

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

May 8, 2026

Hanford Site Resident Inspectors Activity Report for Week Ending May 8, 2026

Low Activity Waste (LAW) Facility: An outside contractor, Airgas, delivers ammonia to the B23 storage tanks approximately every six months, with the offload procedure developed and controlled by WTCC. While employees were venting the delivery hose into the B23 vent stack, icing caused ammonia to condense and drip from the vent's weep hole. Two WTCC commissioning technicians and the Airgas truck driver had their personal air monitors alarm, indicating greater than 300 parts per million (ppm), and left the area upwind along with their industrial hygiene support and made notifications to the shift office. The resident inspector attended a post-job meeting and noted that all appropriate personnel from WTCC and Airgas were present. The Airgas employee stated that the icing phenomenon is well understood and typically controlled by slow throttling of the hose valves and the use of water poured or sprayed on valves to keep ammonia from freezing. WTCC management stated that ambiguous modifiers in procedures such as "slowly" are not permitted, but participants discussed alternative language or training on ammonia valving. In addition, participants suggested that having a water sprayer or heating blanket would help prevent ice buildup in the hose and vent piping. The resident inspector identified that because at least one boundary zone monitor had also alarmed, the emergency action level (EAL) criteria had been met to declare an Alert, triggering certain emergency response actions. Operations personnel discussed how the shift manager elected to contact operations management, who in turn consulted with management from the WTCC emergency preparedness program, at which time it was agreed an Alert was unnecessary given the leak appeared to be well-understood. The shift manager gave no direction to take cover, but WTCC establishes a 100-foot isolation zone during ammonia deliveries. Given that the shift manager did not declare an operational emergency despite conditions meeting observable EAL criteria, site personnel did not appear to identify a need for additional clarity in the EALs. Other participants in the post-job briefing mentioned that there was a limited number of workers qualified to respond on supplied air respirators to perform recovery actions and there were delays to acquire shaving tools to allow workers to meet mask-fit requirements. Further review by the resident inspector of the abnormal operating procedure and form indicates that the shift manager made a radio and public address message but failed to also make announcements via the WTP Alert system as required, and that the shift manager only had upwind readings at the 100-foot isolation boundary that is established during ammonia deliveries.

Effluent Management Facility (EMF): The resident inspector attended a Team Planning Meeting for the procedure to transfer EMF bottoms, the concentrated form of waste generated by LAW, to a DOT-compliant shipping container. This material will be trucked to PermaFix Northwest in Richland, WA to be grouted, and the grout will then be sent to EnergySolutions in Clive, UT. The resident inspector notes that the shipping container is functionally similar to the one used by H2C for the Test Bed Initiative treated waste. The primary hazard is exposure to EMF bottoms due to a leak from the hose or fittings. A full-scale mockup is currently being developed to fine-tune the procedure once a job hazards analysis and further development of the work steps are complete. The resident inspector noted that participants included CTs from the shift anticipated to perform the first transfers and all relevant subject matter experts.