

## DEFENSE NUCLEAR FACILITIES SAFETY BOARD

June 7, 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 June 7, 2024

**Waste Treatment Plant:** BNI Nuclear Safety conducted a briefing for individuals who will perform a hazard analysis effort that will evaluate facility wide hazards. Facility wide hazards result from significant events, such as earthquakes, fires, and explosions, and can cause significant hazardous material releases or other hazards that affect workers in the entire facility or other individuals in the surrounding area. Based on the information presented during the briefing, this effort will update the hazard analysis to reflect DOE's plan for direct feed of waste to the High-Level Waste Facility. Additionally, the team will incorporate the results from the most recent consequence analyses, which indicate substantially lower unmitigated accident consequences to collocated workers and public receptors. The team will use methods and requirements from DOE-STD-3009-2014, *Preparation of Nonreactor Nuclear Facility Documented Safety Analyses*, to support their analysis. Additionally, the analysis team will use an updated set of codes and standards to inform their analysis and will also use pre-approved rules, which are designed to focus and limit the effort, along with recently developed hazard control selection guidance. The resident inspectors note that the changes in accident consequence analyses will substantially reduce conservatism in the safety design for the facility. Further, some selection guidance being provided to the team could result in the selection of administrative and worker self-protection controls while eliminating engineered hazard controls for facility and collocated workers, which were identified in earlier hazard analysis efforts.

**Radiochemical Processing Laboratory (RPL):** The Pacific Northwest National Laboratory (PNNL) conducted a quarterly emergency preparedness drill. The scenario involved an earthquake causing damage to RPL, prompting a facility evacuation and a subsequent Hanford Fire Department response to recover an injured worker and inspect the damage. Further collapse of the building during the drill forced an upgrade to the event classification and relocation of personnel. The resident inspector noted that PNNL involved all facility workers save for a small number of exempt personnel, enhancing the quality of the drill. Participants were engaged and freely provided constructive feedback following the drill.

**Central Waste Complex (CWC):** After a resident inspector identified some waste storage buildings did not have lightning protection systems (LPS) (see 4/5/2024 report), the contractor performed an evaluation to determine if LPS were required per Appendix L of NFPA 780, *Standard for the Installation of Lighting Protection Systems*. Based on this evaluation, the contractor determined that LPS are not required for the waste storage buildings at CWC. Given this, the resident inspector asked the engineering and nuclear safety personnel how transuranic waste storage containers were protected from lightning strikes in the safety basis. A lightning strike is identified in DOE-STD-5506 *Preparation of Safety Basis Documents for Transuranic (TRU) Waste Facilities* as a natural phenomenon hazard requiring evaluation. The contractor agreed to evaluate how the current safety basis addresses the hazard and determine if there are any gaps.