

## DEFENSE NUCLEAR FACILITIES SAFETY BOARD

May 13, 2022

**TO:** Christopher J. Roscetti, Technical Director  
**FROM:** Frank Harshman, Clinton Jones, and Brandon Weathers, Resident Inspectors  
**SUBJECT:** Oak Ridge Activity Report for Week Ending May 13, 2022

**DNFSB:** Frank Harshman and Clinton Jones reported for duty as Oak Ridge resident inspectors.

**Building 9212:** A large water leak occurred in Building 9212 on Monday. Over the preceding weekend, CNS performed a planned electrical power outage that required shutting down a tower water system that supplies Building 9212 processes. After CNS completed the electrical outage, the tower water system automatically restarted on Saturday evening. Utilities and facility personnel did not anticipate that the tower water system would automatically start. On Sunday, a utility operator noticed that the tower water system was running, and personnel walked down the facility. They found that the head pressure was slightly elevated, but did not identify any leaks. On Monday, facility personnel noticed that the tower water pressure in some areas of the facility was high and that tower water flow in other areas was low. Later that morning, a pressure relief valve activated and leaked water into one of the facility operating wings. Operators stopped the leak and estimated that over 100 gallons may have been released. The shift manager placed all Building 9212 processes that utilize tower water on hold. CNS determined that the anomalous conditions were because a valve had been left closed following the electrical outage. During the recovery from this event, CNS also found a hole in the stainless steel floor liner of a large geometry exclusion area and put a temporary patch in place. One chemical operator who worked on cleaning up the area contaminated his shoes. Radiological control personnel responded and measured activity levels on the shoes that were below the occurrence reporting threshold.

**Nuclear Criticality Safety:** CNS reconvened the fact finding meeting to investigate the fissile mass estimate that exceeded a nuclear criticality safety control (see 5/6/22 report) and developed several corrective actions. Prior to resuming operations with the impacted equipment, CNS will clean out material from the ductwork. Operations requested an additional non-destructive assay measurement for a different portion of a connected duct. An inadvertent accumulation prevention program team will perform a walkdown of the system and update the corresponding inadvertent accumulation prevention program report. CNS also created an action to identify all systems that have a fissile mass of approximately 60% or greater than the applicable nuclear criticality safety control limits. During the fact finding meeting, the enriched uranium operations production director and the responsible manager pursued different aspects of this event with a focus on proactively looking for other areas that could warrant further investigation.

**Y-12 Projects:** CNS submitted the startup notification report for the third quarter of fiscal year 2022 to NPO. This submission updated the startup dates of several projects that are important for long-term risk reduction and the transition of programmatic operations out of Building 9212. The electrorefining project and the direct chip melt front-loading furnace project were both delayed 6 months. The Building 9212 calciner project was delayed 13 months. A recent project performance self-assessment team noted that the calciner project has experienced a “pattern of deterioration in the Project Organization” and noted multiple instances of staff turnover in managing the calciner project.