DEFENSE NUCLEAR FACILITIES SAFETY BOARD

TO: Timothy Dwyer, Technical Director
FROM: Wayne Andrews and David Kupferer, Site Representatives
SUBJECT: Oak Ridge Activity Report for Week Ending April 20, 2012

Staff member Rory Rauch was in Oak Ridge this week to augment site representative coverage.

Maintenance/Work Planning and Execution. Last month, a YSO Facility Representative for wet chemistry operations in Building 9212 identified that B&W had not identified appropriate isolation points in a lockout/tagout (LO/TO) permit that had been executed to support maintenance work (i.e., tightening a leaking flange) associated with the Westfalia centrifuge system in C-1 Wing (see the 12/24/10 report). B&W subsequently determined that a necessary isolation point had not been identified and positively controlled as required by Y-12 procedures. In response to this and other recent LO/TO incidents (see the 7/1/11 and 2/10/12 reports), B&W issued a standing order that requires an independent reviewer evaluate the isolation boundary and isolation points associated with both permitted and single source LO/TO activities.

B&W has been executing the corrective actions it submitted to YSO for addressing identified LO/TO and hazard energy control issues (see the 2/10/12 report). Most significantly, last week B&W issued its Hazardous Energy Control Performance Improvement Plan, which includes additional intermediate-term and long-term corrective actions. Noteworthy actions include the following: (a) revising the qualification requirements and associated training for LO/TO issuing authorities, subject matter experts, and authorized employees, (b) develop improved metrics associated with LO/TO planning and execution, (c) require additional hazards analysis and specification of LO/TO controls in work control documents, (d) develop and implement improved oversight for execution of LO/TO, and (e) evaluate and revise Y-12 procedures associated with the execution of LO/TO activities with an emphasis on simplifying processes while strengthening requirements. B&W expects to complete these corrective actions by September and has committed to perform an effectiveness review of these corrective actions in October (see the 2/17/12 and 3/23/12 reports).

Fire Protection. YSO approved the two Justifications for Continued Operations (JCOs) B&W had submitted regarding unanalyzed failure modes associated with four safety-significant dry-pipe fire suppression systems associated with Buildings 9212 and 9215 (see the 4/6/12 report). In its JCOs, B&W had proposed to develop and implement a new surveillance requirement for the subject dry pipe systems to be inspected, flushed, and repaired on a five-year periodicity. YSO identified one Condition of Approval that the 5-year obstruction surveillance—a requirement of the 2011 version of National Fire Protection Association 25, *Standard for the Inspection, Testing, and Maintenance of Water-Based Fire Protection Systems*—be added to the Technical Safety Requirements (TSRs) for Buildings 9212 and 9215. In addition, YSO directed B&W to evaluate the adequacy of the surveillance requirements defined in the TSRs associated with all safety-significant and safety-class wet-pipe fire suppression systems.

Technology Development. B&W has continued to produce batches of refined depleted uranium metal using its first generation Electrorefining (ER) prototype in the Technology Development Building (see the 8/26/11 report). B&W recently completed installation and testing of its first generation Direct Electrolytic Reduction (DER) prototype in a glovebox in the Technology Development Building and has started converting oxide to metal. By June, B&W is planning to complete installation and testing of a second generation ER prototype in a glovebox adjacent to the DER glovebox. B&W's Acceleration Plan for the Uranium Processing Facility, which was accepted by YSO last month (see the 3/23/12 report), identified that production versions of DER and ER need to be installed in Building 9215 by the end of FY 2016.