

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 July 15, 2011

Uranium Processing Facility. This week, B&W submitted the full-scope Preliminary Safety Design Report (PSDR) to YSO for approval (see the 6/17/11 report). To support issuance of the PSDR, B&W also recently issued the following documents: (a) the preliminary fire hazards analysis (see the 5/20/11 report), (b) the criticality control review document, and (c) a design analysis calculation regarding the deposition velocity for uranium particulates. As part of the formal corrective action plan it developed in response to NNSA's 'vertical slice' review (see the 4/1/11 report), B&W committed to perform its own 'vertical slice' review of the UPF project. B&W expects to initiate this review on Monday.

Wet Chemistry Operations. Several years ago, denitrator operations included pneumatically transferring uranium oxide—the product of denitrator operations—from the denitrator product receiver to a ventilated hood for canning. Five years ago, the subject transfer line became plugged, its use was abandoned, and operators began canning the uranium oxide directly from the product receiver while wearing respirators. During this task, because the product receiver is at knee level, operators in respirators must kneel or bend over to can the uranium oxide. Last month, B&W issued a project execution plan to modify the denitrator system with the goal of reducing the potential for worker exposures during canning operations (see the 5/21/10 report). B&W's plan includes two phases: (1) modify the denitrator system configuration to raise the product receiver to approximately hip level and (2) replace the existing transfer line and resume transferring denitrator product to the canning hood. B&W's plan states that phase one is to be completed by the end of this calendar year. Phase two activities are currently unfunded and unscheduled.

Storage Operations/Safety Analysis/Implementation Validation Reviews (IVRs). In May, YSO approved B&W's revised Safety Analysis Report (SAR) for Building 9720-5 (see the 5/20/11 and 5/13/11 reports). This week, B&W conducted its IVR to independently confirm implementation of safety basis controls associated with the revised SAR. The IVR team identified 5 findings including several issues in the Technical Safety Requirements (TSRs). The site representatives again note that recent IVRs have identified similar issues related to the quality of TSRs (see the 7/1/11 report). Next week, B&W expects to initiate its readiness assessment for the new Building 9720-5 storage mission.

Nuclear Detection & Sensor Testing Center (ND&STC) in Building 9204-2E. A Management Review Board (MRB) meeting was held this week to review the ND&STC's request to perform daytime operations for Active Interrogation measurements. Initial start-up operation for off-shift operation was reviewed and approved by the MRB on October 6, 2010 (see the 1/28/11 report). The controls currently in place assume an upper limit for the DT-Neutron generator of 2×10^8 neutrons/second. Operations will be conducted at much lower outputs (i.e., 50% of the max output allowed). Of special interest to the MRB was the completion of the ALARA committee review. This review recommended approval during day-time hours pending the completion of four actions that were summarized for the MRB. In general, the MRB felt that the radiological hazards had been properly identified, analyzed, and that the proper controls were in place to protect personnel within the building during day-time operation. After detailed discussion, the MRB identified four issues/actions that when completed would support day-time operations. It is anticipated that these actions will be completed to the MRB's satisfaction in the very near future.