

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

April 7, 2023

TO: Christopher J. Roscetti, Technical Director
FROM: B. Caleca, P. Fox, N. Huntington, and P. Meyer, Resident Inspectors
SUBJECT: Hanford Activity Report for the Week Ending April 7, 2023

105-KW Basins: A resident inspector observed a meeting of the contractor's Hazard Review Board (HRB), which was held to evaluate a work team's readiness to characterize two transfer cask assemblies (TCAs). The TCAs were used to transfer spent nuclear fuel from the 105-KE basin to the 105-KW basin between 2000 and 2004 during closure of the 105-KE basin. The conditions inside the associated shielded transfer casks, which are part of each TCA assembly, are not well documented and existing non-destructive assay information indicates the potential for substantial amounts of radioactive material and contamination within the TCAs. The HRB voted to accept the proposed work instructions pending resolution of several comments. They also determined that the team was adequately prepared to support the work. However, the resident inspector noted weaknesses in team member responses to scenario-based questions during the board's evaluation, and discussions during a mock pre-job review lacked detail. These observations were shared with the HRB chairperson who acknowledged they had also noted the weaknesses. Consequently, they had already directed a higher level of supervision of this activity by the responsible manager.

A resident inspector observed a mockup of the method the contractor plans to use to apply fixative within the TCA assemblies. The fixative is intended to prevent the spread of radiological contamination when a TCA lid is removed. Based on the mockup results, the method does not adequately distribute the fixative within the TCA and needs to be modified.

A resident inspector observed a demonstration of recently installed basin dewatering equipment held to resolve questions about the procedures recently approved by the contractor's Hazard Review Board (see 3/31/23 report). The resident inspector discussed with operators the process used for sampling basin water and observed discussions between DOE and contractor personnel concerning configuration control of the systems during operations. The operations personnel present were knowledgeable about the system and equipment.

Tank Farms: Double-shell tank (DST) AZ-102, the receiving tank for AX-101 waste retrieval, is nearly full. Consequently, WRPS has paused AX-101 retrieval pending transfer of the accumulated waste from AZ-102 to other DSTs to create space. There are three transfers scheduled before the end of the fiscal year. The first transfer from AZ-102 to AZ-101 is expected in early May. AX-101 is approximately 35% retrieved.

Waste Treatment Plant (WTP): Resident inspectors observed an emergency exercise at the WTP. The scenario involved an ammonia release resulting from the loss of control of a loaded immobilize low-activity waste container transporter and subsequent impact into the ammonia storage facility. The exercise identified a weakness in processes used to account for employees during an emergency. Additionally, while the response appropriately focused on the ammonia release, it did not adequately address the potential for a simultaneous spread of radiological contamination.