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U.S. Nuclear Regulatory Commission
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ROCKVILLE, MD 20852

EPRI Docket No. 99902021

Subject: ELECTRIC POWER RESEARCH INSTITUTE – SUBMITTAL OF SUPPLEMENTAL INFORMATION TO COMPLETE ACCEPTANCE REVIEW OF TECHNICAL REPORT 3002025288, “ENHANCED RISK-INFORMED CATEGORIZATION METHODOLOGY FOR PRESSURE BOUNDARY COMPONENTS”.

By letter dated November 30, 2023 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML23334A212), EPRI submitted to the U.S. Nuclear Regulatory Commission (NRC) supplemental information to complete the Acceptance Review of the Technical Report EPRI 3002025288, “Enhanced Risk-Informed Categorization Methodology for Pressure Boundary Components” (henceforth referred to as “EPRI 3002025288”), which was originally published June 2023. The proposed methodology in EPRI 3002025288 focuses on improving the categorization approach for pressure boundary components using significant lessons learned in the implementation of NRC’s adoption of Section 50.69, “Risk-Informed Categorization and Treatment of Structures, Systems, and Components for Nuclear Power Reactors,” of Title 10 of the Code of Federal Regulations (CFR) on risk-informed categorization and treatment of structures, systems, and components (SSCs) for nuclear power plants (69 FR 68047). The proposed methodology in EPRI 3002025288 was developed to work in tandem with approved general industry guidance on 10 CFR 50.69 implementation (ML052910035), and in enhanced alignment with several risk-informed applications currently in use within the large, commercial nuclear reactor US fleet.

Since the submittal of the aforementioned letter, further substantial dialogue between EPRI and NRC staff took place on public meetings held on February 12th, 2024 (ML24040A007) and, more recently, on April 30th, 2024 (ML24117A331). During these meetings, discussion of the supplemental information was presented by EPRI on both meetings (see ML24044A000 and ML24117A259), and NRC provided written items on specific gaps in the April 30th, 2024, public meeting (see ML24117A256).

Based on the April 30th, 2024, public meeting and continuous discussions with NRC staff since then, EPRI committed to provide the additional specific supplemental information requested by the NRC (ML24117A256) to complete the acceptance review of EPRI 3002025288.

In order to provide a clear addition to the prior supplemental submittal, this letter contains the following attachments:

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- Attachment 1: A flowchart created to provide a process diagram of the enhanced passive categorization methodology. The flowchart shows multiple phases including prerequisites required to use the enhanced categorization process, pre-determined HSS passive SSCs, design-/plant-specific criteria using Probabilistic Risk Assessment (PRA) models, sensitivity studies and final passive categorization for risk-related criteria, as well as performance monitoring. It is also intended to reinforce the structured approach presented in the proposed methodology to ensure its consistent and technically robust implementation.
- Attachment 2: A table that provides a comparison between the approved Arkansas Nuclear One (ANO) Unit 2 Risk-Informed Repair/Replacement approach (ML090930246) used for passive categorization in current 10 CFR 50.69 applications against the proposed EPRI 3002025288 methodology.
- Attachment 3: A revised Table 1 from the prior supplement (submitted on November 30th, 2023) with additional technical basis for each of the criteria proposed in the methodology.
- Attachment 4: A full revision to Chapter 5 of EPRI 3002025288 that provides a roadmap of the development of the methodology contained in Chapter 4 of 3002025288, a systems review (along with systems interface considerations), and discussion of the specific examples provided by the NRC in the April 30th, 2024 public meeting (including how the examples would be dispositioned under the current NRC-approved process (ML090930246) and its treatment in the proposed EPRI 3002025288 process). Finally, Section 5.6 (Table 7) of Attachment 4 also provides a listing of design- and plant-specific voluntary safety improvements based on the implementation of Criterion 11 to a subset of plants. These safety improvements include hardware changes and new or revised operating procedures to reduce the risk associated with pressure boundary failures. It is anticipated that application of Criteria 12 and 13 may also lead to voluntary plant-specific safety improvements.
- Attachment 5: Provides expanded implementation guidance to further strengthen the implementation details of the EPRI 3002025288 methodology criteria with a more detailed basis and specific examples for both PWR and BWR systems (proposed as an insert into Chapter 4 to provide more consistent implementation).
- Attachment 6: Further clarification is provided that, while the methodology proposed in EPRI 3002025288 applies to the categorization of pressure boundary components), other aspects of 10 CFR 50.69 and NEI 00-04 not specifically addressed by EPRI 3002025288 remain in place. For example, alternate treatment of RISC-3 SSCs (i.e., safety-related components that perform low safety significant functions) must comply with the 10 CFR 50.69 rule, including ensuring with reasonable confidence that these SSCs remain capable of performing their intended safety-related functions.

We look forward to the NRC review of the additional supplemental information, and if there are any questions, please feel free to contact the EPRI Point of Contact for Topical Report submittals, Michael Ruskowski, at mruskowski@epri.com.

Sincerely,

Fernando J Ferrante Digitally signed by Fernando J Ferrante
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Fernando Ferrante, Program Manager
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EPRI

cc: Lois James, NRC
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