

## DEFENSE NUCLEAR FACILITIES SAFETY BOARD

**MEMO TO:** J. Kent Fortenberry, Technical Director  
**FROM:** Timothy Hunt and Dave Kupferer, Pantex Site Representatives  
**DATE:** 27 July 2007  
**SUBJECT:** Pantex Plant Weekly Report

**DNFSB Staff Activity:** R. Layton was at Pantex to observe the fourth week of the Bays and Cells Nuclear Explosive Safety (NES) Master Study. A. Matteucci was onsite to provide site representative coverage.

**Bond Wires:** The Technical Safety Requirements require electrical bonds (of penetrations and roof slots to the rebar lattice in nuclear explosive facilities) to be resistance tested every five years. The testing procedure is to disconnect the bond from the facility's Faraday cage terminal prior to measuring the resistance from the terminal to facility ground. After reconnecting and tugging on the wire bond, a second resistance test is performed to measure the resistance from the bonding terminal to facility ground. Failure of the resistance testing of wire bonds demonstrates a degradation of a safety significant system that prevents satisfactory performance of its design function. To date during 2007, there have been eight occurrences of failed resistance testing of wire bonds.

**Blast Door Interlocks (BDIs):** The nuclear explosive bay structure is credited to minimize the risk associated with external events and natural phenomena. The BDIs are a critical component of the bay structure in that the BDIs help to ensure that at least one set of blast doors is normally closed. The safety basis considers bay BDIs to be a secondary safety control; the primary control is for personnel to administratively ensure that one set of doors normally remains closed. There have been several recent failures of the BDIs in nuclear explosive bays. BWXT has initiated a formal root cause assessment of the BDI failures and plans to develop a corrective action plan to upgrade the BDI systems. BWXT currently believes that the common mode reference of the power supply that supports some BDI systems is absent in the output transformer for the programmable logic controller and magnetic locks. The absence of the common mode reference results in the transformer output voltage floating and causing poor performance of the magnetic locks. A design change package has been submitted, but the work order to add the grounding reference to the transformer circuitry has not yet been accomplished.

**Pit Storage:** BWXT has requested approval from NNSA to start CD-0 for six new storage magazines in Zone 4. The current estimate is that the Pantex staging capacity for pits and weapons will be exceeded around 2014 and it will take seven years to complete the DOE Order 413.3A, *Program and Project Management for the Acquisition of Capital Assets*, process. Additional staging capacity would allow Pantex to house up to the 20,000 pit limit currently specified in the Environmental Impact Statement. BWXT evaluated other storage options—for example, using non-nuclear explosive bays in Zone 12—but determined they were inadequate to meet future staging capacity needs.

**Senior Management Team (SMT):** The SMT—which includes representatives from NNSA, BWXT, LANL, LLNL, and SNL—met in Albuquerque this week to discuss the following: schedules for implementing SS-21 for the W88, B53, and W84 programs, concerns with implementing multi-unit operations on the W76 program, plans to perform W76-1 assembly operations during the next several months, design agency interpretations of DOE Standard 3016, and the possibility of performing nuclear explosive operations in Nevada during FY2009 .