

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

October 11, 2024

TO: Timothy J. Dwyer, Technical Director
FROM: Frank Harshman and Clinton Jones, Resident Inspectors
SUBJECT: Oak Ridge Activity Report for Week Ending October 11, 2024

Building 9212: A resident inspector (RI) attended an event investigation for work control issues identified during the execution of a main drain valve replacement on a wet pipe sprinkler system. Fire department personnel were required to drain the entire system in preparation for this maintenance. Although working on a non-fissile system, a nuclear criticality safety (NCS) evaluation of the work was required due to the area the system was located in. Work planners were then required to incorporate any action steps from the NCS written guidance into the work package instructions. The NCS guidance stated that a hose may be used to drain the system, which would give the option for the fire department personnel to drain with or without a hose. However, later the NCS guidance required maintenance personnel to discuss the connection of the hose with operations personnel to ensure they were not inadvertently connected to a fissile system. NCS personnel wrote this later guidance as if the hoses were to be used to control the flow of water. The work planner did not incorporate this NCS hazard control as a hold point into work order instructions. CNS has had challenges properly incorporating NCS controls into maintenance work packages in the past most notably, the event which workers drained machine coolant containing uranium particulates and sludge into an unsafe geometry (see 5/5/2023 report). The workgroup supervisor identified the conflicting NCS guidance during a workability review of the work package prior to start of work. The workgroup supervisor discussed the guidance with NCS personnel and determined that the hoses were optional use. However, neither the NCS guidance nor the work package was corrected at that time. The fire department drained the system without use of a hose allowing water to flow across the floor of a high contamination area to an outside concrete pit. The fire department refilled the system and returned the system to service after maintenance workers replaced the main drain valve. A YFO facility representative identified this issue during routine oversight activities. The RI plans to evaluate if actions resulting from this event will prevent similar events.

Building 9998: Workers were moving a cooling can from a foundry furnace using a powered puller. The operator engaged the hand controller to move the machine forward at which time another worker that was passing through the area observed a light/flash. The worker immediately alerted the operator that there was a small fire in the unit. The operator stopped the powered puller and shut the unit off by turning the key, which terminated the issue. The worker passing through the area quickly unplugged the battery disconnect. The workers notified their supervisor, who then notified the shift manager to call 911. The fire department responded and used a thermal imager to evaluate the equipment. Fire department personnel released the scene shortly after arriving as the temperature was decreasing below 100 degrees Fahrenheit with no flame or smoke observed. CNS initially filed an occurrence report for the event but later determined the event did not meet occurrence reporting criteria after reviewing the Y-12 fire protection manual's definitions of fire. Specifically, for electrical failures, an event is not considered a fire unless flaming continues after the equipment is de-energized. CNS subsequently rescinded the initial occurrence report after conclusion of the event investigation.