DEFENSE NUCLEAR FACILITIES SAFETY BOARD

TO: Steven Stokes, Technical Director
FROM: William Linzau and Rory Rauch, Site Representatives
SUBJECT: Oak Ridge Activity Report for Week Ending December 12, 2014

Fire Protection: On November 19, 2014, the Fire Protection Operations (FPO) staff responded to Building 9202 to investigate an alarm signal from a sprinkler system pressure switch. The cause of the alarm was found to be a normal surge in the water supply system and the FPO staff cleared the alarm to reset the system. A short time later, the alarm signal activated again, and per their governing procedure, the FPO staff disabled the alarm until it could be repaired. The FPO staff informed the Alarm Room Officer (ARO) of the condition. The ARO subsequently logged the action to disable the alarm and submitted a service notification to get it repaired. The ARO also noted that a 4-hour fire patrol was initiated as a compensatory measure until the repairs could be completed. However the ARO did not update the master fire patrol log sheet and the status of the alarm and implementation of the compensatory measure were not effectively communicated during shift turnover. On December 1, 2014, FPO staff conducted a routine check that compared their informal list of all compensatory measures against the master fire patrol log and noted this 4-hour fire patrol had not been conducted for 11 days.

In response to this event and other recent conduct of operations issues (e.g., the Technical Safety Requirement violation involving a failure to enter the proper limiting conditions for operation prior to impairing a fire suppression system, see 11/14/14 report), the Fire Chief requested an assist review from the Nuclear Operations Support organization. This review team will observe FPO field activities and alarm room operations to identify opportunities to improve operational formality and minimize error prone conditions.

Aging Infrastructure: Late last month, Analytical Chemistry Operations (ACO) personnel reported three unrelated piping failures due to age-related degradation in Building 9995. The first failure caused the bottom of a condensate steam trap to eject and vent steam to the exterior of the facility. The second failure occurred when a 2-inch chilled water valve ejected from a pipe due to excess corrosion resulting in the discharge of large volumes of water to the facility. The third failure involved a less significant leak in a hot water pipe. No injuries or releases of contamination resulted from these piping failures, but a fire system transponder was wetted during the chilled water leak and required repair.

Nuclear Criticality Safety (NCS): During an extent-of-condition review in response to recent NCS analysis issues (see 12/5/14 and 11/21/14 reports), an NCS engineer identified a discrepancy between the configuration of a funnel used during ultrasonic chip cleaning operations in Building 9212 and the supporting NCS analysis. Production personnel have tagged the funnel out of service. The discrepancy appears to have been the result of an error in defining the NCS requirements for this operation, not in Production's implementation of the requirements, but CNS plans to perform a causal analysis to definitively determine the discrepancy's origin.

This week, following the discovery of the funnel discrepancy, the CNS Mission Engineering Manager formalized the extent-of-condition review by assigning an official lead for the effort and documenting the scope of the review. Given that most of the recent issues involve some form of discrepancy between field conditions and the NCS analysis, many of the tasks within the scope of the review focus on the operational review process (an NCS engineer-led field-based review intended to ensure that process conditions are consistent with the NCS analysis). Key tasks include: accelerate the schedule for NCS operational reviews; perform a management check of previously completed operational reviews; and update the procedure for operational reviews, as necessary, to incorporate closure criteria for observer comments.