

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

April 8, 2022

TO: Christopher J. Roscetti, Technical Director
FROM: Brandon Weathers, Resident Inspector
SUBJECT: Oak Ridge Activity Report for Week Ending April 8, 2022

Emergency Management: CNS performed a full-scale emergency exercise on Wednesday. The initiating event for the exercise scenario was a nuclear criticality accident. Multiple workers were within the vicinity of the criticality accident and evacuated the facility. CNS declared the situation an operational emergency further classified as a site area emergency. The resident inspector observed the exercise from the Operations Center and the Technical Support Center.

Building 9212: On Wednesday morning, personnel found that liquid had spilled in a process area. They estimated that the spill was a few liters and originated in a column that holds caustic solution with low levels of uranium. Based on the type of solution expected to be in the column, operations personnel treated it as a major spill per the applicable abnormal operating procedure. A major spill is defined as a spill that requires assistance from specialist personnel from outside Building 9212 because of the size of the spill or because the material represents an immediate safety, environmental, or health hazard regardless of the quantity. CNS is investigating the column and connected components to determine the failure mechanism. CNS placed the column out of service, cleaned up the area, and surveyed the area for indications of radiological contamination. There were no personnel contaminations or injuries reported for this event.

Highly Enriched Uranium Materials Facility: Last Thursday, a power interruption caused several air handling units to trip. This resulted in a loss of smoke detection in a service area of the secondary confinement system. Since the air handling units were not shut down by the credited solenoid valves, the shift manager declared the secondary confinement system inoperable. CNS filed an occurrence report for performance degradation of the safety significant secondary confinement system when it was required to be operable. CNS has previously filed occurrence reports for the same situation (see 3/20/20 and 5/14/21 reports) and is working on a potential safety basis change to provide greater flexibility for determining the operability of the secondary confinement system.

Nuclear Criticality Safety: In the fiscal year 2021 DOE annual metrics report for nuclear criticality safety programs, DOE graded both Oak Ridge and Y-12 as “meets expectations.” That grading was achieved for both the program health and the operational implementation categories.

In the Y-12 summary, NPO noted that the level and quality of oversight provided through CNS’s processes exceeds expectations. NPO highlighted a program health survey tool (see 5/15/2020 report) and the development and use of an integrated schedule. NPO reported that CNS has hired nuclear criticality safety staff in excess of the mission need, but attrition remains a concern. In isolation, NPO considered the staffing element of the program “adequate, but needs improvement.” CNS recently presented updated staffing metrics at the March 2022 nuclear criticality safety committee meeting. Nuclear criticality safety engineer staffing was at approximately the same level as reported at the end of fiscal year 2021. CNS is in the process of hiring several more nuclear criticality safety engineers through the remainder of fiscal year 2022.