

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

June 2, 2023

TO: Katherine R. Herrera, Acting Technical Director
FROM: Frank Harshman and Clinton Jones, Resident Inspectors
SUBJECT: Oak Ridge Activity Report for Week Ending June 2, 2023

Building 9215: CNS recently approved a maintenance activity to remove an obsolete piece of equipment in a milling area of Building 9215. The removal of this piece of equipment requires guidance from several support organizations, including electrical, structural, and nuclear criticality safety (NCS) engineers, and is expected to take four to six weeks. A facility shift technical advisor questioned the scope of the work in proximity to an out-of-service pipe which resulted in additional review by NCS engineers due to the NCS pause on maintenance activities (see 5/5/2023 and 5/12/2023 reports). NCS engineers determined that the work was not in a fissile control area and maintenance resumed. The supervisor did not request work start for the day as required by the conduct of operations procedure. This was discovered the following day by the on-duty shift manager. The resident inspectors expected a greater level of procedural compliance by maintenance during the initial resumption of work after the NCS pause and extensive briefings conducted by CNS.

Fire Water Supply: At Y-12, safety-related wet pipe fire suppression systems are supplied by the potable water (PW) system. The PW system is supplied by two tanks which, to maintain water quality, are periodically switched as the source of water for the system. Three weeks ago, when attempting to place the west tank out of service to perform maintenance on a pressure regulating valve, CNS encountered an unexpected pressure drop and fluctuation. Switching the tanks was not communicated to the nuclear facilities and the resultant pressure drop in the PW system caused Building 9212 to fall below the minimum pressure required by its technical safety requirements. CNS reported an occurrence for degradation of a safety system because of an unplanned entry into a limiting condition for operation (LCO).

Currently Building 9720-82 is in two separate LCOs for unrelated matters that have required action steps to verify the fire protection system is operable. Operability of this safety-significant system includes ensuring adequate supply pressure to the building's fire pumps. During a PW system tank switch this week, CNS decided to use a facility fire department connection (FDC) to provide reserve capacity to the fire suppression system in the event of PW system pressure drop. A drop in potable water pressure, like that experienced at building 9212, could require the facility to declare the fire protection system inoperable and therefore cause an immediate violation of the action statements of the other two LCOs. This would place the facility outside of its safety basis requiring the building to transition to warm standby. The resident inspectors had many concerns with this approach. The connection of a fire truck to the FDC is discussed in the fire hazard analysis to boost capacity to the building if the firefighters elected to use the installed hose connections in the building, however, there is no discussion of utilizing the fire truck as a reserve capacity. Facility management stated that this approach is meant to provide a functional fire suppression system in the event there was a fire in the facility and not an attempt to continue to call the installed fire suppression system operable. The resident inspector observed the connection of the fire truck to the FDC and walked down the hose arrangement to verify in-field conditions and observe local pressure readings during the switching of the tanks. The resident inspectors did not observe anything that would call into question the operability of the system during the switch.