

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

February 9, 2024

TO: Katherine R. Herrera, Acting Technical Director
FROM: Frank Harshman and Clinton Jones, Resident Inspectors
SUBJECT: Oak Ridge Activity Report for Week Ending February 9, 2024

Building 9204-2E: CNS plans to remove a temporary modification for the power indicating lights on the relay cabinets in the legacy criticality accident alarm system (CAAS). The indicating lights were installed in June of 2022 as a corrective action after CNS discovered that a surveillance requirement was not met for over a week (see 1/21/2022 report). Subsequently, one of the incandescent lamps short circuited the CAAS horn power feed to the facility even after an engineering review suggested incandescent lights would be less prone to failure than light emitting diode (LED) indicators (see 06/24/2022 report). The resident inspector (RI) reviewed the revised engineering instruction that details the installation of new LED indicators with a fuse placed in series to the LED. This change will ensure that failure of one of the indicating LEDs will not trip the supply breaker to the CAAS annunciation. The change to the relay cabinet in Building 9204-2E will be functional until the equipment is abandoned upon startup of the new CAAS system that is undergoing installation testing. The change to the relay cabinet in Building 9204-2 will remain in place as the annunciation system in that building was not changed as part of the Building 9204-2E CAAS replacement project.

CNS conducted an event investigation on the third occurrence of exceeding the permissible amount of combustible liquid in Building 9204-2E in a five-month period. As a result of the second occurrence, the operations manager instituted a complete inventory of combustible liquids in the facility. This inventory resulted in the third occurrence which was the discovery of a significant amount of brine, a solution used in some of the HVAC units that contains methanol in less than a 28 percent volume concentration, that was stored in 55 gallon drums. The fire hazard analysis for the facility recognizes the use of brine in the HVAC units, and states that it is not a significant fire hazard. This is under the assumption that the brine is contained within the piping system, and not stored in a drum. When stored in a drum, a new concern exists that the methanol in the mixture could separate and present a new hazard. As a preventative measure, the operations manager is instituting a new weekly liquid combustible inventory management that will be documented in the shift manager logbook.

Qualification Board: A RI attended the final qualification oral board for a shift manager candidate. The facility's acting operations manager chaired the board. In previous boards observed by the RI's, weaknesses in the conduct of these boards in areas such as question selection, asking leading questions, designation of make-or-break questions, and general conduct of the boards have been observed (see 12/23/22, 03/24/23 reports). The questions for this board had been preselected and discussed in a preboard meeting and covered a broad range of topics. In the resident inspector's opinion, there was one question that lacked complexity. Overall, the RI concluded that the conduct of the board was adequate and conducted in accordance with the CNS qualification board procedure. The RI did not observe other weaknesses in the conduct of the board, such as leading questions, that had been observed in previous boards.