

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

August 4, 2023

TO: Timothy J. Dwyer, Acting Technical Director
FROM: Clinton Jones, Resident Inspector
SUBJECT: Oak Ridge Activity Report for Week Ending August 4, 2023

Staff Activity: F. Harshman was out of the office this week.

Criticality Safety: The resident inspector performed an independent walkthrough of the MAA in Building 9215 to assess compliance with NCS controls as a follow-up of the nuclear criticality safety (NCS) concerns previously identified by CNS (see 07/14/23 report). The resident inspector discovered a fissile material workstation that was not in compliance with the NCS posting due to the area containing maintenance items that were not part of a fissile system. The resident inspector notified the building criticality safety officer (CSO), and he confirmed the items did not belong on the workstation. The CSO then contacted a supervisor and had the non-compliant items removed. The resident inspector also identified a piece of flanged pipe in the basement that was laying on the ground next to the out of service mop water collection area. The resident inspector notified the CSO and the CSO established a 15-foot administrative boundary per the abnormal operating procedure for an abnormal condition involving fissile material and notified the shift manager. A NCS engineer and production supervisor responded to the backoff, looked at the pipe, and could not determine if it was used in a fissile system with potential uranium holdup. This NCS concern is still under review as the system from which the piping was removed could not be identified. The resident inspector reported two other concerns to the shift manager: an electrical safety concern which was a repeat from the June 13th walkdown that had not been addressed and a metal cabinet containing both oxidizers and potentially flammable chemicals.

CNS withdrew a recent submittal of a document change notice to the Building 9204-2E technical safety requirements for the new criticality accident alarm system (CAAS) sent to NPO. The submittal contained statements stating CAAS detection coverage was not required in a portion of the facility in which a fissile material activity was conducted since there was a trivial risk of an inadvertent nuclear criticality in that area, referencing the criticality safety evaluation (CSE) as the basis for the statement. The CSE for the area of the facility required an update to include an analysis for the portion of the facility that was deemed a trivial risk. The configuration management process requires that reference documents are updated prior to submittal of a document change notice. CNS plans to brief personnel involved in the change management process and conduct a causal evaluation. The resident inspectors will review the causal analysis and the follow-up actions.

Building 9212: CNS completed air gapping of the hydrogen supply to the oxide conversion facility (OCF) as part of the plan to place the facility in cold standby (see 06/16/23 report). The hydrogen supply was terminated at a sufficient distance from the facility to eliminate the industrial hazard that hydrogen posed to it. CNS identified hydrogen and hydrogen fluoride (HF) gas as the two major hazards required to be removed for long term shutdown. CNS previously removed the HF cylinder and is in the process of completing three additional purges of the system to reduce the residual HF levels below the required limits.