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

September 7, 2023

MEMORANDUM TO: Shana Helton, Director
Division of Fuel Management
Office of Nuclear Material Safety
and Safeguards

FROM: Michele Sampson, Director
Division of Engineering
Office of Nuclear Regulatory Research

McKirgan, John signing on behalf of Sampson, Michele on 09/07/23

SUBJECT: IMPENDING PUBLICATION OF TECHNICAL LETTER REPORT: TLR-RES/DE/REB-2023-05, "ASSESSMENT OF THE CURRENT STATE OF KNOWLEDGE ON STORAGE AND TRANSPORTATION OF MOLTEN SALT REACTOR WASTE."

RES/DE/REB is pleased to issue a technical letter report (TLR) entitled "Assessment of the Current State of Knowledge on Storage and Transportation of Molten Salt Reactor Waste" (ADAMS Accession ML23188A168). This report aims help prepare for regulatory interactions and potential license applications for Molten Salt Reactor (MSR) technologies by identifying the potential technical and regulatory challenges associated with the storage and transportation of the associated salt waste and potential waste forms. TLR-RES/DE/REB-2023-05 was developed under contract 31310018D0001 with the Southwest Research Institute - Center for Nuclear Waste Regulatory Analyses (CNWRA).

In the report, the current and potential MSR designs were analyzed based on current industry trends and available public information to characterize salt waste streams and to identify potential challenges associated with the safe storage, transportation, and processing of MSR waste. In some cases, high-level plans for processing, storing, and transporting MSR salt waste were found, but with limited details related to the specific designs. Several insights were gained after reviewing several MSR designs and industry trends. From these insights, early communication between industry and the NRC should be encouraged to support more efficient reviews of applications. The NRC should also consider forward-looking knowledge management on phenomena which could impact design analysis.

Staff representatives from the Division of Fuel Management in the Office of Nuclear Material Safety and Safeguards have reviewed drafts of this TLR and did not find issues with the document. Nonetheless, please feel free to notify the responsible RES contact if you have any questions concerning the impending public release of this document.

CONTACT: Wendy Reed, RES/DE/REB
301-415-7213

RES has established an online quality survey to collect feedback from user offices on the usefulness of RES products and services. This survey can be found online at the hyperlink: RES Quality Survey. I would appreciate the responsible manager completing this short survey within 10 working days to present your office's views of the delivered RES product. If you cannot provide a rating of 'Exceptional' in all areas of the survey, please reach out to the RES/DE contact person prior to the completion of the survey and allow us the opportunity to address your concern.

If additional information is required, please contact Wendy Reed of my staff at 415-7213 or wendy.reed@nrc.gov.

Enclosures:
1. TLR-RES/DE/REB-2023-05 "ASSESSMENT OF THE CURRENT STATE OF KNOWLEDGE ON STORAGE AND TRANSPORTATION OF MOLTEN SALT REACTOR WASTE"

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ADAMS Accession No.: ML23188A167; Memo ML23188A169

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DATE	Jul 14, 2023	Sep 5, 2023	Sep 7, 2023	

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