

March 21, 2003

Mr. Alan Nelson
Nuclear Energy Institute
1776 I Street, NW., Suite 400
Washington, DC 20006-3708

SUBJECT: STAFF COMMENTS TO "INDUSTRY GUIDANCE ON REVISED 54.4 (a)(2)
SCOPING CRITERION (NON-SAFETY AFFECTING SAFETY)" FOR LICENSE
RENEWAL

Dear Mr. Nelson:

By letter dated February 24, 2003, the Nuclear Energy Institute (NEI) provided industry guidance in response to the proposed staff's interim staff guidance (ISG) letters dated December 3, 2001, and March 15, 2002, on the identification and treatment of structures, systems, and components (SSCs) consistent with the scoping criterion specified in 10 CFR 54.4(a)(2) for license renewal. The industry has developed this guidance to ensure that the scoping of non-safety related SSCs is conducted in a consistent manner by applicants requesting a renewed license in accordance with the requirements of 10 CFR 54.4(a)(2). Based on the staff's review of the draft guidance, we are providing the enclosed comments. We would like to schedule a public meeting to discuss these comments for a timely resolution of this ISG.

For the resolved ISGs, it is also possible that comparable changes might need to be made 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 Peter Kang at 301-415-2779.

Sincerely,

/RA

Pao-Tsin Kuo, 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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STAFF COMMENTS ON INDUSTRY GUIDANCE
ON
54.4(a)(2) SCOPING CRITERION

1. The position paper should state the staff's evaluations have indicated that a combination of a desk-top review of structures, systems, and components (SSCs) and a plant walkdown of areas containing a combination of safety-related and non-safety-related SSCs is the most effective means of identifying SSCs which meet the criterion, and that the results of these activities should be maintained in a retrievable and auditable form.

2. Section 5.2, Preventive Option

The Nuclear Energy Institute (NEI) position states that pipe whip, jet impingement, spray or flooding from non-safety-related (NSR) systems could create additional failures of safety-related (SR) SSCs. The staff believes that this sentence should be revised as follow: "Physical impacts, such as pipe contact (pipe falling such that it physically contacts safety-related equipment), pipe whip, jet impingement, spray or flooding, etc., from NSR SSCs could create additional failures of SR SSCs."

This revision specifically identifies the need to consider the potential for structures and components (SCs) falling onto SR SCs and is consistent with industry operating experience with identified failures.

3. Section 5.2.1.1, Loss of a Safety-Related Component vs Loss of a Safety-Related Function

The NEI position implies that a NSR SSC need not come into scope if its failure will not adversely impact on a safety-related function. The staff does not agree. This issue has been the topic of discussion during all license renewal application (LRA) audit review activities, and to date applicant's have not implemented such an approach.

The Commission in the Statement of Consideration (SOC) for the Rule clearly articulated that the applicant should consider the potential for failure of safety-related systems, structures, or components from performing their intended function(s) and did not limit the scope to that of system intended function(s) solely.

Specifically, the SOC states, in part: "The first two categories of systems, structures, and components discussed in the new scope section (Sec. 54.4(a)(1) and (a)(2)) are the same categories defined in the previous definition of systems, structures, and components important to license renewal. These scoping categories concern (1) all safety-related systems, structures, and components, and (2) all non-safety related systems, structures, and components that support the function of a safety-related system, structure, or component or whose failure could prevent a safety-related system, structure, or component from satisfactorily fulfilling its intended function(s)."

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The staff has therefore taken the position that all non-safety-related systems, structures, and components that support the function of a safety-related system, structure, or component or whose failure could prevent a safety-related system, structure, or component from satisfactorily fulfilling its intended function(s), should be initially included in scope.

