SUMMARY OF RECENT COMMUNICATION WITH THE NUCLEAR ENERGY INSTITUTE (NEI) REGARDING TREATMENT REQUIREMENTS UNDER 10 CFR 50.69

This summary was prepared to document the results of a March 31, 2009, phone call between the staff and the Nuclear Energy Institute (NEI) representatives regarding treatment of safety-related low safety-significant Structures Systems and Components (SSC), also referred to as Risk-Informed Safety Class 3 (RISC-3) SSCs, as they pertain to the implementation of 10 CFR 50.69.

Background

By letter dated September 25, 2006, as supplemented by letters dated October 22, 2007, and July 15, 2008, the NEI submitted Topical Report (TR) WCAP-16308-NP, Revision 0, "Pressurized Water Reactor Owners Group (PWROG) 10 CFR 50.69 Pilot Program – Categorization Process - Wolf Creek Generating Station," to the U.S. Nuclear Regulatory Commission (NRC) staff for review on behalf of the PWROG. By letter dated September 6, 2008, an NRC draft safety evaluation (SE) regarding approval of TR WCAP-16308-NP was provided to NEI for review and comments. By letter dated October 14, 2008, NEI commented on the draft SE. The NRC staff's disposition of NEI's comments on the draft SE is discussed in Attachment 2 to the final SE, which was issued on March 26, 2009 (ML090260674).

The NRC staff found that TR WCAP-16308-NP is acceptable for referencing in licensing applications to the extent specified and under the limitations delineated in the TR and the final SE. The categorization process described in the TR supports license amendment applications by licensees voluntarily choosing to implement § 50.69. As described in the statement of considerations (SOC) for § 50.69, the treatment processes for SSCs are not subject to NRC review and approval as part of the license amendment process but rather will be subject to sample inspections at nuclear power plants implementing § 50.69. Therefore, the SE neither approves nor endorses any specific treatment process. However, the staff views approval of the categorization process described in the TR as a major step forward in supporting licensees desiring to submit applications to implement § 50.69.

In a phone call initiated by NEI on March 31, 2009, NEI representatives expressed disagreement with certain language in the SE. There were no new concerns identified, but rather the comments provided earlier in reference to the draft SE were restated. The staff's disposition of these comments, as stated in Attachment 2 to the final SE, did not satisfy NEI's concerns.

Specific Points of Disagreement on RISC-3 Treatment as Described in the SE

NEI Issue #1: NEI objected to the inclusion of language regarding monitoring for and correcting RISC-3 SSC degradation in the SE discussion of RISC-3 monitoring and treatment. NEI stated that, since the rule is intended to be performance based, no programmatic response to address SSC degradation is necessary.

Staff Position/Response: The performance based approach to RISC-3 treatment proposed in the TR is solely based upon the monitoring of failure rates to ensure the values assumed in the sensitivity study used for SSC categorization remain valid. The staff does not agree that this approach alone is sufficient to satisfy § 50.69(d)(2), which requires that licensees ensure with reasonable confidence that RISC-3 SSCs remain capable of performing their safety-related

functions under design basis conditions including seismic conditions and environmental conditions and effects throughout their service life. Monitoring of failure rates during normal operating (and often standby) conditions does not provide an adequate performance measure to meet the "reasonable confidence" requirement under accident conditions. § 50.69(d)(2)(ii), "Corrective Action," requires conditions that would prevent a RISC-3 SSC from performing its safety-related function (i.e., degradation) be corrected in a timely manner. Therefore, inspections, tests, and corrective actions (i.e., treatment) must address these rule requirements. One of the goals of an effective treatment program is the ability to prevent SSC performance and reliability degradation. This aspect of treatment provides the reasonable confidence that the SSC will continue to remain operationally ready until the next inspection or test (i.e., It is forward looking.). Relying on failure rate data as the sole measure of performance does not contain this forward looking preventive element that provides the reasonable confidence of SSC performance as required by § 50.69(d)(2). In addition, a simple reference to commercial/general industrial practices to define the treatment plan for RISC-3 SSCs is not acceptable per the SOC for rule because of the significant variation that exists in the application of industrial practices at nuclear power plants.

NEI Issue #2: NEI stated that the SE conflicts with Regulatory Guide (RG) 1.201 since it endorses NEI 00-04 which contains a performance based option. NEI appears to view RG 1.201 as defining treatment as well as the categorization process.

Staff Position/Response: The SE does not conflict with RG 1.201, which is entitled "Guidelines for Categorizing SSCs in Nuclear Power Plants Based According to Their Safety Significance." As its title suggests, RG 1.201 deals with the categorizing of SSCs into one of the four RISC categories. One element of the categorization process, which is required by § 50.69(e)(3), is that there be a feedback and process adjustment mechanism to ensure changes in the treatment of RISC-3 SSCs do not cause adverse changes in SSC performance such that assumptions made in the categorization process are invalidated. This requirement is in addition to the requirement of § 50.69(d)(2) which stipulates that licensees implementing § 50.69 ensure with reasonable confidence that RISC-3 SSCs remain capable of performing their safety-related functions under design basis conditions. In order to meet the feedback and process adjustment requirement of § 50.69(e)(3), some type of monitoring in the form of inspection and testing is required. Although these elements make up part of the scope of treatment for SSCs, their specific use in obtaining data that can be used to satisfy § 50.69(e)(3) is a narrower subset of all the aspects of treatment that are needed to satisfy both § 50.69 (d)(2) and (e)(3). RG 1.201 is focused on the categorization process, and its discussion of RISC-3 treatment is in the context of satisfying § 50.69(e)(3) in order to ensure the categorization process remains valid. RG 1.201 does not, however, provide guidance that defines the entire scope of a licensee's RISC-3 treatment program that would satisfy § 50.69(d)(2).

