

## DEFENSE NUCLEAR FACILITIES SAFETY BOARD

February 17, 2006

**TO:** J. Kent Fortenberry, Technical Director  
**FROM:** R. Todd Davis/Donald Owen, Oak Ridge Site Representatives  
**SUBJECT:** Activity Report for the Week Ending February 17, 2006

A. Highly Enriched Uranium Materials Facility. Construction work for the Highly Enriched Uranium Materials Facility (HEUMF) remained suspended this week due to construction quality issues (see site rep. reports since January 13<sup>th</sup>). At the request of BWXT management, a team of BWXT and Bechtel personnel from outside of Y-12 completed a review of HEUMF construction including review of the concrete and reinforcing steel issues, the HEUMF quality assurance (QA) program and of the flowdown of QA requirements to subcontractors. Results of this review were briefed to site management and subsequently discussed with the staff and site reps. The review team identified numerous issues and recommendations for BWXT to factor into overall corrective actions. Among the issues were:

- lack of comprehensive BWXT oversight of HEUMF construction and over-reliance on the construction contractor and its quality inspection function;
- lack of experienced/knowledgeable BWXT personnel dedicated to HEUMF construction QA;
- use of construction contractor (and subcontractor) fabrication drawings instead of BWXT design drawings of record for inspection/acceptance purposes; and
- other HEUMF QA program deficiencies in inspection personnel training and performance, and in inspection processes.

The review team also noted some instances of confusing design details in BWXT design drawings of record. The team intends to issue a report by late next week. BWXT continues to perform causal evaluations and extent of condition reviews that will be factored into overall corrective actions. Limited rebar installation and other field work not involving concrete placement are now expected to be allowed to resume next week.

B. Wet Chemistry Operations. BWXT completed restart of all wet chemistry operations in December 2004 (see 12/10/04 site rep. report). Over the last 14 months, equipment and safety basis issues continue to preclude these systems from achieving a sustained operational tempo. Such operational issues have resulted in a significant backlog of uranium solutions stored in facility tanks and safe bottles. These solutions are nearing the solution storage capacity for the Enriched Uranium Operations building.

For the primary extraction system, which is used for processing a significant portion of the facility solutions, equipment problems (e.g., pump failure) prevented operations for approximately 6 months. Equipment issues were resolved in January; however, subsequent system plugging problems were encountered and are currently being resolved. As noted on December 16<sup>th</sup>, secondary extraction operations have been suspended because of the Unreviewed Safety Question associated with the concentration of organics. BWXT now plans to submit a Justification for Continued Operations next week that will support near-term operations with additional controls (e.g., sampling). BWXT engineering is evaluating system modifications to support long-term secondary extraction operations.