

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

October 27, 2023

TO: Timothy J. Dwyer, Acting Technical Director
FROM: Clinton Jones, Resident Inspector
SUBJECT: Oak Ridge Activity Report for Week Ending October 27, 2023

Building 9215: In preparation for the fall steam outage in Building 9215, the shift manager directed the utility operator to shut down all supply fans in the 9215 complex, with the exception of two. The areas where the two fans were not shut down have a history of heating quickly if the steam supplied to steam coils is not isolated prior to shutting the fans down. One of these areas was the cause of an activated sprinkler head in a safety significant wet pipe system during an extreme freeze event last year (see 12/30/2022 report). Approximately one hour after the supply fans were secured, a shift technical advisor (STA) noticed water flowing out of the building into an alleyway and heard a water motor gong annunciating. The STA notified the appropriate personnel, and the shift manager entered a limiting condition for operation for the affected wet pipe system due to the fire department valving out the system after a sprinkler head activated in one of the supply fan rooms. Upon further investigation, CNS identified the cause of the sprinkler head activation as excess heat in the supply fan area due to the steam coils. CNS issued an occurrence report based on performance degradation of a safety significant system which prevent satisfactory performance of its design function when it is required to be operable. CNS is conducting an event investigation into the issue that is currently ongoing. Cold weather preparations in the facilities started in August of this year, but in the initial review the resident inspectors noted that recommendations and lessons learned from the December 2022 freeze event investigation have not been incorporated. One of these recommendations was for CNS to revise the Seasonal Facility Planning procedure which had not been completed as of this week.

Suspect Counterfeit Items: During the receipt inspection of an order for two hundred ratchet straps placed by the Special Nuclear Material Organization, it was discovered that the bolt fastener holding the synthetic strap to the hardware did not bear manufacturer markings. The straps were not used, and an event investigation was initiated. Two more orders of ratchet straps, submitted to different suppliers, resulted in more suspect fastener bolts. The ratchet straps in question are used for both on and off-site shipments of special nuclear material. DOE guidance outlined in OES 2023-03, *Suspect/Counterfeit and Fraudulent Fasteners in Assembled Items*, explains the lack of a head-mark on a fastener indicates a suspect fastener. The guidance allows for ratchet straps with fasteners to be missing head-marks if certification data can be linked to the specific lot of bolts. Due to a lack of certification data for the bolts in the ratchet straps of the Y-12 order, they are considered suspect. DOE Order 414.1D, *Quality Assurance*, attachment 3, requires that suspect counterfeit items, when identified, be removed from service and controlled. Use of the suspect ratchet straps at Y-12 and Pantex continued for approximately 7 weeks after the suspect fasteners were identified in the initial receipt inspection until a standing order was issued and shared between the sites. In addition, the standing order was not appropriately disseminated. This left NPO without timely knowledge of the issuance. A NPO quality assurance engineer at Y-12 conducted further walkdowns of facility equipment and noted several instances of suspect fasteners being used in operations that could directly affect quality of units being assembled and stored. The resident inspectors attended the event investigation and critique of the issue and are following the corrective actions.