

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

November 4, 2022

TO: Christopher J. Roscetti, Technical Director
FROM: B. Caleca, P. Fox, and P. Meyer, Resident Inspectors
SUBJECT: Hanford Activity Report for the Week Ending November 4, 2022

Canister Storage Building (CSB): A potential inadequacy in the safety analysis was declared for the CSB safety basis related to the exclusion of uranium hydride (UH₃) particulate as a constituent of the material at risk (MAR) in multi-canister overpacks (MCO). Dose consequence calculations base the MAR on uranium oxide (UO₂) particulate in the MCO after 40 years of storage. Engineering personnel have proposed that UH₃ particulate generated inside a sealed MCO would also contribute to the respirable release and should be included in the MAR. This new information may indicate the bounding MAR assumed in the documented safety analysis is not conservative with respect to the dose consequences. Based on preliminary calculations of impact to dose consequences, facility management did not impose any new controls or restrictions while nuclear safety personnel further evaluate the condition.

Liquid Effluent Retention Facility (LERF): WRPS declared their readiness to safely startup LERF operations following implementation of a new documented safety analysis that supports upgrade from a radiological facility to a Hazard Category (HazCat) 3 facility (see 9/2/2022 report). The declaration further noted that all prerequisites contained in the startup plan of action are complete except the receipt of an updated authorization agreement from ORP. WRPS must receive the authorization agreement before initial startup of LERF as a HazCat 3 facility, but the open prerequisite does not preclude performance of the contractor's operational readiness review (ORR). The ORR will start on November 11.

Tank Side Cesium Removal (TSCR) System: A joint review group (JRG) met to evaluate the readiness of work instructions and personnel for cleanup of leaked tank waste in the TSCR process enclosure (see 10/21 and 10/28/2022 reports). The JRG members were well-prepared, and they performed a thorough evaluation, taking time to consider questions from both the JRG voting members and non-voting attendees at the meeting. The JRG members voted to recommend approval of the work instructions after JRG member comments are addressed and the resolutions reviewed for adequacy by the JRG chairperson. They also determined that the selected field work supervisors were prepared and qualified to lead the work.

222-S Laboratory: The 222-S Laboratory emergency planning (EP) team conducted an evaluated field drill. The scenario simulated the crash of a small aircraft into the side of the 11A hotcell building that resulted in a fire but did not breach the hotcells. The internal fire was extinguished by the building fire suppression system, while the external fire was extinguished by the Hanford Fire Department. The scenario also included one individual with a minor injury and three potentially contaminated workers who evacuated from the 11A hotcell building. The drill team's performance was also evaluated by an external team as part of the triennial review of the laboratory's EP program. Although the scenario was not challenging from a radiological perspective, it adequately exercised all significant aspects of the laboratory EP response organization and procedures.