

## DEFENSE NUCLEAR FACILITIES SAFETY BOARD

September 16, 2005

**TO:** J. Kent Fortenberry, Technical Director  
**FROM:** R. Todd Davis/Donald Owen, Oak Ridge Site Representatives  
**SUBJECT:** Activity Report for Week Ending September 16, 2005

A. Chip Oxidation Process Filter - Followup. As noted in August (see 8/19/05 site rep. report), BWXT removed and evaluated a pre-filter associated with the chip oxidation operation based on high differential pressure indications. Initial non-destructive assay (NDA) of the filter indicated significantly higher uranium loading than in-situ NDA (785 grams versus 170 grams). Subsequent laboratory analysis now indicates that the filter was loaded to greater than 1800 grams (i.e., more than 10 times the in-situ holdup estimate). BWXT is evaluating the in-situ and initial assay techniques used for this filter to determine the reason for this discrepancy and appropriate corrective actions. In addition, BWXT continues to evaluate the holdup survey program to ensure other non-conservative estimates are not being used.

For the chip oxidation process, ten test runs have been completed with various chip loadings and oxygen flow rates to evaluate vessel temperature and process performance. Testing continues to indicate that this activity can be completed at significantly lower vessel temperatures and achieve satisfactory product material and run times. The pre-filter discussed above was replaced with a new filter prior to beginning the chip oxidation test program. Over the course of the ten test runs, the filter differential pressure has steadily increased indicating that the replacement filter is likely being loaded with uranium material during dry vacuum operations. Based on these indications, the filter was removed this week and will be evaluated. BWXT is also evaluating the dry vacuum system design, which includes two cyclone separators upstream of the pre-filter, and flow velocities to determine if the system is functioning properly.

B. Independent Oversight Review at Y-12. This week, a DOE Office of Independent Oversight and Performance Assurance (OA) team completed a factual verification visit related to the recent biennial review of Y-12 environment, safety and health program implementation. The team provided a draft report at the conclusion of the visit and briefed Y-12 management on results. Several strengths were noted in YSO and BWXT implementation of Integrated Safety Management, including improvements since the last OA review. The team also identified several weaknesses warranting corrective action. Among the weaknesses were: (1) lack of effective implementation of activity-level hazard analysis and lack of effective identification of controls (including communication of controls to workers) (2) lack of specific work task definition to support activity-level hazard analysis and improper categorization of some work resulting in a lower level of work planning than required; (3) lack of effective implementation of radiological hazard evaluations and radiological work permits written to cover broad, generic work scopes with insufficient clarity for use on specific work tasks; and (4) lack of effective issues management in ensuring proper evaluation, resolution and recurrence prevention of deficiencies. The OA report is to be finalized in the next few weeks.

C. Highly Enriched Uranium Materials Facility. In a Board letter dated June 22, 2005, concerns were identified with electrical cable ampacity derating for penetration seals. This week, the site reps. met with YSO and BWXT to discuss this issue. BWXT has now completed a report evaluating penetration seals and cable ampacity derating that concludes satisfactory cable performance. Based on this evaluation, BWXT also identified a design change to some penetration seals. This report is being provided to the staff for review.