

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

December 12, 2008

TO: Timothy Dwyer, Technical Director
FROM: Donald Owen and David Kupferer, Oak Ridge Site Representatives
SUBJECT: Activity Report for Week Ending December 12, 2008

Building 9212 Facility Risk Review. Y-12 management briefed the Board, staff and site reps. on progress with Building 9212 Facility Risk Review activities. B&W discussed recent actions to improve the safety posture of Building 9212 including: reducing the material-at-risk in safe bottle solutions; replacing/upgrading older equipment including electrical panels, roofing, and ventilation systems; increasing processing equipment availability; and, removing about 350 tons of waste from the facility. B&W also noted the recently issued Building 9212 Operations Plan, which is intended to help prioritize and integrate facility maintenance and operations until the Uranium Processing Facility is operational. The plan describes risk-mitigating actions that are planned over the next three years. B&W intends to update this plan annually.

Uranium Processing Facility (UPF). NNSA Headquarters recently provided interim budgetary guidance on current fiscal year funding for UPF (see the 10/31/08 site rep. report). As a result, YSO has directed B&W to continue preliminary design efforts consistent with the UPF project plan through March 2009 at which time additional guidance will be provided.

Criticality Safety. The Inadvertent Accumulation Prevention Program (IAPP) is a significant corrective action that B&W initiated in response to uranium holdup issues in a vacuum pump filter in 2006. The initial phase of IAPP—to review fissile material processes that rely on uranium holdup surveys for criticality safety—was completed earlier this year (see the 2/22/08 site rep. report). B&W has been making progress to implement the recommendations from the initial phase of the IAPP, which include identifying new holdup survey locations, increasing the frequency of some surveys, new periodic clean-outs, and establishing new periodic filter replacement schedules. B&W has completed more than 20 of approximately 140 IAPP recommendations. B&W is currently planning to complete the remaining actions by mid-2010.

Furnace Reduction Operations/Conduct of Operations. Engineering and safety basis evaluation of the damage to two reduction reactor vessels continues (see the 11/21 and 12/05 site rep. reports.). No such damage had been observed from numerous prior reduction runs since use of the new vessel design began in 2005. B&W engineering personnel noted to the site reps. that the damage is a melting of the base metal surface in localized areas caused by hot vapors coming from the cylindrical crucible in the vessel. B&W is evaluating interaction of vapors and the pre-loaded cover gas in the headspace (e.g., effect of crucible height in the vessel) and possible causes of leakage of the cover gas.

Due to the deficient reporting of the damage to this safety-significant equipment in September and lack of a formal hold on furnace reduction operations until mid-November, the site reps. had inquired on any actions to reinforce the need for proper reporting of such unexpected conditions. B&W management stated that such reinforcement training, using this damaged reactor vessel event as a case study, is to be conducted with production operations and facility shift management personnel during the next few weeks. The training is to emphasize the need for clear communications, questioning attitude, and proper use of the internal Initial Event Information report.