

## DEFENSE NUCLEAR FACILITIES SAFETY BOARD

October 6, 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 October 6, 2023

**Hanford Site:** The DOE Chief of Nuclear Safety met onsite with contractor and DOE personnel to discuss ongoing high priority nuclear safety work. The resident inspectors and headquarters staff observed sessions related to the path forward for the Waste Treatment Plant High-Level Waste facility, the Tank Farm's Advanced Modular Pretreatment System, and the Solids Waste Operations Complex (SWOC) Documented Safety Analysis (DSA) development. The resident inspectors note the contractor's effort to incorporate the requirements of DOE-STD-5506-2021, *Preparation of Safety Basis Documents for Transuranic (TRU) Waste Facilities*, into the SWOC DSA is challenged because of the use of wood pallets at the Central Waste Complex (CWC). Fires involving waste containers on wood pallets provide a greater risk to workers and the public compared with when noncombustible pallets are used. Consequently, wooden pallets have been essentially eliminated in waste storage facilities across the DOE complex, except for the CWC.

**Waste Encapsulation and Storage Facility:** The contractor Plant Review Committee (PRC) met to evaluate new information related to hazards associated with strontium and cesium capsules. An evaluation performed by Pacific Northwest National Laboratory determined that the decay products occurring in the capsules could be reactive in air and water. The reactions could cause higher dose consequences for accidents involving the capsules, and new, unanalyzed hazards may exist. The PRC determined a Potential Inadequacy in the Safety Analysis exists. As a compensatory measure, the facility established a timely order that reiterates existing prohibitions on heavy loads and capsule movement in the storage pool and in G-cell.

**Tank Farms:** A work team completed a core cut in the dome of tank A-106 (see 9/15/23 report) and installed a new riser to support future retrieval work. The work required a high degree of coordination to minimize radiological exposure. The equipment had been previously tested, and many of the techniques the team used during the work had been developed and practiced at a mockup site (see 7/28/2023 report). Consequently, the work team was well-prepared to perform the work. A resident inspector, who observed the team perform the final cut, noted that the work to complete the cut and install the riser was professional, efficient, and safe. However, the team's radiological control performance did not always meet expectations. Although the observed issues were relatively small, they demonstrate a need to increase focus on developing habits that reinforce good contamination control techniques.

**Waste Treatment Plant:** The plant drill team conducted an operations field drill that required shift personnel to respond to a receipt of new information that placed the operability of instrumentation important to safety into question. The control and evaluation of the scenario was effective. Similar scenarios have been presented to operations crews five times. Two were evaluated as meeting expectation while performance on the other three did not meet expectation. Improving performance will most likely require either simplifying the procedure or providing additional training for individuals who respond to these events. Facility management is aware that better performance is needed and is developing an approach for improvement.