

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

September 21, 2018

TO: Christopher J. Roscetti, Technical Director
FROM: Matthew Duncan and Dibesh Shrestha (acting), Resident Inspectors
SUBJECT: Oak Ridge Activity Report for Week Ending September 21, 2018

DNFSB Staff Activity: D. Shrestha visited Oak Ridge to support the resident inspector office and accompany Board member J. Roberson on her visit to Oak Ridge.

Board Member Visit: On September 18 and 19, Board member Roberson and the resident inspectors met with federal and contractor personnel at Y-12 and Oak Ridge National Laboratory to discuss numerous topics, including: (1) deactivation and decommissioning activities across the Oak Ridge Reservation, (2) hazards and challenges associated with current and future work at the Transuranic Waste Processing Center, (3) actions to address the discovery of unanalyzed materials stored in the Highly Enriched Uranium Materials Facility, (4) response to the discoveries of unexpected accumulations of uranium in Building 9212, (5) the extended life program safety strategy for Buildings 9204-2E and 9215, (6) federal staffing for technical positions at Y-12 and Pantex, and (7) some Pantex-specific topics. They also walked down the Transuranic Waste Processing Center, Building 2026, and Building 9204-2E.

Building 9212: Use of the intermediate storage tanks that support special processing precipitation operations had been suspended pending corrective actions from an incident where low concentration uranium solution had leaked from a tank sight glass and an overflowing safe bottle (see 8/31/18 report). Last week, production operations approved resumption. That day, while transferring solution to the intermediate storage tanks, operators noticed liquid overflowing from the same safe bottle. They immediately stopped the transfer and followed the proper actions for an abnormal condition involving fissile material. Approximately eleven liters of solution had spilled onto the floor. Production operations again suspended operations involving the storage tanks. It appears that the receipt tanks did not have enough free capacity for the amount of solution planned to be transferred. Engineering and production operations personnel are evaluating procedure and equipment modifications to prevent future spills.

Uranium Disposition Project: The Safety Evaluation Report documenting the Department of Energy Oak Ridge Office of Environmental Management's technical review and conditional approval of the Preliminary Documented Safety Analysis for the Building 2026 Initial Processing Campaign was submitted on August 28, 2018. The initial processing campaign will dissolve uranium material in the existing hot cells in Building 2026. The dissolved material will be down-blended, neutralized, and solidified for disposition. There were three conditions of approval in the Safety Evaluation Report: (1) completion of the final direct dose calculation that supports the canister and portal design and construction, (2) inclusion of continuous alarm instrumentation for the hot cell bank differential pressures in the design of the K-2 confinement ventilation system, and (3) revision of the safety basis to incorporate additional shielding calculations that validate that the canister carrier's existing design can meet its functional requirements. DOE determined the second condition of approval requires a revised and approved Preliminary Documented Safety Analysis prior to procurement while the other two related to shielding design can be resolved in the Documented Safety Analysis.