DEFENSE NUCLEAR FACILITIES SAFETY BOARD

June 23, 2023

TO: Katherine Herrera, Acting Technical Director
FROM: B. Caleca, P. Fox, N. Huntington, and P. Meyer, Resident Inspectors
SUBJECT: Hanford Activity Report for the Week Ending June 23, 2023

Low Activity Waste (LAW) Facility: The contractor's emergency planning and response (EP&R) team conducted an evaluated drill for Crew B. The scenario presented to the crew was an un-isolable ammonia leak from one of the large storage tanks located at Building 23. The crew's response to the event was hampered by their inability to obtain accurate wind speed and direction information. This prevented the identification of safe travel paths for individuals who are assigned to the facility emergency response organization (FERO) but located in trailers a substantial distance from the LAW Facility, resulting in a significant delay in staffing both the incident command post and the FERO field team. This is the second time in two months that the resident inspector has observed delays in fully staffing the FERO. The contractor EP&R organization has initiated actions to improve their ability to obtain meteorological data that is representative of the conditions at Building 23. However, the resident inspector notes that this action will not address other factors, such as the location and assignment of FERO personnel, and preparation of equipment, which also slows the FERO's response to simulated emergency events.

Tank Side Cesium Removal (TSCR): A resident inspector observed a plant review committee (PRC) meeting to evaluate and approve safety basis changes to address the positive unreviewed safety question concerning the time for TSCR ion exchange columns (IXC) to reach their lower flammability limit without ventilation (see 6/2/2023 and 6/16/2023 reports). The changes will reduce the time to perform surveillances for sweep air flow while in a limiting condition of operation. The PRC voted to approve the changes and submit them to DOE for approval.

TSCR shut down twice this week due to a differential pressure interlock engaging when attempting to valve in the third IXC. Upon further investigation, engineering personnel identified a logic error in the process control software and interlock on-delay times that increased the likelihood of spurious trips. The software error was corrected, and processing has resumed.

REDOX: A resident inspector observed a field walkdown by contractor personnel that was required prior to venting a fissile material line in the REDOX facility's sample galleries. Venting of the line is required prior to sampling and draining of the line. Based on preliminary estimates, criticality controls are required for this work activity, primarily to prevent accumulation of liquids in an unfavorable geometry should it escape the pipe. During the walkdown, the resident inspector noted a leaking valve in the line had been recently bagged with a drain tube ending in a collection tray. This did not meet the geometry or drainage requirements of either the work package controls or the contractor's criticality safety evaluations (CSEs). The resident inspector notified the field office general services support contractor, the responsible manager, and the field work supervisor who were part of the walkdown. The responsible manager concurred, paused work, and restricted access to the facility. Contractor management determined this to be a DOE reportable occurrence, then directed all collection trays not in compliance with the contractor CSEs be removed pending further investigation.