

## DEFENSE NUCLEAR FACILITIES SAFETY BOARD

May 18, 2018

TO: Steven A. Stokes, Technical Director  
FROM: D. Shrestha and B. Weathers, Acting Resident Inspectors  
SUBJECT: Oak Ridge Activity Report for Week Ending May 18, 2018

**Building 9995/Criticality Accident Alarm System (CAAS):** The Building 9995 Technical Safety Requirements (TSR) require that two CAAS detector stations provide overlapping coverage of areas within Building 9995 where fissile material activities are performed. One of the required CAAS detector stations is located in Building 9995, and the second CAAS detector station is located in an adjacent facility, Building 9212. Each detector station has two radiation detectors. Both radiation detectors in a CAAS detector station must receive a high-radiation signal to annunciate the alarm. Overlapping coverage from two CAAS detector stations increases the reliability of the system and provides additional conservatism to detection of criticality events. CNS personnel discovered that the coverage area of the CAAS detector station located in Building 9212 does not extend to a portion of Building 9995 where fissile material activities are performed. Based on this discovery, the CAAS system did not meet all of the Building 9995 TSR requirements to be considered operable. On May 2, CNS personnel entered the appropriate limiting condition of operation (LCO) action. On May 15, CNS personnel implemented the plan for exiting the LCO and restored the Building 9995 CAAS to an operable status. A standing order has been issued to restrict fissile material activities in the affected area.

**Highly Enriched Uranium Materials Facility (HEUMF):** CNS made a positive unreviewed safety question (USQ) determination for the potential inadequacy in the safety analysis (PISA) associated with one of the previously identified groups of unanalyzed material stored in HEUMF (4/20/18 report). This group of unanalyzed material has the potential to impact the safety functions of the Rackable Can Storage Boxes (RCSB) and is a material form that has not been analyzed for storage in RCSBs. The material form has the potential to expand above the BoroBond neutron poison in the RCSB. CNS is revising the NPO approved justification for continued operation (JCO) associated with the unanalyzed ignitable material group to also include the pyrophoric material group and the expandable material group as a result of the positive USQ determinations (5/4/18 report).

**Transuranic Waste Processing Center (TWPC):** On Thursday May 10, TWPC operators discovered rusted lids on 55-gallon drums containing transuranic waste (TRU) that are stored onsite in Sealand containers. The TWPC operators were removing drums from the Sealand containers to build TRUPACT shipments. These drums had lids that were rusted to a degree beyond what the operators routinely encounter, which raised vent integrity concerns. The operators did not find any pooled water in the Sealand containers, but they have observed condensation in Sealand containers in the past. The rust line on the drums was above the drum vents, which may indicate that the water causing the rust could have potentially submerged the drum vents. TWPC personnel conferred with the drum vent manufacturers and realized they had not analyzed the potential for the performance of these vents to degrade after water submersion. A nonconformance report has been filed, and an extent of condition will be evaluated. Thirteen drums were initially identified as potentially compromised; TWPC operators will install drum slings on those drums, overpack them, and then vent them in the Box Breakdown Area.