DEFENSE NUCLEAR FACILITIES SAFETY BOARD

January 31, 2025

TO: R. T. Davis, Acting Technical Director
FROM: Frank Harshman and Clinton Jones, Resident Inspectors
SUBJECT: Oak Ridge Activity Report for Week Ending January 31, 2025

Building 9204-2E: A resident inspector (RI) attended an event investigation on two credited fire suppression systems that CNS declared inoperable last week. Temperatures onsite dropped below 10 degrees Fahrenheit causing significant challenges to multiple buildings, including Building 9204-2E. A utility operator discovered areas of the building with unusually cold temperatures and notified the heating, ventilation, and air conditioning system engineer. This prompted a shift technical advisor (STA) and a fire protection engineer (FPE) to investigate the building and check the credited portions of the fire suppression system for potential freezing conditions. During this effort, the STA and FPE discovered a sprinkler head on a credited fire suppression system that measured 19 degrees Fahrenheit. The STA notified the shift manager (SM) and, after consultation with the chief FPE, the SM declared the system inoperable and authorized draining the affected system. The SM initiated fire patrols for the coverage areas of the affected system and the operations manager filed an occurrence report due to the degradation of a safety significant system. The following day, temperatures in the affected area increased sufficiently for fire department personnel to refill the fire suppression system. Once refilled, CNS declare the system operable, exiting the limiting condition for operation and ceasing fire patrols.

On Wednesday of last week, CNS personnel reported hearing a water motor gong from the fire suppression system to the Building 9204-2E shift manager. The water motor gong indicates that water is flowing in one of the fire suppression systems in the building. Upon further investigation, the shift manager discovered a sprinkler line break in a hallway near a roll up door. The sprinkler line was part of a different credited fire suppression system from the prior week's discovery of an excessively cold sprinkler head. CNS again entered a limiting condition for operation and declared that system inoperable due to the need to isolate it. CNS is still trying to determine the overall cause of temperature control issues for portions of the facility. During a walkdown of the area of the sprinkler line break, an RI asked if the credited horn for the criticality accident alarm system being wetted could compromise the operability of that system. As a result of the question, an STA performed an operability determination with subject matter expert input and concluded there was no degradation to the credited system.

Building 9212: An RI attended the critique of an event investigation for a wet vacuum system (WVS) trap failing a technical safety requirements surveillance. CNS determined the surveillance to be unsatisfactory when an isolation valve failed to remain closed after liquid was drained from the trap. CNS filed an occurrence report for the degradation of a safety significant system. CNS placed operations supported by the WVS on hold and troubleshooting efforts are ongoing. CNS entered the potential inadequacy of the safety analysis (PISA) process once it was determined that the possible faulty components, which are responsible for maintaining the valve closed, could fail in a manner that may result in the isolation valve prematurely opening. The PISA process will evaluate whether the system could perform its safety function when required.