

# DEFENSE NUCLEAR FACILITIES SAFETY BOARD

January 31, 2003

**TO:** J. Kent Fortenberry, Technical Director  
**FROM:** Tim Hunt, Oak Ridge Site Cognizant Engineer  
**SUBJ:** Activity Report for Week Ending January 31, 2003

Staff member Don Owen was on site this week providing site representative coverage. Staff member Carter Shuffler and outside expert Ralph West were on site to observe the NNSA Operational Readiness Review (ORR) for Wet Chemistry Restart in Y-12 Building 9212. Staff member Dermot Winters observed waste management activities at Melton Valley.

A. BWXT Y-12 Enriched Uranium Operations (EUO) Wet Chemistry Restart Preparations: The staff and site representative observed conduct of the NNSA ORR that started this week. The team consists of a team leader and 11 members covering 8 functional areas. All members are experienced and appear to be conducting a thorough review of their areas. Wet chemistry operations observed by the staff and site representative included primary extraction, oxide dissolver, primary intermediate evaporator, and denitrator, as well as various sampling, surveillance, and test operations. The operational demonstrations were generally satisfactory and continued to indicate a marked improvement in the areas of conduct of operations, operator knowledge, equipment performance, and the clarity of operating procedures since the initial contractor ORR completed in October 2002. The team is focusing on several potential issues, including: the unreviewed safety question screening process; the structure of some alarm response and abnormal operating procedures; an uncontrolled modification to the back of a process control cabinet; and problems with the software that controls the speed of the secondary extraction contactors. The NNSA ORR is expected to be completed by February 7th. The site representative and staff reviewed the NNSA Y-12 Site Office (YSO) plans for oversight of initial operations following startup authorization. The plans essentially rely on YSO facility representative monitoring of operations with little support required by other YSO personnel, including YSO subject matter experts designated under Recommendation 2000-2. The site representative and staff discussed this issue with YSO management who indicated they would review these oversight plans. (2A)

B. BWXT Y-12 EUO Reduction: As reported January 17th, the fifth reduction run had been started. This week, the site representative observed the button knockout evolution which was conducted in accordance with the procedure and conduct of operations principles. This reduction run produced a usable button, though a small segment of the button separated during the knockout operation. A decision on the replacement vessel design and construction materials to support long-term reduction operations will be finalized after completion of 32 test runs. (2-A)

C. Oak Ridge Radioactive Waste Management: The staff observed processing activities for surrogate supernatant waste at the Melton Valley TRU/Low Level Waste Project (MVTWP) facility. The bag-out of powdery supernatant product presents the highest potential hazard to worker safety from airborne contamination. The second bag-out of surrogate product was postponed due to problems including leakage of condensed surrogate supernatant from the dryer, bridging of dried product above the dryer's product discharge valve, and leakage of dried product around the bag-out o-ring seals into the load-out bay. An analysis of causes and determination of corrective actions are pending. The bag-out activity may ultimately require load-out bay workers to wear respirators during dryer discharge. (3-A)