

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

March 29, 2024

TO: Timothy J. Dwyer, Technical Director
FROM: Frank Harshman and Clinton Jones, Resident Inspectors
SUBJECT: Oak Ridge Activity Report for Week Ending March 29, 2024

Highly Enriched Uranium Materials Facility (HEUMF): The resident inspector (RI) attended an event investigation for two separate events involving a high mast powered industrial truck (HMPIT) contacting a concrete support for the metal storage racks. Two different sets of operators were involved, and the two occurrences happened on consecutive workdays. This is repeat of a previous event (see 6/30/23 report). The HMPIT outriggers sustained damaged from the impact. A structural engineer evaluated the impacted rack supports from both events and did not note any items of concern. HMPITs use a wire guidance system embedded in the floor to control the travel path when between storage racks to prevent impact into the racks. The operators of the HMPITs did not engage the wire guidance system as required by the CNS procedure in both events. CNS discussed several corrective actions during the event investigation. CNS is formally retraining operators and spotters through a performance documentation checklist (PDC) with the addition of human performance tools in the process. CNS also intends to enable “creep mode” in the HMPITs. This mode significantly reduces the speed of the HMPITs when the guide wire system is not engaged, and the system detects one of the guidance wires embedded in the floor of the building. CNS has paused HMPIT operations within HEUMF until “creep mode” is verified enabled and operators have successfully completed their PDC.

Conduct of Operations: CNS filed an occurrence report due to the degradation of a safety system after a system engineer (SE) discovered that part of the criticality accident alarm system (CAAS) did not have power to required components. Maintenance personnel were performing the monthly test of a backup diesel generator for Building 9204-2 when the operations center (OC) received an unexpected alarm showing a component that enables CAAS annunciation had failed. The OC notified the SE of the failure but did not inform the shift manager (SM) of either Building 9204-2 or Building 9204-2E. The CAAS annunciation area in Building 9204-2 is established as an extension of the Building 9204-2E CAAS system due to proximity of the fissile work performed in Building 9204-2E and is covered by the Building 9204-2E safety basis. The SE, who was assisted by the emergency notification system (ENS) electricians, went to investigate the issue, and encountered the Building 9204-2 SM in the area. The SE asked the SM to call the OC and request a voice count be performed over the ENS but did not give detail other than they were investigating an alarm. Upon further inspection of ENS components, the SE discovered an uninterruptable power supply (UPS) faulted with an alarm showing on the panel. Instead of stopping work based on the discovery of an unanticipated condition and notifying the SM, the SE cleared the fault on the UPS which restored power to the annunciation components. When the Building 9204-2E SM was finally notified of the issues with the ENS annunciation, details such as the system being without power for approximately 30 minutes were not disclosed. This led the Building 9204-2E SM to believe the system was operable and he logged it as such, not entering the applicable limiting condition for operation due to a partial loss of annunciation. The RI attended the critique held for the issue and asked how CNS planned to document the conduct of operations error for future trending purposes since the corrective actions to perform briefings and evaluations do not capture the root of the problem.