

## 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 September 9, 2011

**ORNL Tank W-1A.** UCOR initiated soil removal operations on Thursday (see last week's report). ORO expects this activity to be completed within a few months.

**Water Ingress.** There was excessive rainfall in Oak Ridge on September 4<sup>th</sup> and 5<sup>th</sup> that resulted in rain water entering various contamination areas in Buildings 9212 and 9215 (see the 12/3/10 report). Due to the accumulation of standing water amongst fissile material storage arrays and processing equipment, B&W formally declared several 'back-off' situations and obtained approval from criticality safety personnel prior to re-entering the affected areas.

**Uranium Processing Facility (UPF).** Last week, B&W completed its 'vertical slice' review of the UPF project to specifically evaluate whether safety-related systems, structures and components have been (a) adequately identified in safety basis documentation and (b) adequately incorporated into process and facility design documents. In general, the review team concluded that the objectives above have been met. The review team identified 34 observations including the following: (a) the corridor between UPF and the Highly Enriched Uranium Materials Facility presents a theoretical avenue for communication of accident events between the facilities, (b) the safety functions and functional requirements of the fire suppression and detection systems need to be better defined, and (c) in order to properly support the Preliminary Documented Safety Analysis (PDSA), the fire hazards analysis will need to be updated in parallel with development of the PDSA.

**Building 9204-2E Operations.** This week, the site representatives observed B&W's Readiness Assessment (RA) for startup of a component disassembly operation last performed approximately ten years ago. The RA team concluded that the prerequisites were met for safe startup of operations. The RA team identified one weakness and nine observations including several recommendations for improving the operating procedure. The site representatives noted to production management that additional procedural direction regarding operator actions for ensuring the proper use of equipment for lifting nuclear components may be warranted (see the 8/12/11 report).

**Safety Analysis Research.** B&W obtained funding in June to resume its research on airborne release fraction (ARF) and respirable fraction (RF) values of uranium metal in a fire environment (see the 4/1/11 report). B&W expects to complete equipment testing next month. Based on the results of this testing, B&W will revise its test plan. B&W plans to initiate tests involving depleted uranium coupons in November or December.

**Microwave Casting.** B&W has installed the new production microwave casting unit in Building 9212 and has been conducting startup testing of the equipment for the past few months (see the 8/5/11 report). B&W identified several issues during testing. Trouble shooting the various technical issues will continue next week and B&W's Readiness Assessment is currently scheduled to begin the week of September 19<sup>th</sup>. Procurement of microwave casting units for UPF has been placed on-hold pending the outcome of this startup and incorporation of lessons learned.