

## DEFENSE NUCLEAR FACILITIES SAFETY BOARD

TO: Steven Stokes, Acting Technical Director  
FROM: William Linzau and Rory Rauch, Site Representatives  
SUBJECT: Oak Ridge Activity Report for Week Ending February 15, 2013

**Work Planning and Control:** The Building 9204-2E technical safety requirements document allows the shift manager to establish alternative coverage for work in high noise areas that affects a worker's ability to hear a Criticality Accident Alarm System (CAAS) alarm. For these activities, the shift manager must post the area to alert personnel of special entry requirements. Workers entering these areas are required to don equipment (personal radiation detection instruments, PRDIs) capable of alerting the worker of a criticality accident. Late last week, utilities personnel performing work in a designated high noise area covered by a Building 9204-2E CAAS inappropriately removed the posting requiring PRDIs without shift manager approval and subsequently entered the area without PRDIs. The workers had isolated the source of the high noise (a steam leak) prior to entering the area and had received permission from the industrial safety subject matter expert to down-post and enter without hearing protection. However, the workers inappropriately applied this direction to the restrictions associated with the degraded CAAS audibility condition. Only the shift or operations manager has the authority to provide this direction. During the fact-finding meeting for the event, B&W determined that the job hazard analysis for this activity did not address the degraded CAAS audibility condition.

**Criticality Safety:** B&W evaluates all safety basis or criticality safety-related passive design features for their potential to degrade. If the passive design feature is determined to have the potential to degrade, the evaluator will also specify the surveillance activity needed to verify the continued effectiveness of the control, along with its acceptance criteria and periodicity. A criticality safety engineer recently discovered that the surveillance implemented for a criticality safety requirement-level passive design feature (a condensate drain) for an accountability operation in Building 9212 did not address all of the acceptance criteria identified in the associated degradation evaluation. Specifically, the previously implemented surveillance activity only required the funnel portion of the drain to be inspected for blockage. The acceptance criteria specified in the degradation evaluation required the condensate line, funnel, and tubing to be inspected for degradation and free from debris. B&W has since inspected the condensate drain using the more stringent acceptance criteria and it passed inspection. As reported last week, B&W has recently discovered a number of similar issues indicating weaknesses in its processes for implementing criticality safety requirements. In addition to the corrective actions already reported in this area, B&W is preparing a schedule for re-validating the implementation of all criticality safety evaluations at Y-12.

**Building 9720-5:** During a re-evaluation of the technical analysis of CAAS detectors in Building 9720-5, the safety analyst determined that there was a gap in detection coverage. The technical analysis ensures that at least two detectors will actuate during a criticality event anywhere in the facility. The re-evaluation revealed that locations on the loading docks had been overlooked and detector coverage may not be adequate. The re-evaluation was being conducted due to the increased loading of depleted uranium in the facility, which changes the shielding profiles of the detector. The facility's operations manager declared a potential inadequacy of the safety analysis and fissile shipments to the facility have been suspended pending further analysis of the CAAS detector coverage at the loading docks.