

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

September 15, 2023

TO: Timothy J. Dwyer, Acting Technical Director
FROM: B. Caleca, P. Fox, N. Huntington, and P. Meyer, Resident Inspectors
SUBJECT: Hanford Activity Report for the Week Ending September 15, 2023

Waste Treatment Plant: Updated BNI calculations using proposed changes to the High-Level Waste Facility waste acceptance criteria, reduced conservatism, and changes in feed and delivery parameters, result in substantially lower radiological consequences to both the public and collocated workers from most design basis accidents. Because of the changes, BNI Nuclear Safety is starting a re-analysis of crane and manipulator hazards. The re-analysis is necessary to clarify safety classification of the cranes, manipulators, and related support equipment prior to placing the permanent roof on the facility. The lead hazard analyst held a pre-task brief that covered the purpose and scope of the effort, as well as the significant assumptions and initial conditions that the team will use during the analysis. The assumptions and initial conditions rely heavily on passive features designed into the facility to eliminate a significant number of crane fall or drop scenarios, and to reduce or prevent significant consequences to facility workers.

242-A Evaporator: The DOE Senior Review Board (SRB) met to evaluate an extensive amendment to the 242-A Evaporator safety basis. Among other changes, it includes revisions to two existing planned design and operational safety improvements that address Board issues. The improvements commit to install a safety-significant (SS) engineered control to prevent failure of other safety systems caused by a fire, and a SS seismic switch to place the evaporator in a safe condition if a seismic event occurs before September 30, 2027. The amendment also establishes a new specific administrative control (SAC) that limits the presence of combustible materials in the condenser room and modifies a key element control to create a SAC that requires manual dump of the evaporator if a seismic event occurs. Both SACs will serve as interim controls until the engineered controls are installed. The SRB chairman raised several questions not specifically related to the Board's concerns. They chose not to hold a vote until the questions are resolved.

222-S Laboratory: A resident inspector observed an emergency preparedness drill held at the 222-S Laboratory. In this scenario, a work crew was removing an 11A hot cell window when debris from a microburst impacted and damaged the side of the building, causing the workers to drop the window. As a result of the building damage and drop of the window, some individuals were contaminated, a worker was injured, and power was lost to the facility. The initial response and communication from the building emergency director and facility emergency response organization members was strong. At the event scene, the resident inspector heard three-way communication when personnel discussed turn back values and provided survey results. Some weaknesses were observed with the radiological control response and establishing boundaries. The drill coordination team held a post drill evaluation that discussed some of these weaknesses and the resident inspector shared their observations with the drill control organization.

Tank Farms: This week the contractor installed the first section of drill casing in the soil above tank A-106 utilizing the tank dome core cutting system (see 7/28/23 and 9/8/23 reports). They expect to complete installation of all three sections of casing next week, then begin cutting through the concrete tank dome the following week pending approval of the work package.