

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

March 27, 2017

TO: Steven Stokes, Technical Director
FROM: Jennifer Meszaros and Rory Rauch, Resident Inspectors
SUBJECT: Oak Ridge Activity Report for Week Ending March 24, 2017

Staff members R. Jackson and L. Schleicher were at Y-12 observing testing that supports Uranium Processing Facility design and construction. In addition, N. George, L. Lin, D. Shrestha, S. Sircar, and B. Weathers were on site to conduct a review of the Transuranic Waste Processing Facility Documented Safety Analysis.

Building 9212/Fire Protection: Recently, CNS began sprinkler head replacements on a credited wet pipe system in Building 9212 as required by NFPA 25, *Standard for the Inspection, Testing, and Maintenance of Water-Based Fire Protection Systems*. This week, during post maintenance testing (PMT), CNS personnel identified additional system maintenance issues including a leaking drain valve on the wet pipe system in question and a broken pressure gauge at the interface between the wet pipe system and a credited dry pipe system. CNS maintenance repaired both issues.

During parallel system inspections, CNS engineering identified a small section of piping that was undersized relative to NFPA requirements. The Building 9212 operations manager determined that the condition constituted a discrepant, as-found condition and entered the potential inadequacy in the safety analysis (PISA) process. The operations manager subsequently exited the process after the line was repaired within three days as is allowed by the site procedure governing the PISA process. Previously, CNS also identified and repaired similar discrepancies on credited Building 9215 systems (see 11/11/16 report). Given that CNS is planning additional sprinkler head replacement activities and associated system inspections in Building 9212 and in other nuclear facilities over the course of several years, the resident inspectors and CNS management discussed whether it would be beneficial to evaluate credited system performance assuming that portions of currently uninspected systems may be undersized. CNS management is considering this suggestion.

Site Operational Safety Board (OSB): Y-12 Utilities personnel have operated two site potable water tanks in manual mode since a controller issue in November 2016 (see 12/2/16 report). Of note, these tanks supply water to credited facility fire suppression systems. This week, CNS conducted an OSB meeting to consider a PMT plan that will verify system functionality following repairs to the controller. During PMT, CNS will confirm that the tanks fill automatically to preset levels and that system valves align as required to support tank selection. Y-12 Utilities will leave the system in automatic mode after testing is complete, provided the system meets applicable criteria. The OSB approved this PMT plan.

Shipping Containers: This week, CNS identified several issues that impact shipping containers used at Y-12. Y-12 Engineering first recognized an error in a criticality safety-related calculation that evaluates a type of on-site container transported via the Special Nuclear Materials Vehicle (SNMV). The error impacts the number of drums that CNS can load onto the SNMV at a given time. The second issue is related to a different type of container and impacts the manner by which Building 9204-2E operations personnel hoist the inner container assembly when it is empty. CNS identified that the lift has never been formally evaluated to ensure personnel safety. Both issues were discovered incidentally during evaluations that support tangential operational changes. CNS has suspended the impacted activities pending further evaluation.