

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

July 31, 2020

TO: Christopher J. Roscetti, Technical Director
FROM: Matthew Duncan and Brandon Weathers, Resident Inspectors
SUBJECT: Oak Ridge Activity Report for Week Ending July 31, 2020

COVID-19: Over the past few weeks at Y-12, the number of new cases and employees under quarantine have increased. This week, CNS issued a COVID-19 enhanced action plan to limit the spread of COVID-19. CNS assigned actions to improve communication with employees regarding COVID-19, re-validate existing controls, and evaluate new controls.

Building 9212: NPO recently completed a readiness assessment for the restart of ultrasonic chip cleaning operations and documented two post-start findings and six observations in the final report. The first post-start finding related to numerous unaddressed equipment issues that resulted in process work-arounds, additional work by the operators, and potential safety issues. For example, the review team noted various tanks were blackened from residue build up, which made determining the tank level difficult. The second post-start finding was that operating procedures contain steps that are ambiguous or that could result in safety issues. The review team identified several procedure steps that rely on operator discretion or judgment. NPO directed CNS to submit corrective action plans for the findings for verification prior to restart.

The NPO readiness assessment was conducted concurrently with the CNS readiness assessment. The CNS readiness assessment team identified one weakness and seven observations. The weakness was that production management and the ultrasonic chip cleaning system crew were unfamiliar with the expectations for performing readiness demonstrations.

Continued Safe Operability Oversight Team (CSOOT): The resident inspectors attended a monthly CSOOT meeting where personnel provided status updates on several activities that the CSOOT monitors. The Building 9212 transition strategy program manager reported that four out-of-service systems have been isolated this fiscal year. One of these systems was the out-of-service carbon burners and destructive distillation units (see 12/14/18 and 6/26/20 reports). CNS plans to complete the two remaining clean-out phases to remove uranium holdup from that system this fiscal year. In fiscal year 2021, CNS plans to isolate and remove holdup from additional out-of-service systems that were identified and prioritized by nuclear criticality safety personnel. CNS outage planning personnel provided a summary of an upcoming outage to replace ductwork associated with the holden gas furnace. In 2016, the air ducts had a build-up of fissile material that led to holden gas furnace operations being paused (see 5/23/2016 report). Y-12 personnel have had various plans for executing holden gas furnace ductwork upgrades since 2008, but modifications had not been executed.

Nuclear Criticality Safety: Last week, production operators found a broken liner in a reduction reactor vessel prior to firing it. The reactor vessel contained fissile material and reactants at the time of discovery. The liner is a safety significant design feature that is credited to reduce the frequency and consequences of ductile failure of the reactor vessel. Nuclear criticality safety personnel consulted fire protection personnel and provided guidance to cap the reactor vessel and purge it with argon prior to placing it in storage.