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

October 15, 2014

William J. Boyle, Ph.D., Director
Office of Used Nuclear Fuel Disposition
Research and Development
United States Department of Energy
Washington, DC 20585

SUBJECT: ISSUANCE OF VOLUME 3 OF THE SAFETY EVALUATION REPORT RELATED TO DISPOSAL OF HIGH-LEVEL RADIOACTIVE WASTES IN A GEOLOGIC REPOSITORY AT YUCCA MOUNTAIN, NEVADA

Dear Dr. Boyle:

The U.S. Nuclear Regulatory Commission (NRC) has issued NUREG-1949, Volume 3 of a Safety Evaluation Report (SER) for the U.S. Department of Energy (DOE) license application submittal dated June 3, 2008 (NRC's Agencywide Documents Access and Management System (ADAMS) Accession No. ML081560400), as updated by letter dated February 19, 2009 (ADAMS Accession No. ML090700817), seeking authorization to construct a geologic repository at Yucca Mountain, Nevada.

Safety Evaluation Report Related to Disposal of High-Level Radioactive Wastes in a Geologic Repository at Yucca Mountain, Nevada; Volume 3: Repository Safety After Permanent Closure (ADAMS Accession No. ML14288A121), documents the NRC staff's review and evaluation of the Safety Analysis Report (SAR), Chapter 2: Repository Safety After Permanent Closure, of the DOE license application. The NRC staff also reviewed information that DOE provided in response to the NRC staff's requests for additional information and other information that DOE provided related to the SAR. In particular, SER Volume 3 documents the results of the NRC staff's evaluation to determine whether the proposed repository design for Yucca Mountain complies with the performance objectives and requirements that apply after the repository is permanently closed.

The NRC staff finds that DOE has demonstrated compliance with the NRC regulatory requirements for postclosure safety, including, but not limited to, "Performance objectives for the geologic repository after permanent closure" in 10 CFR 63.113; "Requirements for performance assessment" in 10 CFR 63.114; "Requirements for multiple barriers" in 10 CFR 63.115; and "Postclosure Public Health and Environmental Standards" in 10 CFR Part 63, Subpart L. In particular, the NRC staff finds that the proposed repository at Yucca Mountain (1) is comprised of multiple barriers and (2) based on performance assessment evaluations that are in compliance with applicable regulatory requirements, meets the 10 CFR Part 63, Subpart L limits for individual protection, human intrusion, and separate standards for protection of groundwater. This volume is one of five volumes that comprise the SER. Other portions of the NRC staff's safety review have been, or will be, documented in other volumes. SER Volume 1, which documents the results of the NRC staff's review of DOE's General Information, was published in August 2010 (ADAMS Accession No. ML102440298). SER Volume 2 will document the results

of the NRC staff's review and evaluation of DOE's compliance with preclosure safety objectives and requirements. SER Volume 4 will document the results of the NRC staff's review and evaluation of DOE's demonstration of compliance with administrative and programmatic requirements. SER Volume 5 will document the NRC staff's review and evaluation of probable subjects of license specifications and proposed conditions of construction authorization.

The publication of NUREG-1949, Volume 3 is one of several steps that need to occur before a decision can be made on the license application seeking authorization to construct a geologic repository at Yucca Mountain. A decision on whether to authorize construction can be made only after the NRC staff has completed its SER, a supplement to DOE's environmental impact statement has been prepared, a hearing has been conducted on contested issues, and the Commission has completed its review of contested and uncontested issues under 10 CFR 2.1023(c).

Sincerely,

Josephine Piccone

Josephine Piccone, Ph.D., Director
Yucca Mountain Directorate
Office of Nuclear Material Safety
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Enclosure: NUREG-1949, Volume 3

cc: See enclosed list

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