

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

May 5, 2006

TO: J. Kent Fortenberry, Technical Director
FROM: R. Todd Davis/Donald Owen, Oak Ridge Site Representatives
SUBJECT: Activity Report for the Week Ending May 5, 2006

A. Vacuum Pump Filter - Criticality Safety. As noted last week, BWXT identified a criticality deficiency based on indications of excessive enriched uranium hold-up in a filter housing (nominally 1.4 kg) associated with casting furnaces in the Enriched Uranium Operations Building. Based on direction from nuclear criticality safety engineering personnel, the filter housing was isolated and the area was placed under administrative control. In addition, due to the potential for vacuum pump oil (a moderator) to be present, the filter housing drain valve was directed to be opened to ensure that any liquid would not accumulate in the housing. When the drain valve was opened last week, operators did not identify any liquid release from the housing. BWXT had also declared a Potential Inadequacy in the Safety Analysis because they could not confirm double contingency for the filter housing configuration. BWXT personnel noted that lack of moderation was being maintained by isolating the housing and maintaining the drain valve open.

On Wednesday, an operator in the area identified oil (approximately one quart) beneath the filter housing drain valve. Operators responded appropriately by contacting the shift manager and actions were taken to discontinue operations that might impact this system (i.e., casting activities using other vacuum pumps in the area). Additional administrative controls were taken to prevent personnel access. On Thursday, BWXT obtained a sample of the oil for uranium analysis, with results expected by late-Friday. Nuclear criticality safety engineering continues to evaluate the system and is developing a technical basis to support safely approaching the filter and remediating the situation. As of Friday, BWXT had not declared an Unreviewed Safety Question; however, a decision will likely occur early next week, which should be followed by a Justification for Continued Operation and YSO approval to proceed.

B. Y-12 Conduct of Operations. As reported on April 21st, the site reps. discussed observations with YSO and BWXT management on corrective actions to events involving violation of a restriction on liquid transfers and failure to isolate a steam condensate system in the Enriched Uranium Operations Building. Specifically, that lessons learned from the events may be appropriate for communication across other nuclear facilities and that training materials did not address the specific problems identified from the steam condensate isolation event. In discussion with YSO this week, BWXT management noted that actions to communicate lessons learned across all nuclear facilities are being developed. One of the actions being developed is to have various operating organizations take a day later this month to conduct special training on procedure use and communications issues from these events.

C. Oxide Conversion Facility. This week, BWXT successfully completed conversion of the third batch of uranium oxide to uranium tetrafluoride. Consistent with the startup plan, a test procedure, with a test engineer, has been used for these initial operations. BWXT management noted that the test engineer will continue to be present as the appropriate parameters (e.g., temperature and soak time) are identified for incorporation into the operating procedures.