establishes the basis for SSCs discussed in 10 CFR 54.37(b) as those SSCs that existed prior to license renewal. Any new SSCs added to the plant after the new license is issued will be designed and maintained for the term of the renewed license, and the Part 54 Rule could require these SSCs to be in the IPA for the second renewal process. There are no words in Part 54 indicating the need for an ongoing program. NEI concludes that 10 CFR 54.37(b) must be implemented when the following conditions occur:

- a. There is a change to the CLB, and
- b. This change impacts SSCs that were not in scope when the LRA was approved, and
- c. This SSC would have been in scope of LR based on the changed CLB , if 10 CFR 54.4(a) were applied to the SSC in (b) above.

Specifically, SSCs that are added after LRA approval (newly installed SSCs) are not subject to the provision of 10 CFR 54.37(b). SSCs installed at the time of license renewal that are subsequently identified as performing license renewal intended functions associated with 10 CFR 54.4 (newly identified SSCs) are subject to the provision of 10 CFR 54.37(b).

ATTACHMENT 1

(10CFR50.48 Section (a)) and (10CFR50.49 Section (a))

FIRE PROTECTION (10CFR50.48 Section (a))

- (a) Each operating nuclear power plant must have a fire protection plan that satisfies Criterion 3 of Appendix A of this part. This fire protection plan must describe the overall fire protection program for the facility, identify the various positions within the licensee's organization that are responsible for the program, state the authorities that are delegated to each of these positions to implement those responsibilities, and outline the plans for fire protection, fire detection and suppression capability, and limitation of fire damage. The plan must also describe specific features necessary to implement the program described above, such as administrative controls and personnel requirements for fire protection and manual fire suppression activities, automatic and manually operated fire detection and suppression systems, and the means to limit fire damage to structures, systems, or components important to safety so that the capability to safely shutdown the plant is assured. The licensee shall retain the fire protection plan and each change to the plan as a record until the Commission terminates the reactor license and shall retain each superseded revision of the procedures for three years from the date it was superseded.

ENVIRONMENTAL QUALIFICATION OF ELECTRIC EQUIPMENT IMPORTANT TO SAFETY FOR NUCLEAR POWER PLANTS (10CFR50.49 Section (a))

- (a) Each holder of or an applicant for a license for a nuclear power plant, other than a nuclear power plant for which the certifications required under 50.82(a)(1) have been submitted, shall establish a program for qualifying the electric equipment defined in paragraph (b) of this section.