

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

November 9, 2007

TO: J. Kent Fortenberry, Technical Director
FROM: R. Todd Davis/Donald Owen, Oak Ridge Site Representatives
SUBJECT: Activity Report for Week Ending November 9, 2007

A. Oak Ridge Transuranic Waste Processing. As reported on October 19th, a revision to the Documented Safety Analysis (DSA) for the Transuranic Waste Processing Center (TWPC) was in development. The DSA revision addresses new activities including liquids treatment, venting of waste containers, and remote-handled transuranic waste processing. In late October, Foster Wheeler formally submitted the revised DSA to DOE-ORO. The revised DSA is intended to incorporate safety analysis and control approaches called for by DOE Standard 5506-2007, *Preparation of Safety Basis Documents for Transuranic (TRU) Waste Facilities*. The revised DSA identifies new safety-significant structures, systems and components for nuclear material confinement as well as new Specific Administrative Controls to limit nuclear material inventory. The revised DSA also addresses two new structures at the TWPC, one for storage of waste containers awaiting off-site shipment and one to accomplish the container venting activity.

This week, DOE-ORO approved the revised TWPC DSA and issued a Safety Evaluation Report. Readiness reviews for start-up of the new activities including implementation of the revised DSA controls are planned in early-2008.

B. Conduct of Engineering. In response to prior site rep. inquiry, BWXT had concluded that a revision to engineering design procedures was warranted to have project engineers call for an independent design review for smaller-scale projects based on hazards and complexity (see the 6/29/07 site rep. report). This issue resulted from a design deficiency in 2005 where a new vessel installed for blending enriched uranium materials did not ensure double contingency against criticality in a water intrusion scenario. The site rep. had suggested to YSO and BWXT management that explicit criteria may be warranted that would provide heavy weighting on nuclear process or safety system projects. This week, BWXT management stated to the site rep. that independent design reviews will be required for all nuclear process or safety system projects and applicable design procedures will be revised within the next few months.

C. Criticality Safety. As discussed last week, the site reps. and YSO questioned the lack of a formal control limiting the volume of oxide loaded in a container that would ensure the criticality safety mass limit is protected. This week, BWXT management had noted their intention to use a formal compensatory control to limit container loading. However, site rep. review of the formal control indicated that volume is not being limited but instead operators are required to weigh the container one or more times during the loading process. Such control may not be as reliable in protecting the mass limit. The site reps. discussed this observation with YSO management.

D. Conduct of Operations. On Monday, BWXT personnel at the Assembly/Disassembly Building identified that Lock-Out/Tag-Out (LO/TO) locking devices had been removed but not returned to the shift manager. These locks were reapplied pending additional investigation to ensure the LO/TO had been properly suspended. The LO/TO had been established to perform corrective maintenance on a backflow preventer associated with a facility fire water system. During a critique to review this issue, several instances were identified where personnel failed to follow Y-12 LO/TO procedures (e.g., returning locking devices to the shift manager, multiple LO/TO suspensions). As a follow-up action, the Operations Manager plans to conduct training on the appropriate use of the LO/TO procedure and issue a site lessons learned document.