DEFENSE NUCLEAR FACILITIES SAFETY BOARD

May 10, 2024

TO: Timothy J. Dwyer, Technical Director
FROM: B. Caleca, P. Fox, and P. Meyer, Resident Inspectors
SUBJECT: Hanford Activity Report for the Week Ending May 10, 2024

Board's Technical Staff Activities: R. Jackson and A. Velazquez-Lozado were on site to review Waste Treatment Plant (WTP) High-Level Waste Facility structural concrete placements.

Fuels Facilities: Preparations are underway to complete the welding of cover caps on 15 multi-canister overpacks at the Canister Storage Building. A resident inspector observed the re-commissioned original welding equipment and training mockups currently in place at the facility. Contractor readiness activities are planned to begin next month, followed by a DOE readiness assessment in July. Welding activities are planned for August and September.

Waste Projects: Contractor personnel briefed the resident inspectors on the Contact-Handled Waste Processing Project. This new facility, currently in conceptual design, would enable the Hanford transuranic (TRU) waste program to support shipment of TRU containers to the Waste Isolation Pilot Plant (see 8/26/22 report). Conceptual design (CD-1) approval is anticipated in early FY26 with facility commissioning/startup in the 2030-2032 timeframe. The facility is planned to process more than 3000 waste drums and more than 500 waste containers, including large containers. Processing steps include container receipt, preparation, waste sorting, waste treatment, size reduction, packaging, secondary waste handling, and container transfer to storage or staging for transport. Concepts for facility layout were presented along with a discussion of the envisioned principal safety-significant controls which include the confinement ventilation system, the fire protection system, and the building structure.

242-A Evaporator: WRPS management declared their readiness to re-start the 242-A Evaporator, which has not performed hot operations since 2019. An independent contractor team is performing a readiness assessment, which is expected to conclude next week.

A resident inspector observed simulator drills conducted as part of the contractor's readiness assessment. He noted that the control room operations personnel did not consistently adhere to required communication protocols and did not appear to fully understand the technical safety requirements associated with the scenario or how to correctly enter or exit the applicable limiting conditions for operation. Additionally, although a safe end-state was reached, operating personnel missed or skipped key steps in the relevant procedures that resulted in a deficient response to the simulated events. During the daily team out briefing, the readiness assessment team observers noted similar deficiencies during their independent review of daily activities.

Waste Treatment Plant: A resident inspector observed the initial meeting of an accelerated response team, which is addressing the potential for incorrect sequencing of valves which can pressurize parts of the off-gas system. In some unlikely events, this could result in a release of hazardous gases within the facility. The team decided to pursue parallel alternatives to support facility startup. The first path would result in an engineering design that corrects the sequencing issue. The second path would result in a proposal to accept the risk resulting from the condition.