**DEFENSE NUCLEAR FACILITIES SAFETY BOARD**

September 5, 2008

TO: Timothy Dwyer, Technical Director
FROM: Donald Owen and David Kupferer, Oak Ridge Site Representatives
SUBJECT: Activity Report for Week Ending September 5, 2008

Board member Joseph Bader and staff members Grover, Gutowski, and Kasdorf visited Y-12 to review design efforts for the Uranium Processing Facility. The staff also reviewed recent test results applicable to storage rack fasteners in the Highly Enriched Uranium Materials Facility.

**Uranium Processing Facility (UPF).** UPF project personnel briefed Mr. Bader and staff on preliminary design progress by B&W and its subcontractors. The third Basic Ordering Agreement (BOA), covering process design, is to be awarded in the next few weeks and the subcontractor(s) mobilized by November at which point the entire design team will be assembled. Some items discussed during the visit include: (1) in response to discussion on roles, responsibilities and interfaces among B&W and BOA subcontractor design personnel, B&W management indicated that B&W will develop a document defining such roles, responsibilities and interfaces; (2) systematic identification and protection of assumptions and initial conditions in various design calculations and other analyses was not apparent; (3) in-process solid and liquid storage capacity that allows for appropriate operational flexibility including safe shutdown was not apparent; and (4) responding to prior staff inquiry (see the 5/9/08 site rep. report), B&W is implementing a new requirement calling for process/system engineers in Y-12 operating facilities to document and formally transmit information on operational events or other experience that could be useful to UPF design or operational planning.

**Warehouse Characterization Activity.** More than two years ago, as part of efforts to transfer materials from the Warehouse, B&W developed plans to characterize a number of uranium metal items that might be contaminated with plutonium. B&W has conducted this activity as a two-phase project. The first phase involved using a temporary glovebag to characterize items that were stored in unsealed lockboxes. A contractor Readiness Assessment for this activity was completed in May 2006. Results of characterization activity indicated no plutonium contamination (see the 6/01/07 site rep. report). The second phase, which is expected to begin next week, involves using a temporary glovebox to process items that are stored in sealed containers. Due to lessons-learned from a small fire that occurred while unpacking metal items in a glovebag in September 2006, the temporary glovebox is constructed with fire-retardant Lexan windows, has a chamber with an inert environment for unpacking items, and is equipped with an exhaust system that includes High Efficiency Particulate Air filters. B&W has convened the facility Operational Safety Board and the site-wide Management Review Board to review preparations for the second phase.

**Highly Enriched Uranium Materials Facility (HEUMF).** B&W presented the results of fastener testing conducted last week regarding the incorrect installation of fastener assemblies in the safety-class storage racks for HEUMF (see the 8/29/08 site rep. report). Direct tension indicating washers had been installed for some fastener assemblies in contact with the nut instead of the bolt head or a hardened washer. B&W personnel noted to the staff and site reps. that the test data indicates that the proper tensile load in the fasteners is achieved using the turn-of-the-nut loading protocol that was implemented during installation.