

## DEFENSE NUCLEAR FACILITIES SAFETY BOARD

March 5, 2010

TO: Timothy Dwyer, Technical Director  
FROM: Donald Owen and David Kupferer, Oak Ridge Site Representatives  
SUBJECT: Activity Report for Week Ending March 5, 2010

**Highly Enriched Uranium Materials Facility.** In December, during its Operational Readiness Review, NNSA identified a pre-start finding regarding operability of the Secondary Confinement System (see the 1/15/10 site rep. report). B&W's primary corrective action was to operate the exhaust fans in the variable inlet vane (VIV) mode until engineering could determine why, following a loss of normal power, the exhaust fans unexpectedly shutdown while running in the variable frequency drive (VFD) mode. B&W recently issued its investigation report, which states that additional testing was inconclusive for determining why the fans failed to properly operate in VFD mode. The report recommends that B&W be allowed to operate the fans in VFD mode subsequent to reprogramming the system's programmable logic controller (PLC) to automatically transfer fan operation from VFD mode to VIV mode upon losing normal power. B&W is planning the PLC modification and testing as well as the necessary safety basis changes.

**Safety Analysis Research.** The site reps. observed the test apparatus that B&W has designed and constructed to obtain additional information on how uranium metal reacts in a fire environment. B&W's test apparatus will be used to subject depleted uranium test coupons (2 kg metal blocks) to a high-temperature environment that includes direct flame impingement. The purpose of this testing is for B&W to obtain data regarding airborne release fraction (ARF) and respirable fraction (RF) parameters that could provide a basis for using ARF and RF values that are lower than the bounding values specified in the applicable DOE directive (DOE Handbook 3010-94, see the Board's 1/17/08 letter to NNSA). B&W is finalizing its test plan and anticipates conducting 10-20 tests this fiscal year beginning in late-March. These tests are being funded by DOE's nuclear safety research and development initiative.

**Quality Assurance (QA).** B&W submitted a project plan to YSO that defines the actions it plans to take to implement the requirements of ASME NQA-1-2008, *Quality Assurance Requirements for Nuclear Facility Application*, across all Y-12 facilities and organizations (see the 7/17/09 site rep. report). This plan states that B&W will complete the following actions during the remainder of FY 2010:

- Perform a gap analysis of the sitewide QA program versus NQA-1-2008 requirements,
- Revise the sitewide QA program, associated training and implementing procedures, and
- Conduct facility-specific adherence evaluations and develop facility-specific implementation plans.

B&W has also issued a new procedure for procuring safety-related systems, components, and services. The cornerstone of this new process is for procurement engineers to develop Technical Evaluation and Acceptance Plans (TE&APs). The purpose of the TE&APs is to ensure that B&W validates the safety function of systems and components by identifying critical characteristics during procurement activities and verifying those critical characteristics during acceptance activities. B&W plans to fully transition to the new procurement process by August.

**Excess Facility Cleanup and Disposition.** In response to feedback provided by the site reps., B&W recently issued a revised safety strategy for performing work associated with the American Recovery and Reinvestment Act (see the 10/30/09 site rep. report). B&W's revised strategy and implementing plans now require facility operations personnel to oversee the start of new activities (including sub-contractor work) in addition to periodic floor manager oversight.