

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

December 8, 2023

TO: Katherine R. Herrera, Acting Technical Director
FROM: Frank Harshman and Clinton Jones, Resident Inspectors
SUBJECT: Oak Ridge Activity Report for Week Ending December 8, 2023

Staff Activities: F. Sutherland, K. Heffner, Z. Demeke, R. Eul, S. Seprish, and S. Abdi traveled to Y-12 as part of a complex-wide aging management implementation program review. The primary objective of this review is to evaluate Y-12's implementation of aging management programs for safety systems, design features, and supporting infrastructure. The resident inspectors supported the staff for the duration of the review. The review team met with CNS and NPO personnel to discuss several aspects of the different programs used to assess and manage the overall health of systems and facilities at Y-12. The staff conducted walkdowns of the wet vacuum system in Building 9212, criticality accident alarm systems (CAAS) and utility area in Building 9204-2E, and the newly installed roof on Building 9215. During the walkdowns, the staff had detailed discussions on specific systems with subject matter experts. In addition to the CNS led walkdowns, the resident inspectors led separate walkdowns with staff members in Building 9215 and Building 9204-2E to allow staff to gain familiarization with the facilities in preparation for a separate upcoming review.

Building 9212: During the repair of the large sinkhole that formed between Building 9212 and Building 9215 (see 05/23/2023 report), CNS discovered that underground cables powering the facility would need to be replaced. The replacement will result in half of the facility losing power for an extended period, including portions of the building's CAAS, requiring entry into a limiting condition for operation (LCO). CNS expects the length of repair to exceed the action time required by the LCO to restore the CAAS, which would result in a Technical Safety Requirement (TSR) violation if not addressed. To prevent this, CNS plans to install a temporary modification to power the CAAS from building power unaffected by the outage. CNS plans to conduct the repair on the underground cables during the upcoming spring outage.

Building 9204-2E: CNS completed the installation of a roof over a cage used to store fissile material on the production floor of the building. The roof replaced a temporary cover that was installed in 2018. The roof is necessary to prevent liquid from the building's air conditioning system from leaching through the concrete on the floor above and falling onto the material contained in the cage, which could result in a nuclear criticality concern.

Building 9995: CNS held an event investigation for a contamination event in the plant laboratory. A trainee, under the supervision of a qualified laboratory technician, was splitting a depleted uranium metal sample in preparation for a laboratory test. A piece of metal snapped off and could not be found. The trainee had concerns that the piece of metal may have contaminated them. A radiological control technician (RCT) performed a thorough handheld scan of the trainee. The RCT did not find any contamination on the trainee. CNS sent the trainee to occupational health services (OHS) over concerns that she had possibly swallowed the piece of material. OHS completed further surveys, including saliva sampling, which provided no indication of contamination. CNS personnel proposed several corrective actions during the event investigation, such as a requirement to wear a face shield during this evolution.