

## DEFENSE NUCLEAR FACILITIES SAFETY BOARD

October 14, 2005

**TO:** J. Kent Fortenberry, Technical Director  
**FROM:** R. Todd Davis/Donald Owen, Oak Ridge Site Representatives  
**SUBJECT:** Activity Report for Week Ending October 14, 2005

A. Chip Oxidation Process. BWXT has now completed the test program to resolve concerns with excessive vessel temperatures that led to a vessel failure (i.e., burn through) earlier this year. The test results are being evaluated to identify the appropriate parameters for safe/efficient process operations. In addition, BWXT engineering continues to evaluate the dry vacuum system to address the carryover of material to the system pre-filters. System modifications will likely be required.

B. Non-Destructive Assay. YSO and BWXT personnel met with staff members E. Elliott and W. Yeniscavich and the site reps. this week to review the NDA program, including details of the non-conservative estimates for a pre-filter associated with the chip oxidation process, and filter replacement protocols (see 9/23/05 site rep. report). BWXT noted that the NDA technique used for the pre-filter associated with the chip oxidation process did not adequately account for geometry and self-shielding. NDA personnel stated that they continue to refine these techniques to provide best estimate in-situ material holdup values. BWXT is also reviewing other survey locations to determine if similar geometry and self-shielding conditions exist. With regards to filter replacement protocols, BWXT stated that they are considering the use of filter differential pressure and filter time-in-service as criteria for replacement.

C. Disassembly Glovebox. BWXT has installed a new glovebox in the assembly/disassembly building to provide the capability to disassemble selected weapon component assemblies in a controlled atmosphere. This week, the contractor Readiness Assessment (RA) was started to review management systems, personnel, procedures and equipment. Potential issues identified to date include incorrect installation of glovebox o-rings, dimensional inspection of transfer carts for criticality safety compliance, and accuracy of some drawings and process system diagrams. All of the operational demonstrations could not be completed this week because of an equipment problem. The RA team will likely conclude their review next week.

D. Purification Facility Startup Preparations. Following YSO line management verification efforts (see 9/9/05 site rep. report), the NNSA RA was conducted over the last two weeks with results provided to Y-12 management. The NNSA RA team noted that operational demonstrations, personnel performance and procedures were generally satisfactory. Several pre-start findings were identified, however, regarding the Startup Plan, installation of flexible electrical conduits, and maintenance work planning among others. The numerous improperly installed flexible electrical conduits involve bends with curvature radii substantially less than the manufacturer's minimum specification. Resolution of the findings is in progress.

E. Activity-Level Work Planning. Regarding the NNSA RA pre-start finding noted above on maintenance work planning, the NNSA RA team identified that most job hazard analyses (JHAs) and associated job instructions reviewed by the team had lack of clear identification of safety hazards and controls. The RA team noted many instances of generic identification of hazards and controls (often not applicable to the task) in the JHAs. This finding is another in a series of issues raised regarding implementation of activity-level hazard analysis including those from the recent DOE Office of Independent Oversight and Performance Assurance review (see 9/16/05 site rep. report) and going back to the issues noted in the Board's letter of May 21, 2004 regarding activity-level work planning at NNSA sites.