DEFENSE NUCLEAR FACILITIES SAFETY BOARD

June 26, 2020

TO: Christopher J. Roscetti, Technical Director
FROM: Matthew Duncan and Brandon Weathers, Resident Inspectors
SUBJECT: Oak Ridge Activity Report for Week Ending June 26, 2020

Performance Management: NNSA released the FY 2019 Performance Evaluation Summary for CNS for both Y-12 and Pantex. Given the results, NNSA decided not to exercise the option to extend the CNS contract, and the contract will expire on September 30, 2021. With respect to nuclear safety at Y-12, NNSA determined that CNS exceeded the goals for Area 5 De-inventory by removing or moving 5.7 metric tons of material-at-risk and met the key objectives for the Nuclear Facility Extended Life Programs. NNSA noted issues with conduct of operations resulting in criticality safety requirement violations, quality issues with the Calciner project, and performance issues with the nuclear criticality safety program.

Building 9212: Last week, operators performed the first stage of removing legacy uranium holdup from out-of-service carbon burner and destructive distillation unit ductwork in a basement area of Building 9212 (see 12/14/18 report). After the activity was completed, an NPO facility representative questioned whether the work area was a confined space. The Y-12 confined space program manager confirmed that this basement area is a non-permit confined space, yet it was not posted as such. When CNS personnel developed the job hazard analysis for this cleanout activity, they did not identity that this area was a non-permit confined space. As a result, the operators who performed this activity did not receive the appropriate training and the job hazard analysis did not consider all of the potential hazards. During CNS' evaluation of the event, they found a job hazard analysis used for general access to that area also did not consider hazards due to the confined space. Facility operations management placed all confined space and potential confined space entries on hold following the event. CNS performed a review of other confined space areas in the 9212 Complex and found twelve that lacked or had inadequate postings and four that require further evaluation. CNS developed initial corrective actions at the fact finding and critique meetings that include assigning operations representatives to serve as confined space owners in the production facilities and performing a causal analysis.

Modular Facility Operation: CNS completed the startup checklist for the new modular facility. As noted previously, this is the first time that Y-12 will perform fissile material operations with a component that exceeds the ANSI/ANS-8.1-2014 single-parameter mass limit in a facility considered to be non-nuclear where criticality is precluded by the nature of process and segmentation such that a criticality accident alarm system is not required (see 1/3/20 report).

Calciner Project: CNS recently revised the calciner project safety design strategy to update the status of project risks. In this revision, CNS acknowledged that work associated with long term storage of the calciner product will be managed by a different project team and is outside the scope of the calciner project. After the calciner product is created in Building 9212, it will need to be transported and stored in another facility at Y-12. The calciner product presents nuclear criticality safety challenges associated with long term storage due to its chemical properties. CNS anticipates that additional analysis and development of potential controls will be needed to support long term storage of the calciner product.