

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

September 22, 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 September 22, 2023

Board Activity: DOE briefed the Board on their progress in completing actions to resolve Board concerns related to seismic and fire hazards at the 242-A Evaporator. The brief was given in response to a Board letter dated June 27, 2023. DOE will provide semi-annual updates on their progress until the actions defined in DOE's letter dated April 17, 2023, are complete.

Staff Activity: Q. Boney and D. Montierth were onsite to observe activities at the Low-Activity Waste Facility. Their observations support an ongoing review of DOE and contractor actions to establish readiness to start nuclear operations at the facility.

Waste Treatment Plant (WTP): The resident inspectors met with WTCC engineering managers and subject matter experts to discuss the condition of the WTP site cathodic protection system and ongoing actions to restore adequate performance of the system. The system protects buried piping important to WTP operations, including pipe in ammonia, air, and water distribution systems. The resident inspectors requested the meeting after reviewing a system health report that indicated 29 of the system's 140 vertical anode locations have failed anodes and the measured performance at 31% of the cathodic protection test stations does not meet requirements. During the brief, the contractor discussed potential causes for the anode failures, with broken anode leads being the most likely cause. They also outlined the actions they are taking to definitize the cause(s). Although performance has degraded, the contractor noted that they have a robust program in place to monitor pipe and pipe coating conditions. Additionally, they have implemented compensatory measures, which include increased anode inspection frequencies (monthly vice annually) and adjustment of the system rectifiers based on independent corrosion expert recommendations. Consequently, they intend to take a deliberate approach in resolving the problems, which may include redesign or replacement of the system.

Tank Farms: A resident inspector observed a demonstration of equipment that WRPS will use to clean, visually inspect, and ultrasonically test the primary pipe of AW and AP tank farm transfer lines (see 8/25/2023 weekly report). Only a portion of the transfer lines will be ultrasonically tested since the size and shape of the testing device limit its ability to move past pipe bends. The system performed successfully during the demonstration.

242-A Evaporator: Facility personnel are preparing to replace the P-B-2 slurry pump and skid, two safety significant pressure safety valves, and a pressure element if time allows. The pump is being replaced because it is roughly 30 years old and its mechanical seal leaks excessively. As the jumpers are removed from the pump, they will be inspected for possible freeze damage resulting from a low temperature excursion that occurred in the facility this past winter (see 1/06 and 1/20/2023 reports). A resident inspector observed the contractor's JRG meeting, which was held to evaluate the adequacy of the work instructions and whether the work team is ready to perform the task. The field work supervisor was knowledgeable about the scope of work, however, the JRG did not substantially test their knowledge on abnormal event response actions and safe configurations. The JRG approved the work with minor comments.