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SQUG

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PROPOSED RULE PR 50
(68FR 26511)

August 12, 2003

Secretary
U.S. Nuclear Regulatory Commission
Washington, DC 20555-0001
ATTN: Rulemakings and Adjudications Staff

Re: Comments on Proposed Rule Permitting Risk-Informed Categorization and Treatment of Structures, Systems and Components for Nuclear Power Reactors (68 Fed. Reg. 26,511 (May 16, 2003)) (RIN 3150-AG42)

Please find herein comments submitted by the Seismic Qualification Utility Group ("SQUG"),[1] on the above-captioned proposed rule. If enacted, the rule would create a new 10 C.F.R. § 50.69 providing an alternative approach for nuclear power reactor licensees to establish requirements for treatment of plant structures, systems, and components ("SSCs"). This approach, which is risk-informed in nature, would allow licensees to categorize their SSCs based on safety significance and thereafter revise, in some cases, the "special treatment" requirements previously applied to those SSCs, including requirements related to seismic qualification.[2] Adoption of the Section 50.69 methodology (which would occur by license amendment) would be voluntary, such that licensees could choose to retain their current SSC categorization and treatments with no regulatory penalty or increased burden.[3]

One underlying premise of the proposed rule is that design conditions under which equipment is expected to perform, such as environmental conditions or seismic conditions, must continue to be met when applying alternative treatment for RISC-3 SSCs.[4] Specifically, the proposed rule states that "[d]esign functional requirements and bases for RISC-3 SSCs

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1 The SQUG is a consortium of nuclear utilities that follows NRC activities related to seismic qualification of equipment.

2 Specific to the comments provided herein, Section 50.69(b)(1)(x) proposed that a licensee may voluntarily comply with the requirements in Section 50.69 as an alternative to "Appendix A to Part 100, sections VI(a)(1) and VI(a)(2), to the extent that these regulations require qualification testing and specific engineering methods to demonstrate that SSCs are designed to withstand the Safe Shutdown Earthquake and Operating Basis Earthquake."

3 *See generally* Proposed Rule, "Risk-Informed Categorization and Treatment of Structures, Systems and Components for Nuclear Power Reactors," 68 Fed. Reg. 26,511 (May 16, 2003) ("Proposed Rule").

4 The proposed rule would establish four categories for equipment. The alternative treatment discussion herein applies to the Risk-Informed Safety Class ("RISC")-3 SSCs, which are those safety-related SSCs that perform low safety-significant functions. *See* 10 C.F.R. §50.69(a).

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must be maintained and controlled. RISC-3 SSCs must be capable of performing their safety-related functions including design requirements for ... seismic conditions (design load combinations of normal and accident conditions with earthquake motions)."[5] The alternative treatment applied to RISC-3 SSCs includes design control; procurement; inspection, maintenance, testing, and surveillance; and corrective action "to provide reasonable confidence in the capability of RISC-3 SSCs to perform their safety-related functions under design basis conditions throughout their service life."[6]

The proposed rule sets forth high-level requirements for alternative treatment, while allowing licensees more flexibility to determine the type of treatments that will provide the requisite level of confidence, but at a lower level of assurance for RISC-3 SSCs in recognition of their low safety significance. The Commission recognizes the greater degree of flexibility and lower level of assurance, considering the potential change in reliability that might occur when treatment is reduced from what had previously been required by the special treatment requirements.[7]

The SQUG agrees that licensees should have the flexibility to determine the specific treatment that will be applied to RISC-3 SSCs rather than have the rule contain the specific treatment or require NRC review and approval of the treatment. The requirements being proposed by the NRC in the current proposed rule are sufficient to ensure an effective treatment program for RISC-3 SSCs while still providing necessary implementing flexibility to licensees. There is no evidence provided by the Commission to support an argument in favor of requiring an additional layer of NRC review and approval. Any enactment of the more prescriptive alternative would be contradictory to the intent of this rulemaking — to provide licensees with more flexibility in regulatory implementation.

In recognition of these aspects of the proposed rule, the SQUG is concerned with certain statements regarding alternative treatment, which could be construed as NRC guidance on implementing the rule. Specifically, Section V.5.2.1 of the Statement of Considerations accompanying the proposed rule, discussing the design control process requirements in 10 C.F.R. §50.69(d)(2)(i), is overly prescriptive concerning the implementation of effective design control processes that assure the functional capability of SSCs. Particularly, in the discussion of design basis seismic conditions, the Commission makes statements that appear to limit the flexibility in determining an acceptable alternative treatment to the requirements in Part 100, Appendix A, for ensuring safety functions are maintained when subject to design basis earthquakes. Specifically, the Statement of Considerations includes the following:

> The proposed rule would permit licensees to select a technically defensible method to show that RISC-3 SSCs will remain functional when subject to

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[5] 10 C.F.R. §50.69(d)(2)(i).

