

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

April 16, 2021

TO: Christopher J. Roscetti, Technical Director
FROM: Matthew Duncan and Brandon Weathers, Resident Inspectors
SUBJECT: Oak Ridge Activity Report for Week Ending April 16, 2021

Building 9212: Last Thursday, chemical operators performed a technical safety requirement surveillance to function test a safety significant vacuum trap level detection system that is a part of the wet vacuum system. The system failed the surveillance due to an isolation valve not isolating the vacuum trap. The operators notified the shift manager and isolated the vacuum trap. The shift manager entered the applicable limiting condition of operation and placed the affected wet vacuum system into warm standby mode. The system will remain isolated and inoperable until CNS troubleshoots and repairs it. The responsible manager categorized and reported the event as a performance degradation of a safety significant system per DOE Order 232.2A. Another wet vacuum system final area trap failed the same type of monthly surveillance last May (see 5/22/20 report). As a corrective action from the previous failure, CNS design engineers reviewed the isolation valve and actuation system of the wet vacuum trap but did not identify a failure mode.

Nuclear Criticality Safety: CNS conducted an event investigation and concluded that loading the carbon burner furnace above its nuclear criticality safety limit was due to a transcription error by the operator when he recorded the U-235 mass from a container batch card to the carbon burner furnace run sheet (see 4/9/21 report). The current run sheet allows one operator to record the container mass value. CNS intends to update the procedure and run sheet to reduce the possibility of having another violation by not relying on a single operator to read the batch card mass value, among other improvements being considered.

This week, CNS completed most of the legacy item focused walkdowns in the Building 9215 material access area (see 4/9/20 report). Nuclear material control and accountability personnel performed qualitative non-destructive assay scans on items, and if the item failed the scan, they placed it under administrative control and labeled it as under review. Nuclear criticality safety engineers elected to keep a 15 ft administrative boundary around four areas/items. The walkdowns in some of those four areas will occur later due to additional training requirements for entering confined spaces and the use of respirators. For all other items, they allowed the administrative boundary to be collapsed to the affected items. In their initial report, the walkdown team documented approximately 45 sets of items that will be further evaluated.

The resident inspectors and an NPO facility representative walked down the area of Building 9212 where most of the items that CNS had recently placed under nuclear criticality safety administrative control are located (see 4/2/21 report). From the conditions that the resident inspectors observed in Building 9212 and what CNS initially reported for the Building 9215 walkdowns, it appeared that the CNS walkdowns had been thorough in identifying items that require further evaluation. The resident inspectors found that multiple areas were labeled as a nuclear criticality safety infraction until the items in those areas are dispositioned under the CNS low equity material review plan. CNS had covered several items to prevent ingress of water. There were no signs of dripping condensation or active leaks during the walkdown.