

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

June 24, 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 June 24, 2022

Staff Activities: Members of a Board's staff review team met with representatives from DOE-ORP and the Waste Treatment Plant (WTP) contractor to discuss the results of their recent review of WTP safety management programs. The discussion focused on the WTP contractor's implementation of their chemical safety management program and its interface with the Low Activity Waste (LAW) Facility documented safety analysis and Hanford DOE's implementation of integrated safety management.

J. Abrefah was onsite to attend a meeting of the Tank Integrity Expert Panel. The meeting covered various aspects of Hanford site's tank and pipeline integrity program including tank condition monitoring, corrosion control, pipeline and encasement fitness for service evaluations, and the status of concrete spalling that has occurred in some single shell tanks.

Tank Side Cesium Removal (TSCR): The Tank Operations Contractor (TOC) started the second TSCR System batch run. The TSCR system startup was uneventful, and the system has run continuously since it was placed online. Since the beginning of this batch run, the system has processed 38,000 gallons, which was added to the batch 1 LAW feed inventory in double-shell tank AP-106. This is 19% of the anticipated volume for batch 2. Currently, the TOC has staged a total of 234,000 gallons of processed waste to support LAW Facility startup, which represents about 24% of the planned processing campaign.

A resident inspector performed an inspection of couplings that connect the TSCR process hoses to the ion-exchange columns. The inspection revealed damage on seven connectors. Based on the observed conditions, the damage confirms reports that the resident inspectors received from the work force regarding the use of unapproved tools and inappropriate torquing of the connection nuts. The damage most likely occurred during pre-operational testing. Additionally, the resident inspector noted that there were differences in connector thread engagement that raise questions about whether the current joint assembly procedures provide adequate assurance of joint integrity. The resident inspector met with both TOC and DOE managers to discuss the conditions found, noting that use of unapproved tools and inappropriate application of torque can cause damage to connector threads and result in unplanned stresses and damage to other system components. Additionally, he discussed the importance of coupling thread engagement in the performance of the component's safety function. TOC managers acknowledged the resident inspector's concerns and stated that they would evaluate the identified conditions.

242-A Evaporator: TOC engineers continued their evaluation of the safety-significant solenoid valves that failed to operate correctly during post-installation acceptance testing (see 6/17/2022 report). Visual inspections of the solenoid valves determined that the most likely cause of the failure is fouling of the solenoids caused by pipe dope that was used during assembly of instrument air system joints associated with the solenoid valves. The next steps of their evaluation will include disassembly and further inspection of piping and solenoid valve internals and development of a path forward to address the non-conforming condition.