

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

October 28, 2022

TO: Christopher J. Roscetti, Technical Director
FROM: Frank Harshman, and Clinton Jones, Resident Inspectors
SUBJECT: Oak Ridge Activity Report for Week Ending October 28, 2022

Aging Infrastructure: CNS has continued preparatory work on a project to replace numerous fire and potable water underground pipes that will take place over the next several years. The 60-year-old cast iron pipes are a concern due to corrosion and risk of failure. The pipes were often installed under mission-critical facilities. Twenty-seven pipes have been identified as high risk by CNS and are listed as one of CNS's Top 10 Threats. These replacements will affect credited fire suppression systems in multiple buildings (see 10/16/2020 report). During the replacements, a temporary supply of firewater will be provided to each affected building via fire hose connections. The resident inspectors walked down a work area north of Building 9215 and observed construction personnel finishing the concrete slab that will support the temporary hose connection enclosure. Due to concerns associated with preventing the temporary hoses from freezing during the winter months, the transition to the temporary water supply and replacement of the underground firewater piping has been scheduled to resume in April 2023.

Building 9206: On October 21, 2022, Building 9206 had an unplanned entry into a limiting condition for operation due to the loss of the annunciation horns and lights for the criticality accident alarm system (CAAS). A planned steam outage for another facility required a cross tie between two transformers to ensure power would be maintained to the Building 9206 CAAS system since the normal power to the system would be tagged out. While performing work elsewhere onsite, a power operations crew tripped a breaker that was feeding the cross tied power source. The Operations Center (OC) received an alarm that power had been lost to the Building 9206 CAAS horns and lights for approximately six minutes. The OC then notified the shift manager of the facility who took the required actions.

Nuclear Criticality Safety: During a nuclear material transfer between Building 9204-2E and Building 9215, a material controller at the receiving facility, Building 9215, noticed the size of the containers on the transfer vehicle did not match the shipping document. The material controller took the appropriate actions per the abnormal operating procedure and backed off, establishing a 15-foot boundary. After workers notified required personnel, the boundary was collapsed and the material repackaged from the incorrect container into the required container. Approximately 3 hours after being notified, CNS management decided to pause all shipments to and from the originating facility until an investigation could be performed. During those 3 hours, one shipment was received by Building 9204-2E and another shipment was sent from Building 9204-2E where the packing and shipping issue originated. In the resident inspector's opinion, the delay in pausing further shipments was not conservative and could have caused further criticality safety problems. The operations manager in Building 9204-2E did take action to identify other potential nuclear criticality safety non-compliances by having the nuclear material control and accountability representative and a criticality safety engineer walk down the facility to visually verify 100% compliance with the criticality safety requirements as they applied to the material and packaging in question. The facility is working through the process of identifying and completing immediate corrective actions to resume shipments.