

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

January 19, 2024

TO: Katherine R. Herrera, Acting Technical Director
FROM: Frank Harshman and Clinton Jones, Resident Inspectors
SUBJECT: Oak Ridge Activity Report for Week Ending January 19, 2024

Site Status: Y-12 was closed Tuesday through Thursday to all but essential personnel due to winter weather.

Building 9212: CNS entered the potential nuclear criticality safety issue (PNI) process when a question regarding the analysis of ductwork in a criticality safety evaluation (CSE) was raised. CNS previously removed portions of B-1 wing ductwork via a formal change process, with a section of ducting remaining in place and isolated from all process inputs. CNS installed grates on the remaining openings to provide room exhaust. When the CSE was revised, all mention of the ductwork was removed from the CSE even though portions of the system physically remained. As part of the PNI, the nuclear criticality safety engineer (NCSE) evaluated the field condition of the ductwork to determine if this issue posed a nuclear criticality safety (NCS) concern or if operational restrictions were warranted. CNS previously performed a nondestructive analysis scan after alteration of the ductwork and results showed that the ducting contains low mass of enriched uranium. The NCSE also noted that an installed grate on the bottom facing portion of the ducting would allow material to freely pass-through and prevent accumulation. The NCSE concluded that this section of duct poses no NCS concern due to the low mass and inability to retain material. CNS intends to revise the CSE to incorporate discussion of this ductwork, but no additional controls will be added. The resident inspector (RI) discussed the issue with the acting operations manager, CNS NCSE, and NPO NCSE with no issues noted.

Conduct of Operations: The RI observed the recently performed criticality accident alarm system (CAAS) detector station changeout in Building 9204-2E. The changeout fulfills the requirement to calibrate CAAS detectors at least every thirteen months. CNS exchanged the installed detectors with recently calibrated units to enable production operations and provide continuous detector coverage. During discussions with the shift manager on the day of the surveillance, the RI noted a good conduct of operations practice. The shift manager performed a visual inspection of the replacement detectors as they were brought into the facility and noticed the wiring to one of the detector tubes was not encapsulated by heat shrink tubing like the rest of the units. The shift manager required a spare unit that was sent with the batch of detectors be used in place of the detector with the exposed wiring.

CNS has also issued a standing order to establish formal communication between maintenance, production operations, and facility operations management personnel prior to beginning post maintenance activities following system or equipment repairs. The standing order requires the insertion of signature-required hold points into high priority and preventative maintenance work packages prior to performing post maintenance testing activities in facilities with shift manager coverage. Due to recent events, like the filling of the machine coolant system in Building 9215 while it was covered by a lockout/tagout restriction (see 11/3/2023 report), the standing order attempts to establish a more rigorous level of communication and awareness between the groups.