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 May 4, 2012

Building 9212 Operations. Equipment, safety basis, and funding issues have recently resulted in the suspension of several operations in Building 9212. To date, these operational impacts have not effected production deliverables (e.g., shipments of naval fuel material and weapon components).

Two weeks ago, B&W suspended Holden Gas Furnace (HGF) operations after discovering abnormally high pressures in the natural gas supply line while conducting an annual surveillance requirement. B&W subsequently reported a positive Unreviewed Safety Question due to the possibility for high natural gas pressures to preclude the flame management system from performing its safety-significant function of preventing a natural gas explosion in the HGF. Prior to resuming operation of the HGF, B&W is planning to install a flow restricting orifice in the gas supply line and revise the safety analysis.

Last week, a pump associated with Oxide Dissolver operations failed and sprayed a small amount of enriched uranyl nitrate solution onto a nearby operator. The skin contamination associated with this event (very small quantities on each cheek of the worker) was below DOE reporting thresholds; however, B&W externally reported this event as a management concern due to the premature failure of the pump. Prior to resuming Oxide Dissolver operations, B&W plans to perform an engineering evaluation of the pump design and protective features to identify improvements that could prevent recurrence of this event.

Last year, B&W issued a two-phased project execution plan to modify the denitrator system and reduce the risk of worker exposures while canning uranium oxide product from the product receiver (see the 7/15/11 report). In March, B&W suspended denitrator operations to complete the first phase of its plan by raising the product receiver approximately 2 feet, which should preclude the necessity to re-can the uranium oxide prior to transferring the material to the Oxide Conversion Facility. Activities associated with the second phase of the plan—to replace the existing pneumatic transfer line and resume transferring denitrator product to the canning hood—remain unfunded and unscheduled. B&W expects to resume denitrator operations next week.

In January, B&W discovered a leaking joint in one of the primary extraction columns. B&W immediately suspended primary extraction operations pending joint replacement, which B&W plans to accomplish next week.

Highly Enriched Uranium Materials Facility (HEUMF). Last month, B&W submitted to YSO for approval the annual update to the HEUMF Documented Safety Analysis (DSA) and associated Technical Safety Requirements (TSRs) and a Safety Basis Supplement (SBS) to the DSA (see the 12/2/11 report). The revision to the DSA and TSRs included minor improvements and corrections. The SBS provides analysis of toxicological consequences and associated controls that B&W deleted from its first annual update of the DSA (see the 5/20/11 report). In January 2012, YSO approved for B&W to postpone making the following improvements to the DSA until YSO concurs on the consequence analysis parameter values to be used: (a) an improved basis for the unmitigated fire, (b) evaluation of a small fire that would not be large enough to activate the fire suppressions system, and (c) a more detailed discussion of the functional requirements for the fire suppression system (see the 7/29/11 report). As YSO has not yet concurred on these values, it is uncertain when these improvements to the DSA will be made.