

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

December 11, 2020

TO: Christopher J. Roscetti, Technical Director
FROM: Matthew Duncan and Brandon Weathers, Resident Inspectors
SUBJECT: Oak Ridge Activity Report for Week Ending December 11, 2020

COVID-19: Over the past month, CNS has experienced a notable increase in positive COVID-19 cases among the workforce that is proportional to the upward trend in the surrounding community. The rise in positive cases and quarantined individuals has required an increase in overtime work and movement of personnel to priority activities to avoid impacting overall mission essential functions. CNS is reacting on a daily basis to fluctuations in available personnel across many organizations.

Y-12 Welding Program: In September, CNS discovered that the Y-12 Weld Test Shop has incorrectly administered a bend test dating back to at least 2012 due to using equipment that was improperly sized (see 11/6/20 report). The bend test is used to reveal lack of fusion weld defects during welder qualification. CNS has requalified maintenance and construction welders to the appropriate bend test and completed reviews of 46 active weld packages that were paused in October. CNS issued a non-conformance report that dispositioned legacy welds as “accept/use-as-is” based on factors such as no historic evidence of lack of fusion failures at Y-12 and the weld examination program. However, NPO questioned aspects of the technical basis used in the non-conformance report and potential inadequacy of the safety analysis process entry and disposition form for legacy welds. In response to NPO’s questions, CNS developed and executed a legacy weld walkdown plan to supplement the non-conformance report. The walkdown plan focused on systems and structures that were most susceptible to a lack of fusion weld defect and included systems that operate with uranium bearing, acid/caustic, or other hazardous materials. CNS identified systems in Buildings 9212, 9204-2E, 9215, and 9204-2 to include in the walkdowns and evaluated approximately 2975 process welds and 102 structural welds. The walkdown teams identified six welds that required additional inspection by a certified weld inspector. The certified weld inspector did not identify lack of fusion in these six welds, but did note one section of piping that had numerous other weld imperfections. The welds in that section of piping appeared to be very old. The certified weld inspector’s observations were turned over to the appropriate system engineer for further evaluation.

Nuclear Criticality Safety: CNS responded to a leak from an out-of-service tank in Building 9215 earlier this year (see 9/25/20 report). That tank was one of eight similar tanks associated with the sheet rinse system. As a follow-up to the initial leak, production personnel drained the liquid from the remaining tanks on November 24. On Monday, personnel returned to open the tank drain valves to let any residual liquid that might drip from the tanks collect in beakers that were placed underneath each tank. On Tuesday morning, personnel discovered that liquid had overflowed from two of the beakers. A small puddle of liquid was on the floor and liquid was actively dripping from four of the open valves. They established administrative control of the area and received guidance from nuclear criticality safety personnel to allow the eight valves to be closed. Nuclear criticality safety personnel also provided instructions to transfer the liquid from the beakers to safe bottles and to place an empty beaker beneath each tank.