

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

November 17, 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 November 17, 2023

DNFSB Staff Activity: Q. Boney, R. Csillag, Z. Demeke, and E. McCullough were onsite to review WTCC's maintenance program and field performance of maintenance activities. The team noted that their review activities were well supported by both DOE and WTCC. B. Sharpless was onsite to complete periodic training and augment resident inspector coverage.

Hanford Site: The DOE Chief of Nuclear Safety (CNS) and her technical team met onsite with contractor and DOE personnel to discuss ongoing high priority projects (see 10/6/2023 report). The resident inspectors observed sessions related to the movable facility boundary between the Waste Encapsulation and Storage Facility and the Capsule Storage Area, the path forward for the High-Level Waste (HLW) facility Safety Design Strategy, and the path forward for the Solids Waste Operations Complex (SWOC) Documented Safety Analysis development. A primary focus of the SWOC discussion was the behavior of waste drums on wooden pallets during a fuel pool fire. This raised questions concerning technical information that underpins the current SWOC safety basis, which relies on limited test data to conclude that drum stacks will not tumble over as wooden pallets burn. CNS also focused on applying the principles of DOE-STD-1189-2016, *Integration of Safety into the Design Process*, to the HLW project.

REDOX: During testing of the REDOX facility's new confinement ventilation system, a radiological control technician encountered anomalous radiation readings. Additional surveys determined that the source of the unexpected radiation was the prefilter of the exhauster. The area was secured and correctly posted. The contractor's critique determined that radiological controls had not been specified for the initial activation of the exhauster system. As a result, workers performing testing were not operating under a radiological work permit or in a posted area. Some participants acknowledged that a similar initial spike in radiation occurred at B Plant when installing new confinement ventilation systems, but this information was not available to the construction work planners. Two associated work packages have been suspended pending further review of the event's causes and development of effective controls for the radiation emitted by the contamination held in the exhauster prefilters.

Waste Encapsulation and Storage Facility (WESF): A resident inspector observed facility personnel perform activities to remove the last of the five pipe stubs in the facility's G Hot Cell (see 11/3/2023 report). One pipe stub was known to previously contain nitric acid. The pre-job brief was thorough, and personnel were engaged, asking relevant questions regarding nitric acid hazard controls and the sequence of work instruction activities. Based on the questions, the field work supervisor (FWS) determined a hot tap would be required to vent nitric acid vapors while working at the high point of the nitric acid pipe, which would cause a procedure change. However, based on industrial health (IH) data collected while draining the pipe and neutralizing the acid, the team determined that precautions other than IH monitoring and response for acid vapor during performance of high point work were unnecessary and will proceed as originally planned in the procedure when work resumes next week.