

March 15, 2002

Mr. Alan Nelson
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Washington, DC 20006-3708

Mr. David Lochbaum
Union of Concerned Scientists
1707 H Street, NW
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SUBJECT: LICENSE RENEWAL ISSUE: GUIDANCE ON THE IDENTIFICATION AND
TREATMENT OF STRUCTURES, SYSTEMS, AND COMPONENTS WHICH
MEET 10 CFR 54.4(a)(2)

Dear Messrs. Nelson and Lochbaum:

The purpose of this letter is to provide you with the opportunity to comment on the enclosed guidance on the identification and treatment of structures, systems, and components which meet the scoping criterion specified in 10 CFR 54.4(a)(2). This is consistent with our goal to more efficiently resolve license renewal issues identified by the staff or the industry, as outlined in NRR Office Letter No. 805, "License Renewal Application Review Process." Based on your response to this letter, the staff will decide how to finalize and implement this guidance.

The staff developed this guidance to ensure that scoping of non-safety-related structures, systems, and components, is conducted in accordance with the requirements of 10 CFR 54.4(a)(2), and is intended to supplement the position on the identification and treatment of seismic II/I components we provided to you by letter dated December 3, 2001. We are requesting comments on the proposed guidance and request that you provide us with a schedule for a timely resolution of this issue. The staff plans to incorporate this position into the improved renewal guidance documents (NUREGs 1800, and/or 1801) in a future update. It is also possible that comparable changes might be needed to NEI 95-10, Revision 3, "Industry Guidance for Implementing the Requirements of 10 CFR Part 54 - The License Renewal Rule." If you have any questions regarding this matter, please contact Hai-Boh Wang at 301-415-2958, or William Burton at 301-415-2853.

Sincerely,

/RA/

Christopher I. Grimes, Program Director
License Renewal and Environmental Impacts
Division of Regulatory Improvement Programs
Office of Nuclear Reactor Regulation

Project 690

Enclosure: As stated

cc w/encl: See next page

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DOCUMENT NAME: C:\Program Files\Adobe\Acrobat 4.0\PDF Output\54.4(A)(2) SCOPING CRITERIO~.wpd

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STAFF POSITION ON 54.4(a)(2) SCOPING CRITERION

1. BACKGROUND

Section 54.29 of 10 CFR Part 54 (the Rule) states that a renewed license may be issued by the Commission if the Commission finds that actions have been or will be taken with respect to the matters identified in 54.29(a)(1) and (a)(2) 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 CLB in order to comply with this paragraph are in accord with the Atomic Energy Act and the Commission's regulations. These matters include managing the effects of aging during the period of extended operation to assure the functionality of structures and components that have been identified to require review under Section 54.21(a)(1).

The Statements of Consideration (SOC) for the Rule state that the objective of a license renewal review is to determine whether the detrimental effects of aging, which could adversely affect the functionality of systems, structures, and components (SSCs) that the Commission determines require review for the period of extended operation, are adequately managed.

Section 54.4(a)(2) of the Rule states that all non-safety related SSCs whose failure could prevent satisfactory accomplishment of any of the functions identified in Section 54.4(a)(1) should be included within the scope of the Rule. The SOC provides additional guidance related to this scoping criterion. Specifically, the SOC states that "To limit this possibility for the scoping category relating to non safety-related systems, structures, and components... An applicant for license renewal should rely on the plant's CLB, actual plant-specific experience, industry-wide operating experience, as appropriate, and existing engineering evaluations to determine those non safety-related systems, structures, and components that are the initial focus of the license renewal review. Consideration of hypothetical failures that could result from system interdependencies that are not part of the CLB and that have not been previously experienced is not required." (Federal Register, Volume 60, No. 88, 22467).

2. DISCUSSION

The SOC articulates the underlying philosophy of the Rule; that during the period of extended operation, safety-related functions should be maintained in the same manner and to the same extent as during the current license term.

The staff must have reasonable assurance that the applicant has identified all non safety-related SSCs that meet the 54.4(a)(2) scoping criterion. To accomplish this, the applicant should clearly describe the methodology used to determine those non safety-related SSCs that meet this criterion. This description should include how plant-specific failures of non safety-related SSCs and industry failures of such SSCs were considered in this determination, and should identify whether consideration was given to non safety-related SSCs which may not have failed during the current term, but may have a reasonable expectation of failure during the extended term. Such consideration should be based on sound engineering judgement that assures the failure of those non safety-related SSCs would not occur during the extended period of operation. Information which formed the basis for the applicant's conclusions need

not be included in the application, but should be documented, auditable, and retrievable, in accordance with 10 CFR 54.37.

When demonstrating that failures of non safety-related SSCs would not adversely impact on the ability to maintain intended functions, a distinction must be made between non safety-related SSCs that are connected to safety-related SSCs and those that are not connected to safety-related SSCs. For a non safety-related SSC that is connected to a safety-related SSC, the non safety-related SSC should be included within the scope of license renewal up to the first seismic anchor past the safety/non-safety interface. Further, if the in-scope non safety-related structure or component is of the same commodity group (i.e., the same material/environment combination) as the safety-related structure or component to which it's connected, the same aging management programs should be applied to both the safety-related and non safety-related structures and components. If the in-scope non safety-related structure or component is not of the same commodity group, then aging management programs appropriate for the commodity should be applied.

For non safety-related SSCs which are not connected to safety-related piping or components or are beyond the first seismic anchor past the safety/non-safety interface, but have a spatial relationship such that their failure could adversely impact on the performance of a safety-related SSC's intended function, the applicant has two options when performing its scoping evaluation; a mitigative option or a preventive option. With the mitigative option, the applicant should demonstrate that plant mitigative features (e.g., pipe whip restraints, jet impingement shields, spray and drip shields, seismic supports, flood barriers) are provided which protect safety-related SSCs from failures of non safety-related SSCs. This demonstration should show that the mitigating devices are adequate to protect safety-related SSCs from failures of non safety-related SSCs regardless of failure location (consideration can be given to the likelihood of failure at a particular location based on sound engineering judgement). If this level of protection can be demonstrated, then only the mitigative features need to be included within the scope of license renewal. However, if an applicant cannot demonstrate that the mitigative features are adequate to protect safety-related SSCs from the consequences of failures of non safety-related SSC's, then the applicant should utilize the preventive option, which requires that the entire non safety-related SSC be brought into the scope of license renewal. An applicant may determine that, in order to ensure adequate protection of the safety-related SSC, a combination of mitigative features and non safety-related SSCs must be brought within scope. Again, it is incumbent upon the applicant to provide adequate justification for the approach taken with respect to scoping of non safety-related SSCs in accordance with the Rule.

To ensure that all relevant non safety-related SSCs are captured within the scope of the Rule, an applicant should consider not only its CLB, but also plant and industry operating experience. Operating experience includes all documented plant-specific and industry-wide experience which can be used to determine the plausibility of a failure. Documentation would include NRC generic communications and event reports, plant-specific condition reports, industry reports such as SOERs, and engineering evaluations.

3. CONCLUSION

On the basis of the guidance provided in the SOC, the staff expects applicants for license renewal to identify non safety-related SSCs whose failure could adversely impact intended

functions. Such SSCs are to be included within the scope of license renewal. The evaluation to determine which non safety-related SSCs are within scope should not consider hypothetical failures, but should, based on engineering judgement and operating experience, consider the likelihood of system failure during the extended period of operation. The information used to support the scoping determination should be documented and available for staff review.

NUCLEAR ENERGY INSTITUTE

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