

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

August 11, 2006

TO: J. Kent Fortenberry, Technical Director
FROM: R. Todd Davis/Donald Owen, Oak Ridge Site Representatives
SUBJECT: Activity Report for Week Ending August 11, 2006

A. Special Material Capability Project. This week, a NNSA headquarters-sponsored External Independent Review (EIR) team began their project review. This project is part of Y-12 modernization and will provide a new capability that implements engineered controls to minimize hazards to workers. The project will install a new negative-pressure glovebox and associated filtered exhaust systems in an existing Y-12 facility. BWXT completed the conceptual design for this project last year, with Critical Decision-1 approved in June 2005. The EIR team is reviewing the project to support approval of the performance baseline and readiness to proceed with long-lead procurement (i.e., Critical Decision-2/3A). The current project schedule includes glovebox installation in 2008 and initial operations in 2010.

B. New Enriched Uranium Operations Glovebox. As previously reported (see the October 7th and April 28th site rep. reports), BWXT was completing installation of a new glovebox to perform blending of enriched uranium materials. Safety basis changes, including a new safety-significant sprinkler system, have been approved by YSO. This week, BWXT started their Readiness Assessment (RA) of the new glovebox. The site rep. observed the main RA demonstration of the blending operation. The RA team noted the RA demonstrations to be generally satisfactory but the team is pursuing a number of issues in areas such as configuration management and the criticality safety evaluation.

As noted on October 7th, BWXT criticality safety engineering personnel had observed that the approach to load the blending vessel was not consistent with other such blenders and identified that it could not be assured that a criticality would be prevented in the unlikely event of water intrusion filling the vessel during loading. In response, a design change to reduce internal volume of the blending vessel (add an internal spacer to the vessel end caps) was necessary to prevent a criticality during such an event for the allowed material loading.

C. Conduct of Operations/Feedback and Improvement. As reported last week, following YSO inquiry, BWXT was to conduct a critique on an Oxide Conversion Facility event. The event involved removal of foreign material noted in a feed can from the glovebox without bagging-out the material; following this action, a radiological airborne monitor alarmed. During the critique this week it was determined that the material was removed by an operator without procedural coverage or supervisory permission. Several other issues were identified including lack of timely recognition of the alarm, evacuation routing of certain personnel in the direction of the affected area, and other command/control/communications deficiencies. YSO is also inquiring on a possible safety basis violation concerning minimum staffing. Further investigation and development of corrective actions is in progress.

D. Upcoming Reviews. A team of BWXT and Bechtel personnel from outside of Y-12 will conduct a follow-up review next week on the Quality Assurance (QA) deficiencies identified earlier this year for the Highly Enriched Uranium Materials Facility as well as site-wide QA corrective actions (see the 2/17/06 and 4/7/06 site rep. reports). In addition, the NNSA Office of the Chief of Defense Nuclear Safety will begin its two-week review of Y-12 safety management next week.