

## DEFENSE NUCLEAR FACILITIES SAFETY BOARD

June 23, 2023

**TO:** Katherine R. Herrera, Acting Technical Director  
**FROM:** Frank Harshman and Clinton Jones, Resident Inspectors  
**SUBJECT:** Oak Ridge Activity Report for Week Ending June 23, 2023

**Criticality Safety:** CNS restarted the machine coolant system on June 9<sup>th</sup> as part of the resumption of machining operations in Building 9215. CNS management and nuclear criticality safety (NCS) personnel had completed several walk downs of the facility over the previous weeks since a maintenance issue that initiated an NCS pause (see 5/5/2023 report). The resident inspectors walked through the facility to observe both the machine coolant system in operation as well as machining operations being performed on June 13<sup>th</sup>, the first day production resumed. During the walk through of the basement area where the machine coolant settling trays are located, the resident inspectors identified a small storage area for mops and tools that contained a large amount of absorbent material, like mop heads and wipes, that could contain liquids or fissile material leading to a potential criticality issue due to its dimensions. This storage area was an area approximately two-foot square with about a 3-inch berm surrounding it. There was no NCS posting addressing the storage area or limits for criticality safety based on the items that were stacked on top of each other. Due to its location behind a radiological boundary, the resident inspectors could only see it from about 12 feet away. The resident inspectors notified the shift manager (SM) of the issue and asked if the storage area had been evaluated by NCS engineering. The SM entered the abnormal operating procedure for an abnormal condition involving fissile material and established an administrative boundary. The SM then contacted NCS engineering and was told the tools, mops, and wipes were stored in an unapproved location. With permission from the SM, the area was inspected by the NCS engineer, a criticality safety officer, a shift technical advisor, and an area supervisor. Tools that were used to clean out the machine coolant trays for inventory were found along with wipes, absorbent pads, scrapers, and similar cleaning equipment. Wipes and pads showed signs of contamination and were stacked nearly to the top of the berm. Direction was given by NCS engineering to relocate the wipes and pads to an approved fissile material handling container, remove any contamination from tooling, and place the cleaned tools outside of the berm. CNS is still evaluating the significance of this issue, but a NCS field report was issued. The resident inspectors expected a higher level of inspections and sensitivity to the machine coolant system after the recent NCS issues in Building 9215 and are following up on this issue with both CNS and NPO.

The resident inspectors, NPO NCS program manager, NPO facility representatives, and members of the CNS criticality safety team conducted a walkdown of the Building 9212 C-1 wing. The resident inspectors observed CNS respond to a criticality safety issue during the walkdown. CNS chemical operators were processing a container in a glovebox and, upon opening, encountered material inside different from what was expected; this prompted them to question whether the material was permitted in the glovebox. The operators informed their supervisors, the SM, and work was paused. The SM responded by establishing an NCS administrative boundary per the CNS procedure for an abnormal condition involving fissile material. CNS reviewed all available material data and consulted the criticality safety evaluation (CSE) to verify that the material was permitted. Once the material was verified to be allowed per the CSE, the NCS administrative control was rescinded. The remainder of the walkdown was completed with no further NCS issues identified.