

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

October 15, 2021

TO: Christopher J. Roscetti, Technical Director
FROM: Matthew Duncan and Brandon Weathers, Resident Inspectors
SUBJECT: Oak Ridge Activity Report for Week Ending October 15, 2021

Building 9204-2E: In response to the recent fire in the facility, CNS fire protection engineers issued a statement to the Assembly/Disassembly Operations Director to communicate that vertrel should not be used as a fire extinguisher media (see 10/1/21 report). During the investigation, production personnel insisted that the use of vertrel only be labeled as a “potential gap” until fire protection personnel told them whether its use was appropriate or not. This week, CNS issued an ORPS report that did not mention the improper use of vertrel to extinguish the fire.

Building 9212: Last week, CNS system and structural engineers performed a surveillance on the building structure near the High Capacity Evaporator System. In performing the surveillance, personnel inspected the system for degradation of the support/hangers, bolts, and equipment spacing. They found a crack in a pipe support frame that supports part of the system. The nuclear criticality safety evaluation credits the support as a passive design feature subject to degradation in order to provide geometry and interaction control for the system. As a result of discovering the crack, personnel placed the area under administrative control and the shift manager made the appropriate notifications. Nuclear criticality safety engineers provided guidance to maintain the administrative boundary and for the system to remain on “hold” until a temporary modification or repairs are complete. The engineers who performed the surveillance also identified several items that were determined to be satisfactory but need improvement. The system engineer has created work orders to address all of the items that need improvement (e.g., replacement of rusted bolts/washers, adding an extra support, and replacing a missing U-bolt). This surveillance was performed every five years but was changed to a three-year cycle after a sight glass failure in another Building 9212 system spilled fissile solution (see 1/30/17 report). CNS has actions to investigate the failure mechanism of the pipe support frame and add additional support to this area of the system. During the event investigation, CNS questioned whether all areas of Building 9212 that should be on a three-year surveillance cycle were actually changed from the five-year surveillance cycle. CNS developed actions to confirm that all of the applicable surveillances were properly converted to a three-year cycle.

Building 9215: The resident inspectors walked down the enriched uranium work areas of the facility. Some areas that they had previously noted as having a large quantity of waste items were improved (see 7/9/21 report). For instance, CNS has dispositioned many of the items that nuclear criticality safety personnel placed under administrative control earlier this year due to uncertainty of whether they contained fissile material. However, there are several items that require additional processing and/or repackaging that have been stored in an ancillary area of the facility since at least 2017. Those items are still awaiting disposition even though a technical deviation to process some of the items was originally approved in 2017. DNFSB staff members discussed the plan to process those items during a review in 2019 (see 11/22/19 report). In the past, the resident inspectors have noted that CNS uses absorbent pads near one of the storage areas containing these items due to water dripping from the ceiling. The items near that storage area were originally wrapped/covered, but over the years that wrapping has begun to deteriorate.