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April 13, 2016

Mr. William I. MacFee  
Project Manager, Division of Reactor Safety Systems  
Office of Nuclear Reactor Regulation  
U.S. Nuclear Regulatory Commission  
Washington, DC 20555-0001

**Subject:** Response to Request for Additional Information Questions Regarding EPRI Report 1025203, "Utilization of the EPRI Depletion Benchmarks for Burnup Credit Validation," and EPRI Report 1022909, "Benchmarks for Quantifying Fuel Reactivity Depletion Uncertainty"

**Project Number: 689**

Dear Mr. MacFee:

On behalf of the nuclear energy industry, the Nuclear Energy Institute (NEI)<sup>1</sup> is providing a response to the Request for Additional Information Questions related to EPRI Reports 1025203 & 1022909 that were provided by the NRC to NEI via letter dated February 4, 2016 [Ref. 1]. These two EPRI Reports support the guidance provided in NEI 12-16, *Guidance for Performing Criticality Analyses of Fuel Storage at Light-Water Reactor Power Plants*, that was submitted to the NRC on April 18, 2014, [Ref. 2] in conjunction with a request for NRC endorsement.

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<sup>1</sup> The Nuclear Energy Institute (NEI) is the organization responsible for establishing unified industry policy on matters affecting the nuclear energy industry, including the regulatory aspects of generic operational and technical issues. NEI's members include all entities licensed to operate commercial nuclear power plants in the United States, nuclear plant designers, major architect/engineering firms, fuel cycle facilities, nuclear materials licensees, and other organizations and entities involved in the nuclear energy industry.

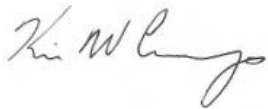
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April 13, 2016

Page 2

Attachment 1 contains the responses to the four RAIs provided by the NRC; Attachment 2 provides additional details on the results of the statistical approach proposed by EPRI to address RAI-1.

Sincerely,



Kristopher W. Cummings

References:

- [1] Request for Additional Information Related to "Benchmarks for Quantifying Fuel Reactivity Depletion Uncertainty" and "Utilization of the EPRI Depletion Benchmarks for Burnup Credit Validation" (ML16007A034)
- [2] Submittal of NEI 12-16, *Guidance for Performing Criticality Analyses of Fuel Storage at Light-Water Reactor Power Plants*, Revision 1, dated April 2014 (ML14112A516)

Attachment 1: Response to Request for Additional Information (RAI) Questions Regarding EPRI Report 1025203, "Utilization of the EPRI Depletion Benchmarks for Burnup Credit Validation," and EPRI Report 1022909, "Benchmarks for Quantifying Fuel Reactivity Depletion Uncertainty"

Attachment 2: EPRI Analysis for Determining the 95/95 Confidence Limits on CASMO-5 Hot Full Power (HFP) Measured Reactivity Decrement Bias Regressions Used in the EPRI/Studsvik Burnup Benchmark

cc: Mr. William M. Dean, NRR, NRC  
Mr. John Lubinski, NRR, NRC  
Ms. Michele G. Evans, NRR, NRC  
Mr. Timothy J. McGinty, NRR/DSS, NRC  
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