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January 31, 2019

Dr. Mirela Gavrilas
Director, Division of Reactor Safety Systems
Office of Nuclear Reactor Regulation
U.S. Nuclear Regulatory Commission
Washington, DC 20555-0001

Subject: Submittal of Reactivity Decrement Bias and Uncertainty Values Using Linear versus Quadratic Weighted Least Squares Regression Models, Comments on Revised Draft Safety Evaluation Report for Electric Power Research Institute Reports "Benchmarks for Qualifying Fuel Reactivity Depletion Uncertainty - Revision 1" and "Utilization of the EPRI Depletion Benchmarks for Burnup Credit Validation - Revision 1," and Proposed Changes for the EPRI Utilization Report

Project Number: 689

Dear Dr. Gavrilas:

On behalf of the Nuclear Energy Institute's (NEI)[1] members (hereinafter referred to as industry), please see the attached comments to the revision of the updated U.S. Nuclear Regulatory Commission (NRC) draft Safety Evaluation (SE) for the Electric Power Research Institute (EPRI) reports "Benchmarks for Qualifying Fuel Reactivity Depletion Uncertainty - Revision 1[2]," and "Utilization of the EPRI Depletion Benchmarks for Burnup Credit Validation - Revision 1[3]." NEI previously submitted comments[4] on the initial NRC draft SE[5] on June 26, 2018. Additionally, in Attachment 1, we are submitting the uncertainty and bias values using linear versus quadratic weighted least squares regression models. We would specifically like to reiterate that the uncertainty values outlined in Attachment 1 did not change between the linear and quadratic regression approaches, but there was a change in the bias values, which is added as an additional NRC safety margin to the final analysis, per our discussion during the December 20, 2018 public meeting. In Attachment 3, we

[1] The Nuclear Energy Institute (NEI) is responsible for establishing unified policy on behalf of its members relating to matters affecting the nuclear energy industry, including the regulatory aspects of generic operational and technical issues. NEI's members include entities licensed to operate commercial nuclear power plants in the United States, nuclear plant designers, major architect and engineering firms, fuel cycle facilities, nuclear materials licensees, and other organizations involved in the nuclear energy industry.
[2] EPRI report 3002010613, "Benchmarks for Qualifying Fuel Reactivity Depletion Uncertainty," Revision 1 dated October 2017 (ML18088B397)
[3] EPRI report 3002010614, "Utilization of the EPRI Depletion Benchmarks for Burnup Credit Validation," Revision 1, dated January 2018 (ML18088B395)
[4] Letter from B. Holtzman (NEI) to B. Benney (NRC), "Submittal of Comments on Draft Safety Evaluation Report for Electric Power Research Institute Reports" June 26, 2018.
[5] ML18121A243

are submitting the proposed changes to the EPRI Utilization report to reflect this position. The attachments to this letter contain industry's detailed comments and analysis.

We appreciated the opportunity afforded to industry during the December 20, 2018, public meeting to discuss the draft SER, understand NRC concerns, resolve misunderstandings, and identify a path forward for closing this issue. As you know, NEI and industry have been working with the NRC for over seven years to establish regulatory guidance that may be used by the industry to perform criticality analyses for the storage of spent fuel at light water power plants. Based on the public meeting, we believe that the attachments and industry's comment on the draft SER have sufficiently incorporated the NRC staff's feedback. Given the long history of this issue, we believe it would be beneficial to review a final draft prior to publication to ensure that all changes reflect our mutual understanding and goal to have an SER that is both clear and usable.

Finalization of the NRC SER in a timely manner is important to appropriately revise the EPRI reports that contain the important scientific and technical underpinnings that inform NEI 12-16, "Guidance for Performing Criticality Analyses of Fuel Storage at Light Water Reactor Plants," Revision 3.[6] These EPRI reports are incorporated into NEI 12-16 by reference. The targeted NRC completion date of the third quarter of fiscal year 2019 would be helpful in achieving industry's objectives.

Thank you for your continued attention on this important matter. Please contact me if you have any questions or require additional information.

Sincerely,

Nima Ashkeboussi

Nima Ashkeboussi

Attachment 1: Evaluation of depletion reactivity decrement biases and uncertainty
Attachment 2: Draft SER Comments
Attachment 3: Proposed changes for the EPRI Utilization Report

c: Ms. Louise Lund, NRC/NRR
Mr. Dennis Morey, NRC/NRR
Mr. Robert Lukes, NRC/NRR
Mr. Jason Drake, NRC/NRR

[6] NEI 12-16, "Guidance for Performing Criticality Analyses of Fuel Storage at Light Water Reactor Plants," Revision 3 dated March 29, 2018 (ML18088B400)