

## DEFENSE NUCLEAR FACILITIES SAFETY BOARD

January 25, 2019

**TO:** Christopher J. Roscetti, Technical Director  
**FROM:** Matthew Duncan and Brandon Weathers, Resident Inspectors  
**SUBJECT:** Oak Ridge Activity Report for Week Ending January 25, 2019

**Building 9212:** During maintenance activities related to 50-year sprinkler head replacements, CNS personnel discovered that a section of the wet-pipe fire suppression sprinkler system was disconnected from the water supply. This wet-pipe fire suppression system is a credited safety system in the Building 9212 safety basis. The facility was already in the Technical Safety Requirements Limiting Condition of Operation action statement for this portion of the wet-pipe system being inoperable due to the maintenance activities being performed. Piping was replaced to connect the affected section to the wet-pipe system. Since the condition was corrected within the three business day allowance in the Y-12 unreviewed safety question determinations procedure, a potential inadequacy in the safety analysis was not declared. Based on a review of historical system drawings at the fact finding meeting, this discrepant condition likely existed for decades. CNS has identified other instances of discrepant-as-found conditions with wet-pipe fire protection systems during 50-year sprinkler head replacement activities over the past several years (see 11/11/16, 3/27/17, and 10/19/18 reports). CNS plans to conduct an extent of condition review on this issue.

**Building 9212:** Following the discovery of uranium-contaminated sand in the reduction area, CNS has been performing actions identified at the fact finding meeting to prepare for resuming reduction operations (see 1/18/19 report). The resident inspectors observed the initial portion of an Inadvertent Accumulation Prevention Program (IAPP) walkdown of the reduction area. Additional IAPP walkdowns of the reduction area and the ventilation system of Stack 28 are being conducted by CNS personnel. Nondestructive assay results determined that approximately 166 grams of U-235 were cleaned out from underneath the hood. The last time that this area may have been cleaned out could not be determined at the fact finding meeting. CNS personnel suspect that this accumulation may have occurred over 20 or more years. CNS plans to replace the doors on the enclosure beneath the hood to allow easier access to the area for inspection and implement a process for clean-out of the area. The criticality safety evaluation is also being reviewed in light of this event and the results of the IAPP reviews. At the critique meeting, an action was identified to brief operators on the factors that led to the recent uranium accumulation events that have occurred at Y-12 (see 6/2/17, 12/15/17, 2/16/18, 3/30/18, and 6/22/18 reports). Reduction area operations remain on hold until the IAPP walkdowns are completed and the results are reviewed at an operational safety board meeting.

**Building 9212:** CNS has been working to restart the ultrasonic chip cleaning system since the processing of uranium machining chips was paused following a sparking briquette event last year (see 12/7/18 and 12/14/18 reports). The ultrasonic chip cleaning system has not been used for chip processing since March 2018 due to the discovery of inadvertent uranium holdup in the phase separator columns and associated piping (see 6/21/18 report). This month, CNS installed piping to bypass the phase separator columns. The criticality safety evaluation and operating procedures are being updated for the new system configuration.