RG 1.201, section 7 endorses section 12.4 of NEI 00-04, "10 CFR 50.69 SSC Categorization Guideline," for an approach to aspects of treatment that ensure the categorization process remains valid. The header for NEI 00-04, section 12.4, is, "**The following guidance is provided relative to paragraph 10 CFR 50.69(e)(3) above, for RISC-3 SSCs**." Note that this section does not explicitly address all of the § 50.69(d)(2) treatment requirements, rather just those necessary to satisfy § 50.69(e)(3). RG 1.201 endorses a performance based approach (based on failure rates) described in NEI 00-04 and an alternative approach (based on a programmatic response to known degradation mechanisms) to satisfy § 50.69(e)(3). The NRC staff SE clearly allows the use of either of these approaches to satisfy § 50.69(e)(3). The staff, however, has not taken the position that either one of these approaches by itself satisfies the treatment requirements contained in § 50.69(d)(2). NEI has taken the position that the need to

detect and correct degradation is an alternative, and therefore not required to satisfy § 50.69(d)(2). The staff believes this position is being taken out of context with the scope of RG 1.201, section 7, since the guidance it contains is primarily directed at meeting § 50.69(e)(3) and not § 50.69(d)(2).

The staff has discussed the evolution of RG 1.201 from its original issue (revision 0) in January 2006 to revision 1 in May 2006 with some of the NRC individuals who were involved at the time. In this revision, more prescriptive language on treatment (i.e., discussion of degradation, reference to use of consensus standards, reference to record keeping requirements) was removed. Discussions with these staff members indicate that these specific requirements placed on certain aspects of treatment were removed from RG 1.201 because agreement between the staff and industry on what would constitute an acceptable RISC-3 treatment program had not yet been reached and because they were not required to support the guidance being provided to meet § 50.69(e)(3). Again, the intent of RG 1.201 was to be focused on the categorization process, and the feedback mechanism to ensure it remains valid (§ 50.69(e)(3)) rather than on a description of a complete RISC-3 treatment program to satisfy § 50.69(d)(2).

NEI Issue #3: NEI stated there was no need to discuss treatment in the SE since licensees are not required to submit their treatment plan as part of an application for a license amendment under § 50.69.

Staff Position/Response: TR WCAP-16308-NP, section 8, contains a specific description of the application of RISC-3 treatment requirements. In this section, the stated approach to inspection, testing and corrective action (the definition of treatment per § 50.69(d)(2)) is the monitoring of failure rates as described in the TR section describing compliance with § 50.69(e)(3). The TR does not contain a sufficient description of any other aspects of treatment to allow the staff to conclude that § 50.69(d)(2) would also be met. The fact that licensees are not required to submit treatment plans as part of a § 50.69 application does not eliminate the need for the NRC staff to make a finding on the treatment section that was included in TR WCAP-16308-NP. Specifically, the staff cannot give licensees implementing § 50.69 the impression that a simple reference to application of commercial practices and monitoring of failure rates would constitute an adequate plan for treatment of RISC-3 SSCs.

Path Forward

The staff is interested in establishing a stable, predictable regulatory environment for the implementation of § 50.69. During the February 4, 2009, Commission meeting on risk-informed regulation, the staff expressed the intent to hold additional public meetings to discuss and resolve treatment issues with industry. In subsequent discussions with NEI, including the most recent phone call on March 31, 2009, NEI indicated they were not interested in spending additional resources on resolving RISC-3 treatment issues due to the low safety significance of RISC-3 SSCs. NEI also questioned the NRC's stated intention to develop inspection guidance on treatment under § 50.69. The staff views inspection guidance as a useful vehicle for establishing guidelines on treatment that will facilitate a stable, predictable, regulatory environment. Furthermore, sample inspections at plants implementing § 50.69 were discussed in the SOC as a means to "evaluate the treatment established under § 50.69 with primary attention directed to programmatic and common-cause issues; including those associated with known degradation mechanisms." The staff also recognizes that inspection activities would be performance based and focus primarily on high safety-significant items (RISC-1 and 2 SSCs). Therefore, the staff intends to proceed with development of inspection guidance. The staff will

also consider interfacing with other industry stakeholders, such as the American Society of Mechanical Engineers (ASME), since application of consensus standards (i.e., risk-informed code cases) may be one way to approach certain aspects of treatment.

In accordance with Staff Requirements Memorandum M090204B (ML090490812), the staff will continue to inform the Commission of progress toward resolving § 50.69 treatment issues as part of the paper reporting status of risk-informed activities (WITS 199500047).

ADAMS ACCESSION NO.: ML091050096