

NUCLEAR UTILITY GROUP  
ON EQUIPMENT QUALIFICATION

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DOCKET NUMBER  
PROPOSED RULE **PR 2,51054**  
(59FR46574)

Mr. John C. Hoyle  
Acting Secretary, U.S. Nuclear Regulatory Commission  
Washington, D.C. 20555

**Re: Nuclear Power Plant License Renewal;  
Proposed Revisions (59 Fed. Reg.  
46574 (September 9, 1994))**

Dear Mr. Hoyle:

I. Introduction

The Nuclear Utility Group on Equipment Qualification ("NUGEQ")<sup>1/</sup> hereby submits the following comments on the Nuclear Regulatory Commission's ("NRC") proposed rule to revise its license renewal regulations at 10 C.F.R. Part 54.<sup>2/</sup> The proposed rule is a significant improvement over the current Part 54 license renewal framework, and NUGEQ congratulates the NRC on its efforts. Nevertheless, the NUGEQ believes that clarification is warranted with regard to certain issues related to the interaction of the rule with environmental qualification of electrical equipment pursuant to 10 C.F.R. § 50.49. In particular, NUGEQ respectfully requests the NRC to:

- clarify the specific reference to equipment qualified pursuant to 10 C.F.R. § 50.49 in the license renewal scope definition;

<sup>1/</sup> The NUGEQ is comprised of 36 electric utilities in the United States and Canada, including NRC licensees authorized to construct and/or operate over 100 nuclear power reactors. The NUGEQ was formed in 1981 to address and monitor topics and issues related to equipment qualification, primarily with respect to the environmental qualification of electrical equipment pursuant to 10 C.F.R. §50.49.

<sup>2/</sup> 59 Fed. Reg. 46574 (September 9, 1994).

- acknowledge that emerging technologies may permit condition monitoring of passive components (e.g., electrical cable) that would preclude the need for aging management reviews of that equipment; and
- clarify that the rule does not require an evaluation of time-limited aging analyses for qualified equipment that is changed out on a regular basis.

The primary thrust of these comments is to assure clarity in the Commission's direction regarding certain key elements of the license renewal rule as it applies to 10 C.F.R. § 50.49 equipment. The NUGEQ believes such clarity is important to avoid potential confusion in the future application of the license renewal rule and to minimize licensees' implementation costs.

In addition, NUGEQ strongly agrees with the NRC's determination that, with respect to non-safety related systems structures and components ("SSCs"), the license renewal review would not require consideration of "hypothetical failures that could result from system interdependencies that are not part of the current licensing bases and that have not been previously experienced..."<sup>2/</sup>

Our detailed comments appear below. NUGEQ also supports the comments filed by the Nuclear Energy Institute ("NEI").

## II. Discussion

### A. Scope Of License Renewal Rule

The defined scope of the proposed license renewal rule, Proposed § 54.4, is divided into three categories. The third category, Subsection (a)(3) of Section 54.4, explicitly includes within the scope of the rule those SSCs:

relied on in safety analyses or plant evaluations to perform a function that demonstrates compliance with the

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<sup>2/</sup> 59 Fed. Reg. at 46579-80.

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Commission's regulations for . . . environmental qualification (10 C.F.R. § 50.49).<sup>4/</sup>

For the following reasons, the NUGEQ proposes that the Commission clarify the intent and effect of that provision.

The definition of scope in the NRC regulation governing environmental qualification of electrical equipment, 10 C.F.R. §50.49, is also divided into three categories (Subsections (b)(1)-(3)). Significantly, there is a direct parallel between the § 50.49 (b)(1) and (2) equipment scope definitions, and the Proposed § 54.4(a)(1) and (2) SSC scope definitions. A similar parallel does not exist between Proposed § 54.4 and the other provisions referenced in §54.4(a)(3).<sup>2/</sup>

As a practical matter, therefore, the only purpose to be served by the third element of Proposed § 54.4, i.e., Subsection (a)(2), with respect to 50.49 equipment is to assure inclusion in the license renewal rule of § 50.49 components that were not already captured by Proposed § 54.4 (a)(1) and (2), i.e., § 50.49 (b)(3) equipment.

*Accordingly, to assure clarity and consistency between the respective regulatory schemes, NUGEQ recommends that the language of Proposed 54.4(a)(3) that concerns Section 50.49 be modified to reference only 50.49(b)(3).* Absent such clarification, Proposed 54.4(a)(3) might be read to suggest that licensees are to review "safety analyses or plant evaluations" to reassess the entire scope of each plant's §50.49 equipment. In reality, the only §50.49 equipment that remains to be captured by Proposed Section 54.4(a)(3) is that equipment identified in § 50.49(b)(3).

In addition, even if the NRC does not clarify Proposed Section 54.4(a)(3) as requested above, NUGEQ proposes that the

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<sup>4/</sup> Proposed 10 C.F.R. § 54.4(a)(3). This section also identifies as within the scope of the rule SSCs relied on in safety analyses or plant evaluations to perform a function that demonstrates compliance with fire protection (10 C.F.R. § 50.48), pressurized thermal shock (10 C.F.R. § 50.61), anticipated transient without scram (10 C.F.R. § 50.62), and station blackout (10 C.F.R. § 50.63).

<sup>2/</sup> See footnote 4.

