DEFENSE NUCLEAR FACILITIES SAFETY BOARD

January 22, 2021

TO: Christopher J. Roscetti, Technical Director
FROM: Matthew Duncan and Brandon Weathers, Resident Inspectors
SUBJECT: Oak Ridge Activity Report for Week Ending January 22, 2021

DNFSB Staff Activity: Several members of the technical staff had a second teleconference with CNS and NPO personnel to discuss the results of a review of Building 9212 out-of-service equipment (see 8/28/20 report). This review continued after the resident inspectors discovered additional relevant information that required further evaluation (see 9/25/20 report).

Fire Protection: Following the short loss of the Y-12 potable water system earlier this month, personnel measured an abnormally high pressure when checking a water supply pressure gauge on a fire suppression system (see 1/8/21 report). Several Y-12 fire suppression systems have a check valve immediately upstream of the water supply pressure gauge. This configuration could lock in static pressure of the system. If the pressure is locked in, the gauge may give an incorrect indication of water supply pressure. CNS entered the potential inadequacy of the safety analysis determination process and performed operability determinations for Buildings 9212, 9215, and 9204-2E. CNS established a compensatory measure to perform the main drain test monthly (versus annually) until they determine whether a main drain test should be performed at the same time as the monthly technical safety requirements surveillance of the water supply pressure.

Building 9215: Last Thursday, fire department personnel responded to Building 9215 due to two fused sprinkler heads that were discharging water from a credited fire suppression system in a supply fan room. The shift manager entered the appropriate limiting conditions of operation. This event occurred in a different supply fan room than a similar event in December (see 1/8/21 report). The same fire suppression system was activated in both events. For the most recent event, CNS found that a steam control valve for the supply fan room failed while the supply fan was out of service due to a maintenance activity in the facility. CNS is investigating the cause of the control valve failure and continues to investigate the cause of the December event.

Radiological Protection: This week, NPO transmitted the October 2020 monthly operational awareness report to CNS. Among the observations and issues, NPO identified a finding due to the significant increase in personnel radiological contamination events at Y-12. At the time that the October report was developed, 10 out of the 20 personnel contamination events during 2020 had occurred in October. Since late October, Y-12 personnel did not have any other personnel contamination events until three occurred this week. In the first event, a fire department chief alarmed a personnel contamination monitor due to contamination on the leg of his company pants. In the second event, a construction carpenter had measurable contamination on his elbow and shirt sleeve. In both of these events the contamination levels were below the threshold that is reportable under DOE Order 232.2A. In the third event, a chemical operator found contamination on his forearm after doffing his anti-contamination clothing. Radiological control personnel measured alpha contamination on the operator's forearm that exceeded the threshold for filing an occurrence report under DOE Order 232.2A. Radiological control personnel successfully decontaminated the operator. CNS paused the work activity that the operator was performing and conducted an event investigation.