

## 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 January 10, 2014

**Freeze Protection Program:** This week, Y-12 experienced freezing weather conditions with temperatures nearing 0° F. The cold conditions negatively affected at least 11 different buildings and impacted approximately 40 fire protection systems (most of which were the result of proactive freeze protection measures). The impacts included damage to a portion of the piping of a safety-significant fire protection system in Building 9212. Maintenance personnel repaired the damage in approximately two days. Other examples of freeze-related impacts included water damage in a room in Building 9995 (the analytical chemistry facility) due to failure of a heater and subsequent sprinkler line rupture, as well as water damage to an auxiliary room at the Technical Support Center when sprinkler and water lines in the attic ruptured. The Y-12 Fire Department drained several wet-pipe fire protection systems as temperatures decreased in specific areas (stairwell, penthouse, etc.) to eliminate the risk of freeze damage. In each case, B&W took the appropriate response actions, which included implementing fire patrols and entering the appropriate limiting conditions of operation (LCO). The cold conditions also caused partial impairment of the site's fire alarm pull box system and other potable water line failures.

The B&W Vice President for Production indicated that the freeze protection actions the site implemented in the last few years helped mitigate the impact of these cold weather conditions. An example is the use of remote temperature monitoring in areas at risk of experiencing lower temperatures. However, the extreme nature of this week's freezing temperatures may have exposed additional opportunities to improve the site's freeze protection program. B&W's Deputy General Manager has asked the senior managers from the affected organizations to hold a meeting next week to develop lessons learned. The intent of this meeting is to review the site's preparation prior to this week's weather conditions, document what occurred, and evaluate the site's freeze protection program for further improvements.

**NPO Oversight:** This week, NPO issued a report summarizing the results of its November 2013 Quarterly Issues Management Meeting. The report concludes that B&W's fourth quarter fiscal year 2013 Contractor Assurance System (CAS) performance report was comprehensive and self-critical. This conclusion was largely based on the fourth quarter FY13 CAS report's inclusion of the first generation of a System Approach to Organizational Health; essentially, a set of "stop light" charts with performance indicators that monitor the health of key organizational systems such as the CAS, operations, and authorization basis. NPO rates B&W Y-12's CAS effectiveness level as "managed" (the second most effective level); which means that performance is measured both quantitatively and qualitatively, continuous improvement is desired and routinely sought, and processes are understood and controlled. Key open NPO issues include: the fire alarm response and fire protection compensatory measure processes, work planning and control, and the criticality control implementation process.

**Building 9212:** NPO's Fire Protection Authority Having Jurisdiction (AHJ) approved the B&W request for an increase in transient combustible loading limits in order to advance the repair work on the Holden Gas Furnace (HGF). The introduction of these materials will increase the combustible loading in the HGF's room to a value that exceeds the current LCO limit for spaces without sprinkler systems. Previously, the B&W AHJ approved these types of changes (see 12/13/13 report), but NPO's letter directs B&W to evaluate and revise this LCO "to ensure that DOE nuclear safety approvals are not being circumvented through AHJ approvals."