

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

May 20, 2022

TO: Christopher J. Roscetti, Technical Director
FROM: B. Caleca, P. Fox, and P. Meyer, Hanford Resident Inspectors
SUBJECT: Hanford Activity Report for the Week Ending May 20, 2022

DNFSB Staff Activity: Staff members D. Brown, R. Csillag, and J. Flora were on site this week to review Building 324 operations.

Hanford Site: The Resident Inspectors and headquarters staff members observed the site emergency planning team's annual evaluated field exercise. The scenario simulated an explosive device detonation involving radioactive waste storage containers near Building 324. The Emergency Operations Center (EOC) was activated and a simulated injured and contaminated person was transported to a local hospital to exercise one of the Hanford Site's external medical support options. EOC coordination, communications, dose assessment, and plume tracking capability were also evaluated.

Tank Farms: The Tank Operations Contractor Executive Safety Review Board (ESRB) met to review the results of a root cause analysis (RCA) that focused on deficiencies related to supply chain issues identified during the Tank Side Cesium Removal (TSCR) system procurement. The RCA scope covered 10 supplier corrective action reports (SCARs), 112 condition reports (CRs), and 17 action requests (ARs) that documented material or process deficiencies associated with the TSCR system procurement. The RCA team identified significant quality assurance management process issues including, (1) less than adequate development and review of design changes, (2) a deficient supplier quality assurance program, and (3) less than adequate supplier inspections. The issues were exacerbated by an aggressive procurement schedule that required design in parallel with system procurement and the supplier's over-reliance on industry standards and skill-of-the-craft. Contributing causes included an inadequate prime contractor review of the quality assurance program at one of the supplier's fabrication shops, inadequate receipt inspections, delivery of the system before all components were fabricated and installed at the factory, and an inadequate SCAR/Nonconformance Report (NCR) management process. The ESRB voted to accept the RCA report and its corrective actions. The Resident Inspectors note that Board's staff reviewers recently identified an NCR process error during their review of TSCR ion exchanger column threaded connection repairs. Since this error occurred after the problems addressed in the RCA, a review of compensatory measures, which remain specific to individual SCARs, NCRs, CRs, and ARs, should be considered to further reduce the potential for additional NCR process errors while TOC personnel complete identified corrective actions.

Waste Encapsulation and Storage Facility. A Resident Inspector observed a Plant Review Committee (PRC) meeting that contractor management held to evaluate a potential inadequacy of the safety analysis (PISA) concerning a discovery of less grout in the hot pipe trench under grouted hot cells than previously analyzed. A prior structural analysis concluded that the cell floor could not support the grout load in the hot cells during a design basis earthquake without the hot pipe trench and ventilation tunnel being fully grouted. The PRC members unanimously concurred that a PISA existed. The PRC discussed whether compensatory measures were required and concluded they were not since there are no compensatory measures which can mitigate the risk of a seismic event. Further, they noted that the truckport cover block weighing approximately 30,000 pounds was stored over grouted hot cells for more than a year with no indication of damage or failure.