

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

November 20, 2020

TO: Christopher J. Roscetti, Technical Director
FROM: Matthew Duncan and Brandon Weathers, Resident Inspectors
SUBJECT: Oak Ridge Activity Report for Week Ending November 20, 2020

Transuranic Waste Processing Center (TWPC): North Wind Solutions, LLC (North Wind) personnel continued cleanup and recovery activities following the fire and sprinkler activation during a smoke test in a glovebox line (see 10/30/20 report). After restoring the Process Building fire suppression system, they were able to exit a limiting condition of operation that required performing fire patrols every 90 minutes. They decontaminated portions of the facility and reduced the area that had to be posted as a high contamination area. North Wind plans to perform additional analysis of the smoke generating material at an external testing laboratory in an effort to identify the cause of the fire.

North Wind reported a performance degradation of a safety significant design feature after an electric powered truck inadvertently contacted and pulled a vehicle impact barrier out of position by one foot. The impact did not damage the barrier and the contractor corrected the problem.

The DOE Oak Ridge Office of Environmental Management issued a safety evaluation report approving the preliminary documented safety analysis (PDSA) for the TWPC oxidation campaign (see 4/22/11 report). The oxidation campaign encompasses the receipt, handling, processing, and repackaging of plutonium metals from the Solid Waste Storage Area-5 of the Oak Ridge Reservation. For this campaign, North Wind installed a new process enclosure and glovebox with two separate workstations. In the first workstation, personnel unpack the plutonium metal and load it into a disposable furnace vessel. They then transfer the furnace vessel to the second workstation where the plutonium metal undergoes a controlled oxidation process for several hours in a furnace. The furnace vessel containing the stabilized plutonium oxide is then packaged into a pipe overpack container. Ultimately, North Wind will ship the oxide to the Waste Isolation Pilot Plant for permanent disposal. The PDSA credits four safety class and nine safety significant systems, structures, and components. Additionally, ten specific administrative controls were identified to protect initial conditions and support risk reduction of the design basis accidents. DOE had one condition of approval that requires North Wind to add additional information in a future documented safety analysis revision that incorporates information regarding applicability of certain nuclear safety design criteria in the design basis.

Highly Enriched Uranium Materials Facility (HEUMF): Last Friday, fire department personnel were conducting four-year fire damper inspections within the facility. The fire dampers are design features credited in the HEUMF safety basis. The inspection involved verifying that the dampers close as designed. When the inspector removed a fusible link to close one of the dampers, it did not fully close. As a result, this fire damper was inoperable. The inspection team and the building manager did not immediately notify the shift manager of the failure and continued inspecting other dampers. The shift manager became aware of the failed inspection the next day. CNS reported this event as a performance degradation of a safety significant design feature. At the critique meeting, CNS developed corrective actions to address the lack of timely notification to the shift manager and to investigate the damaged damper.