

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

May 19, 2023

TO: Christopher J. Roscetti, Technical Director
FROM: B. Caleca, P. Fox, N. Huntington, and P. Meyer, Resident Inspectors
SUBJECT: Hanford Activity Report for the Week Ending May 19, 2023

DNFSB Board and Staff Activities: Vice Chairman T. Summers and Board's staff members S. Abdi, A. Hutain, F. Ruz-Nuglo, and B. Sharpless visited Hanford Site and the Pacific Northwest National Laboratory (PNNL) to observe the annual site emergency exercise. The visit included discussions related to emergency planning and response and was supported by visits to the Hanford Site Emergency Operations Center (EOC) and the 200 Area fire station. Additionally, they visited the PNNL Radiochemical Processing Laboratory (RPL), as well as the Hanford Site Canister Storage Building, Interim Storage Area, Environmental Restoration Disposal Facility, and 222-S Laboratory to walk down the facilities and gain an understanding of operations within the scope of the DNFSB mission. Lastly, Mr. Summers and the rest of the team received a tour of equipment installed at the Maintenance and Storage Facility, located in the Hanford Site 400 Area, as a high-fidelity mockup of the Waste Encapsulation and Storage Facility. The mockup supports equipment testing, procedure development, and training for the upcoming retrieval of strontium and cesium capsules from the Waste Encapsulation and Storage Facility pool, and their placement into casks for dry storage at the new Capsule Storage Area.

Hanford Site: The site conducted its annual sitewide emergency exercise at the RPL, operated by PNNL but located in the 300 area of the Hanford Site. The exercise scenario involved a criticality event causing multiple fatalities, injuries to several workers, and evacuation of the facility. In addition, a player remained in the facility, requiring the emergency response organization to identify the individual and coordinate an extraction with the Hanford Fire Department. Resident inspectors and visiting headquarters staff observed from the field, incident command post, and the Hanford Site EOC.

Tank Farms: Retrieval of AX-101 resumed this week after being on pause due to space constraints (see 4/07/23 report). A transfer from the receiving tank AZ-102 to another double-shell tank AZ-101 occurred the first week of May, which provides approximately 73,200 gallons for retrieval space. Since resumption, operations personnel have transferred approximately 12,500 gallons to the receiving tank. AX-101 is approximately 37 percent retrieved.

Multiple waste transfer lines have been excavated in the AP Farm to evaluate pipeline integrity after moisture was found in waste transfer line encasements (see 3/31/2023 report). These transfer lines are designed with surrounding foam-coated flexible ductwork, which allows for an air gap around the transfer line encasement. The excavation revealed places where the flexible ductwork has collapsed, eliminating the air gap, and places where the foam insulation has been crushed. The Plant Review Committee (PRC) met to discuss the impacts of this new information on analytical inputs and assumptions to a detailed thermal model, which is utilized in the documented safety analysis to ensure the transfer lines are not at risk of freezing (see 6/5/2020 report). The PRC concluded that a potential inadequacy of the safety analysis exists and will proceed with an unreviewed safety question determination next week.