

## DEFENSE NUCLEAR FACILITIES SAFETY BOARD

May 14, 2021

**TO:** Christopher J. Roscetti, Technical Director  
**FROM:** Matthew Duncan and Brandon Weathers, Resident Inspectors  
**SUBJECT:** Oak Ridge Activity Report for Week Ending May 14, 2021

**DNFSB Staff Activity:** A staff review team had another teleconference with NPO for a review of the CNS dosimetry program (see 4/3/21 report).

**Building 9212:** Wednesday afternoon, five continuous air monitors alarmed in an active work area, indicating an elevated airborne radioactivity level. Two chemical operators were retrieving material from a storage room and one of the operators shook a covered pan that contained enriched uranium. Shortly after the operator shook the pan, the first continuous air monitor alarmed. Other continuous air monitors further away from the storage room alarmed and radiological control personnel ordered everyone to exit the general area. Operations personnel notified the Y-12 Operations Center and the fire department responded to investigate. The fire department did not find evidence of a fire. One of the operators had radiological contamination on his shirt that was below the occurrence reporting threshold. The two operators who were closest to the source were wearing personal air purifying respirators, but other workers in that portion of the facility were performing activities that did not require respiratory protection. CNS will collect bioassay samples from all of the employees who were in the area and lung counts will be performed for a sub-set of the group.

Separately, operations personnel shut down denitrator operations when they noticed a small leak of uranium trioxide powder into the enclosure, which contained the leak. The criticality safety evaluation evaluated this abnormal condition and considered that a required surveillance would detect accumulation before there would be a criticality concern. A nuclear criticality engineer had operations personnel confirm sources of water had been isolated and to periodically confirm the enclosure remains dry. He categorized the event as a deficiency. CNS plans to determine the source of the leak after decontaminating the area.

**Highly Enriched Uranium Materials Facility:** A brief power loss caused several air handling units to trip and shut down improperly without proper isolation causing a loss of smoke detection due to a low flow rate condition. Operations personnel declared the secondary confinement system inoperable and entered the applicable limiting condition for operation. The suspected cause of the power loss was due to heavy thunderstorms in the Oak Ridge area. CNS reported the event as a performance degradation of a safety system which prevents satisfactory performance of its design function when it is required to be operable. Since there was an ongoing corrective action from a previous improper isolation in 2020 (see 3/20/20 report), CNS could screen the issue such that an event investigation was not required. However, the resident inspectors noted that if an issue screens out of having an event investigation, then an event notification is not generated. Event notifications are a primary method for notifying senior contractor management, NPO, and the resident inspectors that an abnormal event has occurred. Prior to a CNS change to the event recovery process in 2019, initial event notifications were generated before an event investigation (see 4/17/20 report).