

## DEFENSE NUCLEAR FACILITIES SAFETY BOARD

TO: Timothy Dwyer, Technical Director  
FROM: Wayne Andrews and David Kupferer, Site Representatives  
SUBJECT: Oak Ridge Activity Report for Week Ending February 18, 2011

**Building 9212 Facility Risk Review (FRR)/Safety Analysis.** In response to a Board letter dated November 28, 2005 regarding structural and maintenance-related deficiencies of Building 9212, Y-12 personnel completed a FRR in 2006 that identified facility upgrades and other actions necessary for the continued safe operation of Building 9212 (see the 8/27/10 report). The evaluation period associated with the FRR was 15 years, based on an assumption that operations could be transitioned from Building 9212 to the Uranium Processing Facility by 2021. Last month, YSO initiated an effort to validate the adequacy of the recommendations and conclusions the 2006 review. Specifically, YSO directed that a team of subject matter experts from YSO, B&W, and DOE Headquarters perform the following tasks by April 29, 2011:

- review progress made in executing the recommendations of the initial FRR,
- reevaluate the condition of the facility and utility/process systems based on 'new' operating and maintenance data, in-field inspections, and reliability studies,
- identify alternate production strategies that may be required to respond to unexpected system degradations that could cause limited operational capability or shutdowns,
- identify potential risk mitigation strategies such as accelerating production schedules (i.e., preproduction of deliverables), relocating operations, or using alternate suppliers,
- evaluate the potential barriers to reestablishing skills and capabilities after a prolonged shut-down of individual enriched uranium processing capabilities, and
- revise the FRR to include updated assumptions and recommendations.

In December, YSO approved an annual update of the Safety Analysis Report for Building 9212 and stated that (a) the material-at-risk quantities used in the accident analyses are overly conservative and (b) the safety categorization (i.e., safety-class, safety-significant, and defense-in-depth) of controls to mitigate or prevent design basis accidents (e.g., the fire suppression systems) could potentially be downgraded (see the 12/31/10 report). YSO directed B&W to develop a plan for updating the accident analyses to include updated consequence assessment parameter values (e.g., Airborne Release Fractions and Damage Ratios) and material-at-risk quantities. This week, B&W submitted its plan to YSO. B&W's plan proposes a two-phase approach. The first phase, to be completed by December 2011, would include updating the material-at-risk assumptions in the accident analyses. The second phase, to be completed by October 2015, would include updating the consequence assessment parameter assumptions. B&W anticipates that the first phase will not result in significant changes to either dose or risk estimates and, therefore, will not result in changes to the safety categorization of controls.

**Storage Operations/Recommendation 2004-2.** This week, consistent with DOE's Implementation Plan for Recommendation 2004-2, *Active Confinement Systems*, B&W submitted its confinement ventilation system evaluation for Building 9720-5 to YSO (see the 11/26/10 report). B&W's evaluation identifies significant gaps between the mandatory performance criteria (contained in DOE's *Ventilation System Evaluation Guidance*) and the existing ventilation systems. The ventilation systems in Building 9720-5 were not designed to act as an active confinement system, nor are they credited as safety-significant or safety-class in the applicable Safety Analysis Report. B&W's report notes that the existing ventilation system could not be modified to provide active confinement; rather, a new system would need to be installed if an active confinement capability were required.