

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

November 24, 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 November 24, 2023

Tank Farms: The contractor's Corrective Action Review Board (CARB) met to evaluate an analysis performed to identify the causes for crushed insulation found during the excavation of buried AP farm waste transfer lines (see 5/19/23 report). The condition resulted in a positive unreviewed safety question because the observed thickness of the insulation was less than the thickness assumed in a calculation performed to ensure the transfer lines are protected from freezing, as required by Technical Safety Requirements (see 5/26/23 report). The analysis determined that the design process did not result in the selection of insulation and associated flexible ducting that could withstand the loads resulting from soil compression and vehicular traffic over the buried piping. The design deficiencies were specifically attributed to incorrect design inputs and errors in equipment selection. However, the corrective actions developed from the analysis only addressed the conditions found without addressing the identified causes. Consequently, the opportunity to prevent similar occurrences in the future appeared to have been missed. When this topic was raised during the meeting, engineering representatives on the CARB noted that the transfer pipe system was designed and installed in the 1980's and, although not addressed in the report, current design processes would likely prevent a recurrence. Because of this, the CARB decided to simply acknowledge the corrective action gap by adding a statement in the report addressing their position that improvements in design practices would prevent future occurrences of similar events. The CARB approved the analysis and the defined corrective actions, with comments. Based on subsequent discussions with the Deputy Chief Engineer, additional work is being performed to confirm the assumption that recent changes to design procedures have closed the process gaps that resulted in the failed insulation and contain adequate safeguards to ensure future appropriate design inputs or equipment selection.

WRPS personnel completed replacement of expended Tank Side Cesium Removal System ion exchange columns and commenced processing batch five. This batch should complete the initial run of this campaign. The existing effluent may require additional processing because of higher-than-expected cesium concentrations in double-shell tank AP-106 (see 10/20/23 report).

Waste Encapsulation and Storage Facility (WESF): The contractor held a readiness review determination meeting to discuss the startup for the WESF transfer, packaging, and delivery of the Cask Storage System Casks. The contractor and DOE determined that a DOE Readiness Assessment was appropriate for starting WESF operations after facility modifications are complete and required equipment is installed. This decision will be recorded in the upcoming Startup Notification Report. There was considerable discussion on how each step of the new process will be demonstrated prior to startup. It was determined that use of a mock fuel capsule would be employed, with the details of the demonstration plan being incorporated into the plan of action.