

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

September 6, 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 September 6, 2024

**Central Waste Complex:** During installation of a new safety-significant fire sprinkler system in building 2402WI, a CPCCo fire protection engineer observed that the installed height of the sprinklers may not be in accordance with requirements in NFPA 13, *Standard for the Installation of Sprinkler Systems*. Subsequently, the sprinkler system recently installed and restored to operability in building 2402WE was also found to have the same issue. An engineering evaluation was unable to establish that the sprinkler system could meet its safety function of preventing growth of a medium-sized fire. Facility personnel determined that system operability should not have been declared and, therefore, a violation of a technical safety requirement had occurred. A critique of the event identified several potential contributing factors including issues with the building drawings provided to the sprinkler system design subcontractor, inconsistencies with the design drawings produced by the subcontractor, and an installation note that was not followed by the installer. It was also noted that the as-built drawings were not yet available for review at the time the operability checklist was performed. The contractor will conduct an extent-of-condition review to ensure that sprinkler heights are code-compliant in other buildings. Additionally, a root cause evaluation will be performed.

**Low Activity Waste (LAW) Facility:** Operations and engineering staff are working to achieve planned glass throughput rates for Melter 1. During testing and preliminary operations, operators have found it difficult to manage plenum temperature, feed rate, and pour rate, and the glass throughput has been lower than expected. The engineering team has identified the most likely reasons for low pour rates and has developed a plan to investigate each potential cause. The team will use the information obtained from the investigation to adjust operating parameters, procedures, equipment, or operator training to improve operations and increase throughput.

**Tank Side Cesium Removal (TSCR):** WRPS started batch 3 of TSCR campaign 1A after completing the replacement of expended ion exchange columns (see 7/26/2024 report). This batch is expected to add approximately 187,000 gallons of processed waste to double-shell tank AP-106. At the beginning of this batch, AP-106 contained 450,000 gallons of processed waste, which has been sampled and determined to be compliant for acceptance at the LAW Facility.

During the testing of the TSCR fire protection system, multiple WRPS and HMIS personnel violated the hazardous energy controls by crossing the authorized worker boundaries without hanging locks. The workers were briefed that morning on the lockout/tagout requirements but did not adequately understand the two hazardous energy sources. As a result, even when workers showed a questioning attitude, they continued with the activity. In addition, the HMIS work package for fire system maintenance was not well integrated with the WRPS support package, and as a result failed to identify the hazardous energy sources in performing the work. WRPS recently completed a root cause analysis to address a negative trend in hazardous energy events going back to 2022, but primarily addressed work planning weaknesses in controlling hazardous energy. WRPS will conduct a standalone causal analysis to investigate this event.