

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

December 20, 2024

TO: Timothy J. Dwyer, Technical Director
FROM: B. Caleca, P. Fox, and P. Meyer, Resident Inspectors
SUBJECT: Hanford Activity Report for the Week Ending December 20, 2024

Waste Encapsulation and Storage Facility: While performing a failure modes and effects analysis, engineers discovered that the WESF G cell door may open during a seismic event. The door shields workers from significant radiation exposure when capsules are inside G cell. As part of a radiation interlock system, a spring in the door latch assembly maintains a force on the latch that keeps the door from opening. The force transferred to the latch during a seismic event was calculated to significantly exceed this force. A potential inadequacy in the safety analysis was declared and a positive unreviewed safety question determination was made. The safety basis will be updated to address the hazard and controls will be developed as necessary.

Low Activity Waste (LAW) Facility: A mechanical handling team damaged rigging equipment when an expended bubbler they were bagging became caught because of a misalignment while being lifted by a melter bay crane. During the event investigation, the team and other subject matter experts noted that a design change that might have prevented the incident had been developed but not installed. Additionally, the team noted that the staffing for the evolution was less than usual resulting in at least one individual being out of position during the lift. Lastly, although this damage mechanism was well understood, appropriate steps, cautions, or warnings were not included in the procedure to prevent this result. Plant management placed the crane and related equipment out of service until the components could be inspected for damage. The rigging equipment, itself, will be discarded rather than repaired.

DNFSB Staff Activity: A staff review team met with WTCC and DOE personnel to discuss the team's preliminary observations from their review of operations at the LAW Facility. The team will present their observations to the Board after incorporating feedback from DOE and WTCC.

222-S Laboratory: The contractor's Joint Review Group (JRG) approved, with comments, a work package to convert the 1F hot cell into an active storage hot cell. The work scope includes removal of a microfiltration unit, a pneumatic hoist and associated equipment, and support brackets, as well as inspecting the ventilation system and applying paint. A detailed presentation of the work to be performed was provided by the work team. The JRG was well prepared, highly organized, and thorough in their review of the work activities and associated hazards, challenging the work team on responses to unanticipated conditions and emergency scenarios.

Low Level Burial Grounds: While evaluating a subsidence in burial ground 3A, a worker's leg sunk into a soft spot near the edge of the subsidence. The worker extricated their leg and notified the shift office of the event. Whole body surveys of the of the individual verified no contamination was present. During the critique of the event, it was observed that although soil addition and compaction was performed earlier this year, recent rains may have contributed to the subsidence. Facility management will be reviewing those work records as well as their surveillance procedures for improvements, including requiring two workers to be present.