

## DEFENSE NUCLEAR FACILITIES SAFETY BOARD

September 28, 2018

**TO:** Christopher J. Roscetti, Technical Director  
**FROM:** Matthew Duncan, Resident Inspector  
**SUBJECT:** Oak Ridge Activity Report for Week Ending September 28, 2018

**10 CFR Part 830:** The resident inspector attended the Department of Energy's public meeting in the city of Oak Ridge regarding proposed changes to 10 CFR Part 830, *Nuclear Safety Management*.

**Building 9212 Uranium Accumulation:** Earlier this month, while performing nondestructive assay on the sand separator for the reduction process in Building 9212, personnel discovered there was some nuclear material present in the sand separator motor housing. Due to uncertainty regarding the material distribution within the housing and the unknown equipment geometry, an estimated mass could not be provided, though they were confident it was a small amount and that the system mass limit had not been exceeded or approached. Operations with the sand separator were placed on hold. The week after, maintenance personnel cleaned out the motor housing and the floor of the cabinet then sent the cleanout material to a laboratory for nondestructive assay. The amount of uranium-235 that had accumulated was not negligible but was well below the nuclear criticality safety mass limit for the overall system. The amount was also well below the administrative system cleanout limit. Production, operations, and engineering personnel met to discuss the situation and removed the hold on sand separator operations. A new nondestructive assay measurement point has been added to the motor housing to detect any future accumulation.

**Building 9204-2E:** CNS plans to restart operations at the Nuclear Detector and Sensor Testing Center Site One after more than twelve months of non-operation. This activity is located in Building 9204-2E. It enables experiments to test various detectors and sensors that use active neutron interrogation techniques on items containing uranium. NPO approved CNS's proposal to perform a checklist readiness assessment with the startup approval authority being the Y-12 Site Manager. CNS plans to restart this capability by December.

**Building 9212 Fire Protection:** There was a small leak at a sectional control valve on the antifreeze loop for a portion of the fire suppression sprinkler system for Building 9212. The shift manager and fire protection engineering personnel discussed the situation and determined there was not reasonable assurance the system met the operability requirements in the Technical Safety Requirements. The shift manager entered the appropriate limiting condition for operation which required stopping hot work and initiating and maintaining fire patrols. Once the antifreeze solution was verified to have a freeze point lower than negative ten degrees Fahrenheit, the shift manager exited the limiting condition for operation. A previously filed occurrence report was cancelled once it became known the system had not actually become inoperable. Under normal circumstances, the freeze point is checked annually prior to the beginning of the seasonal freezing period.