DEFENSE NUCLEAR FACILITIES SAFETY BOARD

October 29, 2021

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 October 29, 2021

Liquid Effluent Retention Facility (LERF): While removing piping equipment associated with the LERF Basin 44 cover replacement, workers discovered contaminated solids in the basin's permanent piping. Tank Operations Contract (TOC) personnel have sent samples of the material for testing and taken photos to gather more information. A Plant Review Committee (PRC) met to discuss the possible causes of the accumulation and determine whether the condition represents a potential inadequacy of the safety analysis (PISA). They determined that a PISA does exist. Safety basis personnel will evaluate the PISA and propose an unreviewed safety question determination for PRC consideration. A resident inspector met with the responsible safety basis engineer to discuss potential impacts to the Basin 42. That basin has received liquid from Basin 44. Although liquid transfers were filtered after the discovery of solids in Basin 44 (see 7/19/2019 report), unfiltered transfers occurred before that. The safety basis engineer does not believe solids were transferred to Basin 42 because none of filters used during the filtered transfers showed evidence of solids accumulation or failure, and the lowest liquid level in Basin 44 while being pumped to Basin 42 prior to filtration was three feet. However, the presence of the solids in the piping remains unexplained. They will need to develop a technical justification for their assumption that solids were not transferred to Basin 42.

REDOX Plant: Resident Inspectors walked down the REDOX plant exterior areas with project personnel and the DOE facility representative. They observed and discussed the contractor's progress on facility modifications that will support risk reduction activities at the facility. Three large HEPA filter banks with new exhaust fans, which will replace the existing sand filter and fans, were placed outside the facility in FY21. The exhaust tunnel to the existing equipment will be closed and the new equipment will be connected to the tunnel upstream of the closure. Workers have completed the excavation work to support the connection and will start the connection work in November. Bidding for subcontracted work to breach the north side of the facility and construct an airlock large enough to allow the use of forklifts for removing equipment and waste from the facility is in progress. The resident inspectors also walked down the trailer village which was established to accommodate more efficient radiological entries. The ongoing work will significantly improve the efficiency and safety of risk reduction work.

Waste Treatment Plant: Management held a fact finding meeting to review an unexpected loss of the Laboratory (Lab) facility C3V ventilation flow that occurred when workers were installing a lockout/tagout (LOTO). Although the system design provides two power sources for the fans, a trip occurred when the LOTO installer opened the primary power supply breaker for the operating fan. A subsequent investigation determined that the breaker for the alternate power source was not closed. The LOTO authorizer had checked the system status records for known deviations in the electrical system lineup that could affect the LOTO, but a physical check of the alternate supply breaker position was not performed. This is the second time in a month that a loss of Lab facility ventilation was caused by an unexpected breaker position. The event indicates a need for increased rigor in the maintenance of plant status and, once again, points to a need for a thorough review of the LOTO procedure and related training (see 10/22/2021 report).