DEFENSE NUCLEAR FACILITIES SAFETY BOARD

June 28, 2018

TO: C. Roscetti, Technical Director
FROM: D. Shrestha and R. Quirk, Acting Resident Inspectors
SUBJECT: Oak Ridge Activity Report for Week Ending June 29, 2018

Building 9212 Casting: Casting operations were paused since late March 2018 due to the discovery of unexpected uranium accumulation (see 3/30/18 report). CNS personnel previously resumed casting operations in the west line (see 6/15/18 report). CNS personnel resumed casting operations in the east line this week on June 26, 2018. Prior to resuming the east line casting operations, a hydraulic pressure switch was installed and the criticality safety evaluation was revised. The current east line casting operations plan is to perform 16 castings and then perform holdup cleanout later this week. Additionally, CNS personnel finished 16 casting operations at the west line and cleaned out the holdup area.

Building 9212 Skull Burner: CNS performed an annual operational review on skull burner operations in the east wing on June 14, 2018. An east line skull burner pot was identified as not meeting the requirements of the criticality safety evaluation (CSE). The CSE credits the holes in the skull burner pot with limiting the depth of water during abnormal conditions. The skull burner pot found on the east line had holes halfway up the skull burner pot; this is no longer allowed by the CSE. CNS held a fact finding on June 21, 2018; subsequently, the non-compliant skull burner pot was broken and disposed. CNS issued a non-compliance report as a result of this event.

Building 9995/Criticality Accident Alarm System (CAAS): CNS submitted a document change notice (DCN) for the safety analysis for Building 9995 that would allow removal of the standing order and resumption of fissile material activities in the affected area (see 5/18/18 report). The DCN clarifies which areas within Building 9995 require overlapping CAAS coverage. The changes establish that CAAS coverage is only required for areas where an inadvertent nuclear criticality has been evaluated in the safety analysis. A criticality is precluded in the rest of the facility via inventory limit.

Transuranic (TRU) Waste Processing Center (TWPC): The acting Resident Inspector observed workers from the Central Characterization Program's mobile loading team loading a 14-pack of TRU waste drums into a TRUPACT-II waste package. The waste stream contains significant quantities of radium; this results in the accumulation of radon-progeny isotopes on the external surfaces of the drums (see 6/15/18 report). The contamination levels are greater than that allowed by the Waste Isolation Pilot Plant (WIPP) Waste Acceptance Criteria (WAC). A contractor manager reported that they had wiped the contamination off the drums the previous day such that they met the WIPP WAC. This manager expressed concern regarding the dose the workers received so they could comply with the WIPP WAC, especially since decontamination will likely be required for the other waste drums from this waste stream. DOE personnel noted that the contamination will accumulate again and may exceed the WIPP WAC by the time the drums are removed from the TRUPACT-II at WIPP. TWPC personnel are evaluating the use of carbon cap drum filters on top of the current drum vents to capture radon progeny.