UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

July 19, 2019

Mr. Rod McCullum,
Senior Director, Fuel & Decommissioning
Nuclear Energy Institute
1201 F Street, NW, Suite 1100
Washington, DC 20004

SUBJECT: FINAL SAFETY EVALUATION FOR THE ELECTRIC POWER RESEARCH INSTITUTE (EPRI) TOPICAL REPORT 3002010613, "BENCHMARKS FOR QUALIFYING FUEL REACTIVITY DEPLETION UNCERTAINTY—REVISION 1" AND TOPICAL REPORT 3002010614, "UTILIZATION OF THE EPRI DEPLETION BENCHMARKS FOR BURNUP CREDIT VALIDATION—REVISION 1"

Dear Mr. McCullum:

By letter dated January 3, 2013 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML13004A392), the Nuclear Energy Institute (NEI) submitted NEI 12-16, "Guidance for Performing Criticality Analyses of Fuel Storage at Light-Water Reactor Power Plants," Revision 0 (ADAMS Accession No. ML130840163), to the U.S. Nuclear Regulatory Commission (NRC) for review and endorsement through a regulatory guide. Subsection 4.2.3, "PWR [pressurized water reactor] Depletion Bias and Uncertainty," references two topical reports created by the Electric Power Research Institute (EPRI) detailing methods for validating PWR criticality calculations that credit depleted fuel in spent fuel pool storage configurations.

By letter dated March 28, 2018 (ADAMS Accession No. ML18088B392), the NEI submitted EPRI Topical Report (TR) 3002010613, Revision 1, "Benchmarks for Quantifying Fuel Reactivity Depletion Uncertainty" (ADAMS Accession No. ML18088B397), and EPRI TR 3002010614, Revision 1, "Utilization of the EPRI Depletion Benchmarks for Burnup Credit Validation" (ADAMS Accession No. ML18088B395), for review as supporting documentation to NEI 12-16.

By letter dated May 31, 2018 (ADAMS Accession No. ML18121A246), the NRC staff issued its draft safety evaluation (SE) to NEI and EPRI for review and factual error clarification. By letter dated January 31, 2019 (ADAMS Accession No. ML19196A273), NEI provided comments on the draft SE. By letter dated March 15, 2019 (ADAMS Accession No. ML19057A335), the NRC staff provided a draft SE comment disposition table for information. The NRC staff final comment disposition table is included as an attachment to this letter (ADAMS Accession No. ML19196A302).

Based on the review described in the enclosed final SE and subject to the limitations provided in Section 4.0, the NRC staff has determined that the EPRI benchmark and utilization TRs 3002010613 and 3002010614, including supplemental information provide sufficient technical basis for the determination of depletion code bias and uncertainty as part of a spent fuel pool (SFP) criticality safety uncertainty analysis (CSA) application.

In accordance with the guidance provided on the NRC website, we request that the NEI and EPRI publish approved versions of the EPRI benchmark and utilization TRs 3002010613 and 3002010614 within 3 months of receipt of this letter. The approved versions shall incorporate this letter and the enclosed final SE after the title page. Also, they must contain historical review information, including NRC requests for additional information (RAIs) and your responses. The approved versions shall include an "-A" (designating approved) following the TR identification symbol.

As an alternative to including the request for RAIs and RAI responses behind the title page, if changes to the TR were provided to the NRC staff to support the resolution of RAI responses, and if the NRC staff reviewed and approved those changes as described in the RAI responses, there are two ways that the accepted version can capture the RAIs:

1. The RAIs and RAI responses can be included as an Appendix to the accepted version.

2. The RAIs and RAI responses can be captured in the form of a table (inserted after the final SE) which summarizes the changes as shown in the approved version of the TR. The table should reference the specific RAIs and RAI responses which resulted in any changes, as shown in the accepted version of the TR.

If future changes to the NRC's regulatory requirements affect the acceptability of these TRs, NEI will be expected to revise the TRs appropriately or justify their continued applicability for subsequent referencing. Licensees referencing these TRs would be expected to justify their continued applicability or evaluate their plant using the revised TRs.

If you have any questions, please contact Jason Drake at 301-415-8378.

Sincerely,

/RA/

Dennis C. Morey, Chief
Licensing Processes Branch
Division of Licensing Projects
Office of Nuclear Reactor Regulation

Docket No. 99902028

Enclosure:
Final SE

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ADAMS Accession Nos.:
ML19168A097 (Package);
ML19189A112 (Letter);
ML19189A111 (Enclosure)
ML19196A273 (NEI Letter)
ML19196A274 (NEI Letter Attachment 1)
ML19196A275 (NEI Letter Attachment 2)
ML19196A276 (NEI Letter Attachment 3)
ML19196A277 (NEI Letter 2)
ML19196A302 (Comment Disposition Table) ***concurrence via e-mail** **NRR-106**

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