

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

November 5, 2021

TO: Christopher J. Roscetti, Technical Director
FROM: Matthew Duncan and Brandon Weathers, Resident Inspectors
SUBJECT: Oak Ridge Activity Report for Week Ending November 5, 2021

DNFSB Staff Activity: Members of the technical staff had another teleconference with NPO personnel to discuss NPO-specific results of a complex-wide DOE oversight review (see 10/9/20 and 8/27/21 reports).

Building 9204-2E: CNS updated the ORPS report for the recent chip fire (see 10/1/21 and 10/15/21 reports) to note that the safety data sheet for vertrel indicated that combustion products may present health hazards but that there were no indications of the presence of these combustion products during or after the event.

Two weeks ago, a resident inspector questioned whether the response to the fire violated a nuclear criticality safety requirement. The criticality safety evaluation has a control that flows down to the operating procedure that limits the volume of vertrel to less than one liter within the chip consolidation process boundary. An unlimited amount of vertrel is allowed in the chip dollies. This week, CNS determined that since operators extinguished the fire using a container containing more than one liter of vertrel, this was a nuclear criticality safety infraction. The causal analysis for the chip fire continues.

Transuranic Waste Processing Center: A resident inspector met with personnel from OREM and North Wind Solutions, LLC to discuss the transuranic waste inventory at the facility. The discussion focused on assumptions about the waste population that are used in the safety basis and how personnel would recognize potential adverse changes in the distribution of the material-at-risk. The safety basis assumptions are primarily based on a waste population resulting from an evaluation performed in 2015. The resident inspector also discussed updated portions of DOE Standard 5506 pertaining to the bounding material-at-risk and whether there are plans to reevaluate the material-at-risk statistics for the Transuranic Waste Processing Center. The resident inspector requested additional Oak Ridge transuranic waste inventory data to evaluate following the meeting.

Building 9212: Building 9212 transition strategy personnel continue to make progress on completing the deactivation and isolation of an out-of-service chip burner and calciner system. This equipment was part of a nuclear criticality safety deficiency in 2019 due to the lack of an effective or suspended criticality safety evaluation (see 10/25/19 and 10/9/20 reports). This equipment was connected to an active system at the time that CNS identified the nuclear criticality safety issue. Since then, CNS has cleaned out some holdup material and removed a chute that connected the out-of-service portion to the neighboring active system. CNS recently isolated various piping connections to the out-of-service equipment and plans to isolate the HVAC and electrical systems. CNS plans to perform a second material cleanout phase that will focus on the calciner. A resident inspector walked down the system this week with an NPO facility representative to evaluate the state of the equipment. There were no issues associated with the recent isolation work.