

## **DEFENSE NUCLEAR FACILITIES SAFETY BOARD**

**MEMO TO:** Timothy Dwyer, Technical Director  
**FROM:** Matthew Duncan and Rory Rauch, Pantex Site Representatives  
**SUBJECT:** Pantex Plant Report for Week Ending July 8, 2011

**W76 Anomaly:** This week, Los Alamos National Laboratory (LANL) subject matter experts (SMEs) observed the W76 detonator cable assembly (DCA) anomaly firsthand and worked with B&W to develop a recovery plan. B&W, with consultation from the LANL SMEs, determined that the anomalous configuration is not bounded by the documented safety analysis. Personnel from both organizations have started working in parallel on two different recovery paths. The faster of the two paths would involve B&W applying existing weapon response for a different configuration on this program to the mitigated hazard environment for the proposed process for disassembling the remainder of this unit. The viability of this recovery path is contingent on whether B&W authorization basis personnel can make the case that this weapon response is bounding and applicable for the hazard parameters, configurations, and proposed control strategy for the anomalous unit. If the authorization basis personnel determine that the existing weapon response cannot be applied, then LANL and B&W must pursue the lengthier path, which involves LANL personnel developing and transmitting new weapon responses for the hazards presented by the remainder of the disassembly. LANL SMEs have conservatively estimated an eight week turnaround time for the new weapon response.

**Lightning Safety:** B&W recently came to terms with Boeing on a contract to perform analysis to support enhancements to the lightning hazard and accident environments described in the Sitewide Safety Analysis Report. B&W plans to use Boeing's experience in performing computer-generated models of lightning events to create a higher fidelity, facility-specific representation of the electromagnetic hazard environment generated by the design basis lightning insult to a nuclear explosive facility. B&W anticipates that these higher fidelity models will demonstrate a less severe electromagnetic environment for the majority of nuclear explosive facilities, thereby allowing the nuclear weapons complex electromagnetic committee to eliminate a larger fraction of tooling and equipment configurations as potential hazards if coupled with the calculated electromagnetic fields in proximity to the weapon.

**Limiting Conditions for Operation (LCO) Entries:** PXSO recently directed B&W to modify the technical safety requirements (TSRs) by inserting "failure to timely enter an LCO when required by entry conditions" as one of the definitions of a TSR violation. This change would make an occurrence such as the recent LCO entry event (see 6/17/11 report) a TSR violation.

**W87 Operations:** Technicians damaged a cable while sliding it through a slot in the physics package during a W87 disassembly operation. They immediately suspended operations and contacted their supervisor. B&W is awaiting instructions from Lawrence Livermore National Laboratory regarding how to proceed, but does not believe the damage to the cable will impact safety for the remainder of the operation. This issue has occurred before (see 2/26/10 report). Following that instance, tooling engineers designed and implemented a tool to help the technicians guide the cable through the subject slot, but the tight tolerance between the slot and the cable and the sharpness of the slot make it difficult to design a reliable engineered measure to prevent this cable from being damaged during this operation. Tooling engineers have stated that they will continue to seek ways to improve the process. The cable that was damaged is part of a circuit that allows technicians to verify the state of a component prior to reaching lower levels of disassembly.