

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

August 6, 2021

TO: Christopher J. Roscetti, Technical Director
FROM: Matthew Duncan and Brandon Weathers, Resident Inspectors
SUBJECT: Oak Ridge Activity Report for Week Ending August 6, 2021

DNFSB Staff Activity: J. Abrefah, D. Shrestha, and S. Thangavelu traveled to Y-12 to conduct a review of reactive material hazards (see 2/5/21 report).

Building 9212: While observing maintenance on the denitrator last week, a resident inspector noted numerous areas of liquid on the floor of B-1 Wing (see 7/30/21 report). This week, the resident inspector performed a walkdown of four elevations of B-1 Wing with a NPO facility representative. They noted several sites of liquid accumulation throughout the wing. The process leaks had collection trays beneath them and none of the trays were overflowing. Condensation had pooled in some areas. CNS maintains the top elevation of the wing as a hard hat required area due to small amounts of cement falling from the ceiling. Building 9212 operations personnel recently requested that a structural engineer evaluate the area due to larger pieces of concrete falling (golf ball size). The structural engineer noted that the spalled concrete was an observable increase in degradation from the most recent 5-year surveillance that was conducted in 2018. He found that the roof planks appeared intact and currently maintain their integrity, but that spalling and degradation will continue. He recommended that the ceiling be reassessed in 2022 (prior to the next 5-year surveillance) and that structural engineering personnel be notified of changing conditions related to spalling and water leakage.

Highly Enriched Uranium Materials Facility (HEUMF): The secondary confinement system for HEUMF is safety significant. On Sunday, the system actuated due to a temporary loss of power. However, a door release device did not function properly and resulted in a roll-up door remaining open when it was required to be closed. The on-call shift manager reported to the facility, discovered the door was open, entered the applicable limiting condition for operation that required confirming the operability of the fire protection systems, and determined the situation was reportable as a performance degradation of a safety system when required to be operable. On Monday, HEUMF personnel restored operability and performed a function test that is normally required to be performed biennially. The event investigation and critique determined the cause was an incorrectly routed cable due to insufficiently detailed work instructions. CNS plans to create field guides, update work packages, and evaluate post maintenance test criteria.

Nuclear Criticality Safety: Nuclear criticality safety personnel proactively requested that several dozen items that were under administrative control be relocated from an area of the Building 9212 basement that was below the flooding elevation. Building 9212 personnel promptly moved the items, some of which required support from riggers. CNS originally placed the items under administrative control during earlier walkdowns that were focused on identifying items that could not be confirmed to be non-fissile (see 5/21/21 report).

Utilities: Y-12's nitrogen supply malfunctioned, introducing oxygen to gloveboxes in a non-nuclear facility. There were no reported issues in Building 9204-2E, where nitrogen is used to inert some gloveboxes.