

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

December 18, 2020

TO: Christopher J. Roscetti, Technical Director
FROM: M. Bradisse, B. Caleca and P. Fox, Hanford Resident Inspectors
SUBJECT: Hanford Activity Report for the Week Ending December 18, 2020

DNFSB Staff Activity: M. Bradisse ended his detail assignment as a DNFSB resident inspector at Hanford site.

Tank Farms: The Tank Farm Operations Contractor completed testing and readiness checks for equipment installed to support retrieval of tank AX-104. AX-104 contains approximately 5,000 gallons of solid waste and 10,000 gallons of caustic. The caustic was previously added to the tank to shield the installed equipment from high radiation and help soften the waste (see 1/17/2020 report). TOC management declared readiness on Tuesday and intended to start retrieval on Thursday evening. However, during their initial startup attempt the slurry pump failed to start, despite being successfully tested three weeks ago. They are working to determine and correct the cause. Once they do start, they will recirculate the waste and caustic mixture over the weekend and then stop the recirculation while TOC personnel inspect it and evaluate data. More continuous retrieval operations, which will include transfer of waste to tank AZ-102, will commence if their data review confirms proper operation of the equipment and the absence of unexpected tank vapor excursions during the weekend run.

Solid Waste Operations Complex (SWOC): DOE RL approved revision 12B of the SWOC master documented safety analysis (DSA) and the associated technical safety requirements (TSR) document. This revision supports T-Plant receipt and storage activities for sludge transport and storage containers which will contain sand filter media from the 105-KW basin. In the approval letter, DOE RL noted that the TSRs still contain recovery plan action statements and further affirmed their expectation for removal of the recovery plan actions at the next scheduled annual update of the document (see 9/25/2020 report). Additionally, the approval notes that this revision of the DSA and TSRs does not address modifications that are required as a result of the evaluation of the safety of the situation that determined that safety analysis changes are required to address deviations from guidance contained in DOE STD 5506, *Preparation of Safety Basis Documents for Transuranic (TRU) Waste Facilities*, as identified by DOE RL in an earlier assessment (see 7/25/2020 report). Required compensatory measures remain in effect at the Central Waste Complex.

Central Waste Complex: While performing required TSR weekly surveillances, workers discovered that corrosion had increased on a waste drum that was on a facility watch-list. Additionally, they noted liquid droplets in the corroded area, indicating the possibility of a pinhole leak. The workers stopped work and exited the building, and the facility entered the appropriate limiting condition for operation. Facility management developed a recovery plan and a team performed a re-entry later in the day. Inspection of the drum did not identify any contamination on or around the exterior of the drum but a check determined that the pH of the liquid in the area of the corrosion was in the 0-2 range, indicating potential leakage from within the drum. The contractor subsequently performed a TSR required evaluation and determined that the drum, which is safety significant, is no longer operable. The drum has been overpacked.