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following language be added to the SOC of the final rule with respect to Section 54.4:

*For purposes of Section 54.4, the scope of Section 50.49 equipment to be included within Section 54.4 is that equipment already identified by licensees under 10 C.F.R. §§ 50.49(b)(1)-(3). Licensees may rely upon their CLB listing of 10 C.F.R. § 50.49 equipment, as required by 10 C.F.R. § 50.49(d), for purposes of satisfying Section 54.4 with respect to equipment within the scope of Section 50.49.*

This clarification will provide further assurance, in addition to the above suggested revision to the regulation itself, that licensees will not be expected to conduct further evaluations or analyses to identify Section 50.49 equipment to be included within the Section 54.4.

**B. Long-Lived, Passive Components**

Proposed Section 54.21 directs that an aging management review be performed for passive, long-lived components. Proposed Section 54.21(a)(1)-(3). The Commission acknowledges, however, that a licensee may be able to show that a replacement program based on performance or condition for passive components can provide reasonable assurance that performance will be maintained throughout the extended license term.<sup>6/</sup> NUGEQ requests that the Commission include in the final rule SOC an example of passive component condition monitoring capabilities that may ultimately be used in this context. Such a comment would be consistent with the Commission's discussion noted above in the proposed rule SOC with respect to licensees' use of site-specific justifications concerning passive components.<sup>7/</sup>

Specifically, research regarding and development of condition monitoring techniques for electrical cable -- explicitly identified as a passive, long-lived component in Proposed § 54.21(a)(1)(i) -- is underway both in the United States (including

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<sup>6/</sup> 59 Fed. Reg. at 46585.

<sup>7/</sup> 59 Fed. Reg. at 46585.

Commission-sponsored research) and in Europe.<sup>8/</sup> Accordingly, NUGEQ requests that the following language be included in the SOC discussion in the final rule concerning passive, long-lived components:

*Cable condition monitoring methodologies now being developed may support a licensee demonstration that a replacement program has been established based on performance or condition for electrical cables that will provide reasonable assurance of continued performance of their intended function throughout the period of extended operation.*

#### C. Time-Limited Aging Analyses

The proposed rule would require, as part of the technical application for license renewal, a licensee evaluation of time-limited aging analyses for SSCs within the scope of the license renewal rule.<sup>9/</sup> In the SOC for the proposed rule, the NRC specifically included environmental qualification of electrical equipment among the types of time-limited aging analyses that would have to be addressed.<sup>10/</sup> However, the proposed definition of time-limited aging analyses would exclude from consideration analyses that are not "based on explicit assumptions defined by the current operating term of the plant."<sup>11/</sup> In this regard, the NRC noted that:

time limited aging analyses based on an assumed period of plant operation short of the current operating term should be addressed within the

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<sup>8/</sup> These research efforts were discussed during the November, 1993, EQ Workshop. The workshop results were published in May 1994. See "Workshop on Environmental Qualification of Electric Equipment," NUREG/CP-0135 (May 1994), Session C, Condition Monitoring.

<sup>9/</sup> Proposed 10 C.F.R. § 54.21(c).

<sup>10/</sup> 59 Fed. Reg. at 46586.

<sup>11/</sup> Proposed 10 C.F.R. § 54.3.

original license and are of no concern for license renewal.<sup>12/</sup>

The NUGEQ believes the Commission intended that equipment, including 10 C.F.R. § 50.49 equipment, that is replaced on a frequency that is less than the duration of the current operating license term would not be included in the time limited aging analysis evaluation.

However, the terms of the proposed rule could be misinterpreted. Where a § 50.49 component's qualified life is less than 40 years, its replacement schedule could result in a qualified life for that equipment that extends beyond the current license term. For such equipment the "assumed period of plant operation" for the qualified life determination could be said to exceed (rather than be "short of"<sup>13/</sup>) the "current operating term." For example, a component with a fifteen year qualified life would be replaced at year 15 and again at year 30. The qualified life at the second replacement would exceed the remaining operating term. A restrictive reading of the Proposed Rule and SOC could suggest that the existing time-limited aging analysis be evaluated. This certainly does not appear to be the Commission's intent when it proposed this particular exclusion from the time-limited aging analysis review.

NUGEQ requests that the NRC clarify this potential ambiguity by explicitly noting in the SOC that the time-limited aging analyses evaluation does not cover short-lived (i.e., less than 40 year qualified life) components under 10 C.F.R. § 50.49. This could also serve to clarify the Commission's intent with respect to time-limited aging analyses in other contexts. We suggest the following language be included in the final rule SOC:

*For example, a component qualified pursuant to 10 C.F.R. § 50.49 with a qualified life of 15 years would be replaced in years 15 and 30 of operation. Because the duration of the qualified life (i.e., 15 years) is less than the duration of the current license term (e.g., 40 years), the supporting time-limited aging analysis would not require evaluation under Section 54.21(c). Such equipment may continue to be replaced at 15 year intervals throughout the new license term.*

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<sup>12/</sup> 59 Fed. Reg. at 46586.

<sup>13/</sup> Id.

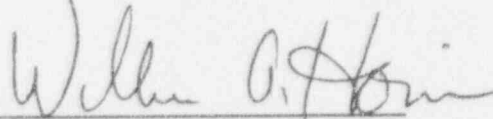
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D. Consideration Of Hypothetical Failures

The statement of considerations for the proposed rule makes clear that, with respect to non-safety related SSCs, the license renewal review would not require consideration of hypothetical failures that could result from system interdependencies, that are not part of the current licensing bases, and that have not been previously experienced.<sup>14/</sup> NUGEQ commends the NRC's recognition of the potential difficulties that consideration of hypothetical failures could create for licensees. NUGEQ strongly supports the NRC's position on this matter.

We appreciate the opportunity to comment upon the license renewal proposed rule.

Respectfully submitted,



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<sup>14/</sup> 59 Fed. Reg. at 45579-80.