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

March 11, 2024

MEMORANDUM TO: Samantha Lav, Chief
Fuel Facility Licensing Branch
Division of Fuel Management
Office of Nuclear Material Safety
and Safeguards

FROM: Matthew Bartlett, Sr. Project Manager
Fuel Facility Licensing Branch
Division of Fuel Management
Office of Nuclear Material Safety
and Safeguards

A handwritten signature in cursive script that reads "Matthew Bartlett".

Signed by Bartlett, Matthew
on 03/11/24

SUBJECT: TRIP REPORT FOR VISIT TO TRISO-X, LLC. ON FEBRUARY 14,
2024, TO DISCUSS SUBMITTAL OF THE ELECTRICAL AND
INSTRUMENTATION AND CONTROL PORTION OF THE LICENSE
APPLICATION (ENTERPRISE PROJECT IDENTIFIER
L-2022-NEW-0005)

Staff from the U.S. Nuclear Regulatory Commission (NRC) toured the TRISO-X, LLC (TRISO-X) pilot facility at the Oak Ridge National Laboratory on February 13, 2024. This was followed by an all-day visit to the TRISO-X offices in Oak Ridge, Tennessee on February 14, 2024. The purpose of the office visit was for the NRC technical reviewers for electrical and instrumentation and control (I&C) to hold a pre-submittal meeting with the TRISO-X technical staff. The NRC's acceptance letter published November 18, 2022 (ML22320A110) identified that the application was missing the electrical and I&C information for items relied on for safety (IROFS). The NRC's acceptance and proposed review schedule were contingent upon receiving the missing information by August 2023, which TRISO-X subsequently extended to February 2024. In preparation for this submittal, TRISO-X requested the face-to-face meeting with the technical staff to discuss the information they plan to submit and receive feedback on their submittal.

The TRISO-X staff stated that their electrical and I&C information was on schedule for submittal by the end of February. It would contain about 80 percent of the design packages for active IROFS that require electrical power and/or instrumentation and controls with updates to the integrated safety analysis (ISA) Summary, but the bulk of the material is design information that would be placed on the TRISO-X portal for NRC review. TRISO-X presented multiple slide presentations on the electrical and I&C systems utilized at the facility. They provided an overview of the location where the power will be brought on the site and how the power will be distributed up to the various sections of the buildings, but not within the buildings. They discussed the proposed major bus-level distribution of power within the facility, the method for

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S. Lav

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running the exterior power lines and different power trains to ensure power is available and reliable. They discussed implementation of electrical and I&C components in the ISA including electrical and I&C components used for IROFS and management measures. They indicated that the refinement of their detailed design removed the need for some of the electrical IROFS discussed in the original submittal.

The NRC staff stated that the submittal of the electrical and I&C information, as described by the TRISO-X licensing staff, would allow them to begin their review. Since the bulk of material would be on the TRISO-X portal because it is design information, the NRC staff may need additional information on the docket to complete its review. The NRC staff expressed appreciation for the tour of the pilot facility, which was helpful to better understand the processes and equipment utilized by TRISO-X. The NRC staff asked if the slides presented during the site visit could be placed on the TRISO-X portal, which was agreed upon. Following the meeting, the staff drove to the green field site to get an idea of the layout and better understanding of the areas surrounding the facility.

Additional information on the site visit and the participants list are included in the enclosures.

Enclosures:

1. Participants List (public)
2. Detailed Meeting Summary (non-public)

cc: trisoX@listmgr.nrc.gov

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