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March 22, 2013

Mr. Jack R. Davis
Deputy Director
Division of Safety Systems
Office of Nuclear Reactor Regulation
U.S. Nuclear Regulatory Commission
Washington, DC 20555-0001

Subject: Submittal of NEI 12-16, *Guidance for Performing Criticality Analyses of Fuel Storage at Light-Water Reactor Power Plants*, Revision 0, dated March 2013

Project Number: 689

Dear Mr. Davis:

On behalf of the nuclear energy industry, the Nuclear Energy Institute (NEI)¹ submits the attached NEI 12-16, *Guidance for Performing Criticality Analyses of Fuel Storage at Light-Water Reactor Power Plants*, Revision 0 dated March 2013 for NRC review and potential endorsement.² This guidance will first be used by Comanche Peak in an upcoming License Amendment Request.

NEI 12-16, Revision 0, provides guidance for performing criticality analyses at light water reactor power plants in accordance with 10 CFR 50.68 and 10 CFR Part 50, Appendix A, GDC 62. As a means to achieve regulatory efficiency and effectiveness, we recommend that the NRC review NEI 12-16 for potential endorsement through a regulatory guide. This proposal would fulfill the need for more durable guidance identified in the NRC/NRR Action Plan, *On Site Spent Fuel Criticality Analyses*, as updated May 19, 2012. We appreciate the opportunity to receive early feedback from the NRC at a public meeting held on January 23. NEI 12-16, Revision 0, has been updated to address this early feedback.

¹ NEI is the organization responsible for establishing unified nuclear industry policy on matters affecting the nuclear energy industry, including the regulatory aspects of generic operational and technical issues. NEI's members include all utilities licensed to operate commercial nuclear power plants in the United States, nuclear plant designers, major architect/engineering firms, fuel fabrication facilities, materials licensees, and other organizations and individuals involved in the nuclear energy industry.

² NEI transmitted a pre-submittal draft of NEI 12-16 on January 3, 2013 (ML13004A392) requesting early feedback and an exemption from fees. This letter also expressed our plans to submit NEI 12-16 Revision 0 in March 2013 for potential NRC endorsement.

The purpose of submitting NEI 12-16 is to assist the NRC in completing the process of updating and stabilizing the regulatory framework governing spent fuel pool criticality analyses through publication of the planned regulatory guide, which meets the requirements for an exemption of fees in 10 CFR 170.11(a)(1)(ii). NEI 12-16 is a guidance document, it is not a topical report, and we believe that the NRC would be the primary beneficiary of its review. These qualities also meet the requirements of 10 CFR 170.11(a)(1)(iii), which permit an exemption from fees for exchanging information between industry and the NRC for the specific purpose of supporting NRC's ongoing generic regulatory improvements and development of a Regulatory Guide.

NEI 12-16 builds upon existing guidance for spent fuel pool criticality analyses from several sources, including NRC's DSS-ISG-2012-01 and 1998 Kopp Memorandum, to add further detail, knowledge gained from more recent work, and to improve clarity. For example, guidance on depletion validation incorporates a recently developed methodology published by the Electric Power Research Institute. NEI 12-16 also includes additional topics not addressed in prior or existing guidance. For example, guidance is added for neutron absorber surveillance.

Thank you in advance for your review of NEI 12-16 and continued consideration of our request for an exemption from fees. If you have any questions or require additional information, please contact me.

Sincerely,

A handwritten signature in black ink, appearing to read 'Rodney McCullum', with a stylized, cursive script.

Rodney McCullum

Attachment

c: Mr. Eric J. Leeds, NRR, NRC
Mr. Daniel H. Dorman, NRR, NRC
Mr. Timothy J. McGinty, NRR/DSS, NRC
Mr. Christopher P. Jackson, NRR/DSS/SRXB
Mr. Kent Wood, NRR/DSS/SRXB
Ms. Emma Wong, NRR/DB/ESGB