

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

December 21, 2007

TO: J. Kent Fortenberry, Technical Director
FROM: R. Todd Davis/Donald Owen, Oak Ridge Site Representatives
SUBJECT: Activity Report for Week Ending December 21, 2007

A. Secondary Extraction. During a pre-use inspection for a secondary extraction run, operators questioned the appearance of a sample obtained from the bottom of the phase separator in the raffinate line. Even though the sample met the procedural specific gravity requirement, investigation revealed that the sample was a heavy organic material instead of an aqueous solution as would be expected. The raffinate phase separator is a safety-significant control that helps prevent a red-oil reaction in downstream evaporator operations. Secondary extraction operations had been shutdown in December 2005 because of an Unreviewed Safety Question associated with the presence of heavy organic materials that prevented the organic phase separators from performing their safety function. A Justification for Continued Operations (JCO) was developed and approved that required additional sampling (including this sample) both before and after system operation. Based on the presence of the heavy organics in the raffinate this week, secondary extraction and downstream evaporator operations were suspended pending investigation, including review of the adequacy of the JCO controls.

B. Uranium Holdup Survey Program/Criticality Safety. As noted on November 21st, the site reps. had questioned the need for facility line management to track and ensure completion of uranium holdup surveys that are required by applicable facility Criticality Safety Evaluations (CSEs). Previously, facility line management had used the facility surveillance tracking system to ensure compliance with CSEs; however, the site rep. noted that this practice was discontinued recently at the Enriched Uranium Machining Building. Instead, the surveys were being tracked by Uranium Holdup Survey Program (UHSP) personnel. Responding to prior site rep. inquiry, B&W personnel noted their intention to reestablish line management tracking to ensure survey completion. The UHSP will continue to drive survey completion but will provide information to line management for tracking and ensuring compliance with facility CSEs.

C. Conduct of Operations. As followup to the Y-12 Conduct of Operations improvement initiative earlier this year, B&W management decided that periodic (about three times per year) reinforcement training on fundamental Conduct of Operations principles for nuclear operations personnel will be conducted. B&W management has also developed actions responding to a recent Warehouse event where a shearing machine safety interlock was bypassed. The cause was found to be an unauthorized and unreported maintenance action by operators who had improperly reattached a loose electrical wire (see the 11/30/07 site rep. report). These actions include a communication by senior B&W management to all Y-12 nuclear operations personnel on the need to properly stop and report abnormal situations during nuclear operations.

D. Oxide Conversion Facility Restart. B&W had planned to perform an integrated dry run of the conversion process preparatory to the B&W and YSO Readiness Assessments (RAs, see the 12/07/07 site rep. report). Due to incomplete surveillances, the integrated run was not performed but is now planned in early-January. The concurrent B&W and YSO RAs are now projected to start in late-January. The site rep. observed a drill simulating a hydrogen fluoride release at the system vaporizer. While the RAs have not formally started and the (joint) RA Plan-of-Action was not yet approved by YSO, the drill was performed for demonstration purposes to the B&W and YSO RA teams. The RA teams' evaluation of the drill demonstration is in progress.