

## DEFENSE NUCLEAR FACILITIES SAFETY BOARD

August 11, 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 11, 2023

**Waste Treatment Plant (WTP):** Shift crew personnel at the Low-Activity Waste Facility completed the first stage frit addition to melter #1 (see 8/4/2023 report), establishing a molten glass level of approximately 18 inches in the melter. This allowed them to start the transition from startup heaters to joule heating, which is the normal operational condition.

A small fire occurred in the melter #1 discharge plenum. While removing a temporary cover from a pour spout, workers decided to use flame retardant wood brackets to stabilize a metal plate when they paused to allow operators to confirm the removal did not affect temperature control. During their work, the team encountered an unexpected condition. They left the area to evaluate a path forward, leaving the plate resting on the wooden brackets, which were also in contact with the hot metal of the pour spout. About two hours later, the melter #1 operator noted a small flame while monitoring the area on a camera. The Hanford Fire Department was notified and responded but the fire had self-extinguished prior to their arrival. WTCC management performed an event investigation and is conducting a causal analysis to identify actions necessary to prevent the occurrence of similar future events.

**242-A Evaporator:** A Tank Operations Contractor (TOC) Corrective Action Review Board met to review the results of an apparent cause analysis of the December 2022 freezing event (see 1/6 and 1/20/2023 reports). The analysis identified the following causes: (1) failure to recognize and define controls to prevent freezing temperatures within the facility; (2) a lack of operations and engineering knowledge of the facility's ventilation system; (3) inadequate alarms and response procedures; and (4) degradation of conduct of operations, leading to organizational drift. Based on the results of the analysis, the TOC will perform a review of other facilities to ensure there are no implicit assumptions about controls used to prevent freezing temperatures and modify operator rounds to check temperatures in controlled spaces. The contractor is also evaluating all potentially affected systems at the evaporator, restoring full functionality of the environmental systems, and updating their system documentation to address some of the shortcomings noted during the investigation. They will also modify operator training. The resident inspector notes that the contractor's concern with organizational drift is consistent with past observations and field office concerns regarding TOC conduct of operations performance.

**Tank Side Cesium Removal (TSCR):** DOE approved an amendment to the Tank Farms safety basis to address issues with the estimated time for ion exchange columns (IXCs) to reach their lower flammability limit (LFL), which led to a positive unreviewed safety question (see 6/2, 6/16, and 6/23/2023 reports). The change modifies IXC blowdown requirements to ensure no portions of the IXC exceed the lower flammability limit after being blown down.

**Hanford Site:** DOE announced that Heather Dale will replace Bill Hamel, who retired in June, as the Assistant Manager for River and Plateau. They also announced that Tom Teynor will assume the role of High-Level Waste Project Manager for the WTP.