DEFENSE NUCLEAR FACILITIES SAFETY BOARD

February 14, 2025

TO: Technical Director
FROM: Oak Ridge Resident Inspectors
SUBJECT: Oak Ridge Activity Report for Week Ending February 14, 2025

Building 9212: CNS previously entered the potential inadequacy of the safety analysis (PISA) evaluation process for a wet vacuum system (WVS) trap failing a technical safety requirements (TSR) surveillance. CNS determined the surveillance to be unsatisfactory when an isolation valve failed to remain closed after liquid was drained from the trap and opened without the operators pushing the required reset hand switch (see 1/31/2025 report). Three failures of the WVS trap surveillance have occurred over the past 4.5 years. Multiple failures of the components bring into question the adequacy of the surveillance frequency for all WVS isolation traps. CNS preforms the surveillance of WVS isolation traps monthly. CNS is currently evaluating the reliability of the WVS equipment but does not have sufficient information to determine whether these failures indicate a change in reliability. Therefore, CNS determined there is a potential increased failure rate of the WVS and a PISA exists. CNS instituted two actions to ensure safety because of the declared PISA. First, CNS will replace the reset hand switch and associated relay of the failed WVS trap. Second, CNS will increase the surveillance frequency for all WVS traps to weekly once the system is repaired. Once the WVS trap is verified to function properly, CNS will authorize the resumption of operations supported by that portion of the WVS trap.

Building 9204-2E: CNS completed the post maintenance testing on the concrete bunker containing the new criticality accident alarm system (CAAS), also referred to as CAAS 3S, after sealing the main power conduits that had water intrusion issues (see 11/22/2024 report). After CNS restored power to the CAAS 3S bunker, the system engineer was not able to successfully bring the main computer system back online. The system engineer and electricians replaced the defective computer with a spare that was onsite. The following week, CNS completed additional testing to ensure the system functioned as it did before the water intrusion and subsequent power isolation to the bunker. During the testing, the CNS system engineer observed abnormal operation of the CAAS 3S and the system is now in a "Major Fault" state. CNS requested assistance from the manufacturer of the system to troubleshoot the problems with the processing cabinet. The legacy CAAS is still operable, providing complete and overlapping coverage for the facility.

Highly Enriched Uranium Materials Facility (HEUMF): In September 2024, the DNFSB Oak Ridge cognizant engineer identified three Rackable Can Storage Boxes (RCSBs) with castable concrete densities exceeding the maximum allowable value as specified in the HEUMF TSRs (see 9/27/2024 report). In response, CNS determined a PISA existed, further evaluated that the situation did not constitute a positive Unreviewed Safety Question determination, and conducted an evaluation of the safety of the situation. CNS concluded that the situation did not increase the likelihood of a criticality accident. Last week, CNS removed the contents from the non-compliant RCSBs, identified the containers as non-conforming, and removed them from the facility to prevent future use.