4. Section 5.2.1.2, Equipment Used to Establish Initial Conditions

The NEI position states that the function of NSR equipment to establish initial conditions for equipment operation or accident assumptions does not constitute the basis for inclusion within the scope. The staff does not agree. The determination to include SSCs are needed to ensure initial conditions is plant-specific, and has been addressed this way in previous license renewal application (LRA) reviews. The applicant should identify design basis events (DBE) and whether the NSR SSCs are needed to ensure the initial plant conditions assumed in addressing the DBE

5. Section 5.2.2.1, Systems and Components Containing Air/Gas

The NEI position states that operating experience for systems containing air/gas has shown no failures due to aging that have adversely impacted the accomplishment of a safety function, and that a review of site-specific operating experience should be performed to verify this assumption. This implies that the basis for exclusion from scope is plant-specific. The staff agrees and requests that NEI revise the guidance to state that the applicant should include the references to industry and plant-specific operating experience credited for establishing this position. The review results should be maintained in a retrievable and auditable form.

6. Section 5.2.2.2.1, High-Energy Systems

The staff needs clarification about what is being addressed in this section. Specifically, does the discussion of physical impact of high-energy systems include seismic and non-seismic components, or is this addressed in Subsection 5.2.2.3 (see below)? Also, is pipe failure/separation considered a credible source of physical impact?

7. Section 5.2.2.2.2, Moderate-/Low-Energy Systems

The staff needs clarification about what is being addressed in this section. Specifically, does the discussion of spatial interactions of moderate- and low-energy systems include seismic and non-seismic components, or is this addressed in Subsection 5.2.2.3 (see below)? Also, is pipe failure/separation considered credible source of physical impact?

8. Section 5.2.2.3, Non-seismic and Seismic II/I Piping and Supports

The NEI paper states that this section is intended to describe the potential spatial interaction of NSR piping systems that may fall on or otherwise physically impact SR SSCs. It states that operating experience confirms that pipe segments do not fall during seismic events. The staff agrees, but requests that the first sentence be revised to read

“This section is intended to describe the potential spatial interaction of non-safety-related piping systems that may fall on or otherwise physically impact safety-related SSCs during a seismic event.”

Given this clarification, the staff believes that the discussion of the impacts of the failure of high-, moderate, and low-energy system components described in Sections 5.2.2.2.1 and 5.2.2.2.2 could be revised to clarify that failure of pipe segments due to non-seismic events can and do occur, and because of this, the physical impact of falling pipes should be considered when determining whether NSR piping should be brought into scope.

9. Section 5.2.3.1, Exposure Duration

The NEI position states that only NSR SSCs whose failure could result in short-term failure of a SR SSC need not be included within scope. The staff does not agree. Neither the Rule, nor the SOC, considers duration of the failure of a SR SSC or function due to the failure of a NSR as a factor in determining whether a NSR SSC should be in scope. Further, this position has not been taken by previous applicants.

10. Section 5.2.3.2, Fail-Safe Components

The NEI position states that NSR SSCs that could only cause a failure of a fail-safe component, would not be considered in scope. The staff disagrees. It is not clear from the position taken by industry why a failure of a NSR SSC cannot impact the ability of a SR SSC from attaining its fail-safe state. The staff requests further dialog with the industry on this issue to specifically confirm that a NSR SSC cannot impact a fail-safe SR SSC in such a manner as to preclude the SR SSC from fulfilling its intended function(s).

11. Section 6.0, Industry Guidance - Preventive Option

In Item F, the NEI position states that the 54.4(a)(2) scoping methodology should be documented, along with the bases for the engineering judgements. The staff agrees. However, in addition, the staff believes that to ensure that actions have been identified and have been or will be taken such that there is reasonable assurance that the SSCs that meet the 54.4(a)(2) criterion are adequately managed during the period of extended operation, the applicant will need to identify for the staff the components which meet 54.4(a)(2) and are subject to an aging management review, along with the associated aging management information (material, environment, aging effect(s), and aging management program/activity). We suggest the following revision:

“Document the plant-specific 54.4(a)(2) scoping methodology. The results from the application of this methodology will be plant-specific (commodity lists, component lists, or boundary drawings, etc.) and should be documented, including the bases for the engineering judgements made during this review.”

NUCLEAR ENERGY INSTITUTE

Project No. 690

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