

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

December 18, 2020

TO: Christopher J. Roscetti, Technical Director
FROM: Matthew Duncan and Brandon Weathers, Resident Inspectors
SUBJECT: Oak Ridge Activity Report for Week Ending December 18, 2020

Building 9215: Earlier this month, fire department personnel were notified multiple times that there was low air pressure in a non-credited dry pipe fire suppression system in Building 9215. They investigated each of these events and reset the air pressure switch. Due to the multiple low air signals, the fire department captain and battalion chief decided to take the system out of service. The fire department captain discussed the situation with a fire protection engineer and implemented drive-by fire patrols as a compensatory measure. Per the work instructions, they isolated power to the air compressor. They took the system out of service on a Friday, and fire patrols occurred over the weekend, as scheduled. On the following Monday, fire department personnel requested work start approval from the Building 9215 shift manager to return the system to service. This was the first notification that the shift manager received of the system being out of service. Fire department personnel and an electrician walked down the system and had issues locating the correct electrical isolation point for the air compressor. These were not the same fire department personnel who took the system out of service. The electrician traced the conduit from the compressor back to the isolation point and discovered that the incorrect breaker was isolated. Rather than isolating only the air compressor, the fire department personnel had inadvertently disconnected the transformer and lighting panel. The team stopped work and reported the situation to their supervision.

CNS identified several issues during the event investigation. The fire department personnel did not have the appropriate training or approval to isolate the breaker that powered the air compressor. Fire department personnel are trained in safety related work practices for non-electricians, but the voltage rating for this breaker (480 volts) requires that it be manipulated by an electrician. The electrical labeling was inadequate due to markings that were handwritten on masking tape, written on the panel door, and appeared to be outdated. The fire department personnel who took the system out of service failed to notify the Building 9215 facility management about that activity. A similar event occurred in the Highly Enriched Uranium Materials Facility when fire department personnel did not notify the shift manager that a credited fire damper failed its inspection (see 11/20/20 report). In another event, a chemical operator reset a breaker in Building 9212, but a certified electrician or electrical engineer should have evaluated the situation and have been the one to reset the breaker (see 11/13/20 report).

Building 9212: CNS recently completed a significant outage for the holden gas furnace in Building 9212 (see 12/4/20 report). The outage extended beyond the originally planned schedule due to nuclear criticality safety issues and a Y-12 welding pause (see 11/6/20 report). CNS delayed starting another project to isolate the out-of-service muffle furnace in Building 9212 so that corrective actions from the holden gas furnace outage could be implemented. The holden gas furnace outage issues highlighted the need for improvements in the interface between production and maintenance personnel and engagement of nuclear criticality safety staff in these types of activities.