

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

June 30, 2023

TO: Katherine Herrera, Acting Technical Director
FROM: B. Caleca, P. Fox, N. Huntington, and P. Meyer, Resident Inspectors
SUBJECT: Hanford Activity Report for the Week Ending June 30, 2023

DNFSB Staff Activity: R. Csillag, R. Eul, and S. Seprish were onsite to lead discussions with the DOE Office of Science and PNNL Radiochemical Processing Laboratory (RPL) personnel regarding the implementation of aging management programs for the 325 facility. J. Plaue, Associate Technical Director for Nuclear Facility Infrastructure and Projects, was onsite to participate in the review meetings and evaluate the status of major nuclear facility projects.

Waste Treatment Plant: Plant operators restarted the initial heat up of Low-Activity Waste Facility melter #1 after resolving the power supply problems that were encountered during the initial heat up attempt (see 10/14/2022 report).

324 Building: DOE announced that CPCCo has determined that the soil contamination area located below the 324 Building is larger than expected. Based on the changed condition DOE is evaluating changes to the cleanup approach for this waste site. Under the current approach, DOE had planned to recover the contaminated soil before removing the building. DOE is now considering a resequencing of the work. The approach under consideration would deactivate the 324 Building, demolish it to slab on grade, and then build a containment superstructure over the slab prior to remediating the contaminated soils. DOE believes the modified approach will be safer. The changes are contingent on successfully completing the applicable regulatory processes. Based on ongoing monitoring activities, the contamination plume is considered stable and there is no indication that the existing contamination is migrating into the groundwater.

Advance Modular Pretreatment System (AMPS): DOE has initiated the next phase of the LAW pretreatment project, which will construct a larger and more durable cesium removal capability. This phase will leverage lessons learned from the successful Tank Side Cesium Removal project. The project's Safety Design Integration Team held their initial meeting. Their first task is to develop a safety design strategy for the new capability. Under the current plan, the strategy will produce a safety analysis using the current version of DOE-STD-3009, *Preparation of Nonreactor Nuclear Facility Documented Safety Analysis*, and then integrate the result into the Tank Farm Documented Safety Analysis, which was developed under a previous version of DOE-STD-3009. WRPS is reviewing options for accomplishing this challenging task.

REDOX: A resident inspector observed a contractor critique and follow-on discussion of whether a criticality control violation occurred from last week's discovery of a drip tray not meeting geometry or drainage requirements for fissile material collection (see 6/23/23 report). During these meetings, contractor criticality safety engineers explained that nondestructive assay data on the leaking process line made criticality an incredible scenario. Given this evaluation, DOE and contractor management questioned the rationale for the criticality controls. Based on outstanding questions with the implementation of the criticality program, contractor management affirmed that a management concern exists, and are continuing their assessment of the event.