

December 29, 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 2 AND VOLUME 5 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, Volumes 2 and 5 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. Issuance of these volumes completes the NRC staff's SER. As noted in this letter, additional steps remain before a decision can be made on whether to authorize construction of the repository.

Safety Evaluation Report Related to Disposal of High-Level Radioactive Wastes in a Geologic Repository at Yucca Mountain, Nevada; Volume 2: Repository Safety Before Permanent Closure (ADAMS Accession No. ML15022A146), documents the NRC staff's review and evaluation of Safety Analysis Report (SAR), Chapter 1: Repository Safety Before Permanent Closure. 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 2 documents the results of the NRC staff's evaluation to determine whether the proposed repository design complies with the performance objectives and requirements that apply before the repository is permanently closed.

Based on its review, the NRC staff found that DOE submitted applicable information required by 10 CFR 63.21. The NRC staff has also found, with reasonable assurance, that subject to proposed conditions of construction authorization, DOE's design of the proposed geologic repository operations area (GROA) and preclosure safety analysis complies with the preclosure performance objectives at 10 CFR 63.111 and the requirements for preclosure safety analysis of the GROA at 10 CFR 63.112.

Safety Evaluation Report Related to Disposal of High-Level Radioactive Wastes in a Geologic Repository at Yucca Mountain, Nevada; Volume 5: Proposed Conditions on the Construction Authorization and Probable Subjects of License Specifications (ADAMS Accession No. ML15022A488) includes the results of the NRC staff's review of the SAR. 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 5 documents the NRC staff's (i) proposed conditions of construction authorization and (ii) review of DOE's SAR regarding probable subjects of license specifications.

The NRC staff finds that DOE has adequately identified and justified the probable subjects of license specifications. The NRC staff determined in Volume 4 of the SER that DOE has not satisfied certain regulatory requirements regarding ownership of the land where the GROA is located and water rights. In addition, a supplement to DOE's environmental impact statement has not yet been completed. Thus, the NRC staff is not recommending issuance of a construction authorization at this time. Nevertheless, in accordance with 10 CFR Part 63 requirements, SER Volume 5 identifies conditions of Construction Authorization proposed by the NRC staff based on its review in SER Volumes 1-5. These NRC staff proposed conditions could be included in a construction authorization if there is a Commission decision to authorize construction.

The publications of NUREG-1949, Volume 2 and Volume 5 are two of several steps that need to occur before an NRC 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 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,

/RA/ [Original Signed By]

Josephine M. Piccone, Ph.D., Director
Yucca Mountain Directorate
Office of Nuclear Material Safety
and Safeguards

Enclosures:

1. NUREG-1949, Volume 2
2. NUREG-1949, Volume 5

cc: See enclosed list

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Josephine M. Piccone, Ph.D., Director
 Yucca Mountain Directorate
 Office of Nuclear Material Safety
 and Safeguards

Docket No. 63-001

Enclosures:

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