

## DEFENSE NUCLEAR FACILITIES SAFETY BOARD

August 4, 2023

**TO:** Timothy J. Dwyer, Acting Technical Director  
**FROM:** B. Caleca, P. Fox, N. Huntington, and P. Meyer, Resident Inspectors  
**SUBJECT:** Hanford Activity Report for the Week Ending August 4, 2023

**Waste Treatment Plant:** Having completed heat-up to operating temperature (see 7/21/2023 report) and meeting all other initial conditions, Low Activity Waste (LAW) Facility personnel began loading borosilicate frit into Melter #1 to establish the initial glass pool. They will load the frit in three stages and, so far, shift crews have loaded about half the frit necessary to complete the first stage. Joule heating will be initiated after the first stage, which will allow eventual removal of the startup heaters and installation of the bubblers. A resident inspector observed several meetings held by the contractor to plan and coordinate the complex operations that support this phase of Melter #1 startup. The meetings included key subject matter experts and were effective in identifying and resolving conditions that could impede or disrupt the frit addition process.

A resident inspector observed an operational drill at the LAW facility. The scenario was initiated with a simulated report indicating that the manufacturer of certain safety instruments had determined that the instruments required more frequent calibration. The increased calibration frequency resulted in the instruments being past their new calibration due dates. Shift personnel correctly evaluated the new information, took appropriate actions per facility procedures, and made all required notifications. The resident inspector noted that operations personnel worked well with supporting engineering personnel to develop a path forward that allowed continued operation of the melters after receiving required approvals and implementing appropriate mitigative actions. The drill team demonstrated good control and conducted an effective evaluation of the shift team performance and their own control of the drill.

**105-KW Basin:** A CPCCo Hazard Review Board (HRB) met to evaluate a work team's readiness to move remaining source term material from a Shielded Transfer Cask (STC) contained in Transfer Cask Assembly Two (TCA-2) to a vertical pipe casing (VPC). The TCA and VPC are both located within the basin structure. This action is required to support disposal of the TCA and STC. Based on previous characterization (see 4/7/23 report) the STC holds approximately 1700 curies of cesium-137, which is believed to be contained in a sludge layer at the bottom of the STC. To accomplish this task, the STC will be opened, and workers will use an eductor and associated hoses to move the sludge to the VPC. Safe accomplishment of the work will require proper placement of workers and maintaining an adequate liquid level so that personnel are protected from the high radiation fields that result from the sludge. The HRB recommended approval after the resolution of the HRB's comments.

**Tank Side Cesium Removal (TSCR):** Two individuals performing fire system maintenance inside the process enclosure airlock were sprayed with water when the system was pressurized with air to conduct a test. The individuals were not contaminated by the spray. The water spray was not expected because the system had been drained prior to the work. Based on information provided at an event investigation meeting, the water had collected in an unnoticed low point in the system. The procedure is being modified to prevent future similar occurrences.