DEFENSE NUCLEAR FACILITIES SAFETY BOARD

July 25, 2025

TO: Technical Director
FROM: Hanford Site Resident Inspectors
SUBJECT: Hanford Activity Report for the Week Ending July 25, 2025

Tank Side Cesium Removal (TSCR) System: Engineers working on the Advanced Modular Pretreatment System (AMPS) design discovered an error in a TSCR calculation used to determine the expected passive ventilation flow rate for expended Ion Exchange Columns (IXC) loaded with cesium. The safety basis designates passive ventilation flow as a significant contributor to defense in depth for protecting workers from the effects of a flammable gas deflagration or detonation that occurs inside an IXC. The IXC and its sub-components, which are designed to maintain structural integrity and confine the loaded ion exchange media if an event occurs, are the primary control for these hazards. An H2C Plant Review Committee subsequently determined that this condition is a Potential Inadequacy in the Safety Analysis. Plant management has limited access to the expended IXC storage pad to ensure protection of workers until nuclear safety analyzes the safety question and DOE approves removal of the compensatory measure. This is the second error with a potential effect on safety basis controls discovered during the review of the TSCR calculations by the AMPS design team. The discoveries raise questions regarding the quality of safety basis calculations performed by the H2C sub-contract design agent, and the subsequent acceptance of those calculations. This observation was discussed with the H2C deputy chief engineer, who stated that they had a similar concern and are addressing the issue with the sub-contracted design agent.

Tank Farms: H2C initiated a week-long safety stand down, pausing non-essential operations and holding all-hands meetings with its workforce, including management, to discuss the recent spike in events potentially affecting safety (see 7/18/2025 report).

Central Waste Complex: While overpacking selected drums with external corrosion/damage, workers discovered a separate drum that appeared to have internally developed corrosion that penetrated the drum wall. Radiological surveys identified high alpha contamination levels on the drum and pallet. The workers responded appropriately and subsequently overpacked the drum to restore operability of the container. The discovery of a significant number of failed drums during recent movements to improve the fire protection posture of the waste storage facilities continues to raise questions regarding the adequacy of the container surveillance process for ensuring operability of the safety-significant containers, and the need for more rigorous radiological controls during drum movement (see 5/23/2025 report).

Low-Activity Waste (LAW) Facility: During a survey, Industrial Hygiene Technicians (IHTs) detected a small release of ammonia from a partially opened bleed valve near the ammonia storage tanks. The IHTs reported the leak to the LAW shift operations manager, who initiated a take cover as required by the facility's abnormal operating procedure until the leak was stopped. While the amount of ammonia released was negligible, contractor personnel held a hot wash, noting that radio and alert notifications were delayed due to technical issues, and the need for a better-defined graded approach to respond to releases that may not require a take cover.