

## DEFENSE NUCLEAR FACILITIES SAFETY BOARD

October 31, 2008

TO: Timothy Dwyer, Technical Director  
FROM: Donald Owen and David Kupferer, Oak Ridge Site Representatives  
SUBJECT: Activity Report for Week Ending October 31, 2008

Staff members Elliott, Forsbacka, Gerlach, and Minnema visited Y-12 to review criticality safety evaluations and controls associated with the Highly Enriched Uranium Materials Facility and the primary extraction raffinate stream in the Enriched Uranium Operations Building.

**Highly Enriched Uranium Materials Facility (HEUMF):** The staff and site reps. reviewed and discussed the technical basis information for the design of the HEUMF Criticality Accident Alarm System (CAAS). The HEUMF CAAS was the subject of a recent NNSA Headquarters review that concluded that a sufficient basis likely exists to meet the minimum accident of concern in applicable ANSI/ANS standards and that use of an alternate accident basis should be abandoned (see the 9/19/08 site rep. report). B&W noted that their analysis to date confirms that the CAAS meets applicable ANSI/ANS standards. Several documents containing HEUMF CAAS design analysis and information are being combined into one design report that is to be completed by December.

B&W also presented the basis for the designated Immediate Evacuation Zone (IEZ) that defines the required area for notification that a criticality alarm has activated. B&W noted that their analysis shows that the IEZ can be defined to be bounded by the outer walls of the HEUMF storage area plus loading and truck bay areas (see the 6/22/07 site rep. report). B&W stated that due to the heavy shielding provided by the HEUMF structure, the HEUMF IEZ readily meets the required maximum dose equivalent of 12 rads in free air.

**Uranium Processing Facility (UPF):** The constraints of the Continuing Resolution, which governs DOE's budget for the current fiscal year, have the potential to impact the UPF project. This week, YSO directed B&W to continue UPF preliminary design efforts consistent with the planned project schedule. NNSA Headquarters is expected to provide additional budgetary guidance for UPF by late November.

**System Configuration Control/Conduct of Operations:** In response to Lockout/Tagout (LO/TO) errors during the past year and a recent B&W LO/TO assessment (see the 9/19/08 and 10/3/08 site rep. reports), B&W has issued a Standing Order to improve LO/TO execution. The Standing Order directs engineering managers to designate engineers that will be required to walkdown the applicable system(s) and assist the LO/TO issuing authority in determining the appropriate LO/TO isolation points prior to applying or removing lockout devices. The Standing Order also requires consultation with the Shift Manager and review of the applicable System Alignment Checklist prior to removing locking devices.

**Material Storage and Movement:** During the past few years, B&W has on several occasions discovered material in a facility that had not been identified during the safety basis development and approval process. These discoveries generally were a result of material movement procedure violations or responsible personnel being alerted to types and quantities of legacy materials. B&W is currently performing a causal analysis and an extent of condition review of these issues. In particular, B&W has compared several databases used to track material inventories (e.g., safety basis, security, and facility inventories) and is in the process of walking down storage areas to identify other potential outliers. B&W expects to finalize its causal analysis during the next couple of weeks.