[6] 10 C.F.R. §50.69(d)(2).

[7] 68 Fed. Reg. at 26,517.

> design earthquake loads. The level of confidence for the design basis capability of RISC-3 SSCs, including seismic capability, may be less than the confidence in the design basis capability of RISC-1 SSCs. *The use of earthquake experience data has been mentioned as a potential method to demonstrate SSCs will remain functional during earthquakes. However, it would be difficult to rely on earthquake experience alone to demonstrate functionality of SSCs if the design basis includes multiple earthquake events or combinations of loadings unless these specific conditions were enveloped by the experience data. Additionally, if the SSC is required to function during or after the earthquake, the experience data would need to contain explicit information that the SSC actually functioned during or after the design basis earthquake events as required by the SSC design basis. The successful performance of an SSC after the earthquake event does not demonstrate it would have functioned during the event. Qualification testing of an SSC would be necessary if no suitable alternative method is available for showing that the SSC will perform its design basis function during an earthquake.*[8]

SQUG recommends that the highlighted language, which goes beyond the high-level requirements delineated in the proposed rule, be removed from the Statement of Considerations ("SOC") for the final rule, if enacted. The prescriptive nature of the SOC language is inconsistent with the discussion of other design basis functional capabilities contained therein. In addition, it is inconsistent with the NRC's position regarding the use of an experience-based method for assuring the seismic capability and adequacy for RISC-1 SSCs in the majority of licensed nuclear plants, as described in Supplement 1 to Generic Letter ("GL") 87-02.[9] Retaining the language in the final rule SOC would effectively preclude the A-46 plants (which represent the majority of currently operating plants) from applying an alternative treatment for RISC-3 SSCs required to function in the event of an earthquake. This result is because the language suggests that the current treatment for the safety-related equipment at these plants would not be acceptable for even the low-risk significant SSCs if an A-46 plant elected to implement the proposed rule. Therefore, including the language in the SOC creates a dilemma for the majority of the operating plants as to whether they could implement <u>any</u> aspects of the proposed rule if they do not intend to implement its provisions regarding seismic alternative treatment. The suggestion of such a limitation undermines the purpose of the rule.

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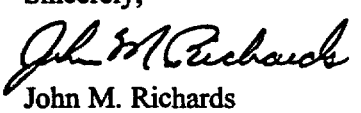
[8] 68 Fed. Reg. at 26,543. (Emphasis added.)

[9] NRC to All Unresolved Safety Issue (USI) A-46 Plant Licensees Who Are Members of the Seismic Qualification Utility Group (SQUG), "Supplement 1 to Generic Letter (GL) 87-02 That Transmits Supplemental Safety Evaluation Report No. 2 (SSER No. 2) on SQUG Generic Implementation Procedure, Revision 2, as Corrected on February 14, 1992 (GIP)" (May 22, 1992). Therein, the NRC stated that the SQUG methodology provides an adequate level of safety for verifying seismic adequacy for the plants as well as for new and replacement equipment.

The Commission's intent is appropriately stated without including the prescriptive language in the SOC, which could be construed as NRC guidance for implementing the rule. Including such prescriptive language in the SOC is inconsistent with the Commission's change from the more prescriptive draft rule language to the proposed rule language and contrary to "allowing greater flexibility and a lower level of assurance" for RISC-3 SSCs.[10] The development of acceptable alternative treatment methods is being undertaken as an industry effort that will support those licensees that elect to implement the rule, once final. The Commission should not, by including prescriptive language in the Statement of Considerations, inadvertently limit the range of acceptable methods in a manner that appears to preclude the use of national consensus standards or other acceptable methods for assuring that the seismic functionality is maintained for RISC-3 SSCs. It is SQUG's position that it is appropriate to allow the industry the flexibility to determine the level and method of alternative treatment that is necessary for a particular SSC, considering the robust safety significance categorization process and the requirements to maintain design basis functionality of SSCs.

SQUG appreciates the opportunity to comment on this important NRC rulemaking action. If you have any questions regarding these comments or seek additional information, please contact John Richards, Chairman, SQUG, at 704-382-3916 or jmricha@duke-energy.com.

Sincerely,



John M. Richards
Chairman, SQUG

[10] 68 Fed. Reg. at 26,517.