

## DEFENSE NUCLEAR FACILITIES SAFETY BOARD

**MEMO TO:** Timothy J. Dwyer, Technical Director  
**FROM:** Timothy Hunt and Rory Rauch, Pantex Site Representatives  
**DATE:** 8 August 2008  
**SUBJECT:** Pantex Plant Weekly Report

**DNFSB Staff Activity:** B. Laake was onsite this week to observe the W76 nuclear explosive safety change evaluation.

**Lightning and Electrostatic Discharge (ESD) Safety:** Lightning and ESD subject matter experts (SMEs) gathered this week to discuss the actions taken to address open lightning and ESD safety concerns. In part because of the resources being devoted to the analysis required to support resumption of W76 operations, the committee has made little progress in addressing open lightning safety concerns. First, B&W Pantex has ordered, but has not yet received a time domain reflectometer and thus has not progressed in its work to evaluate the bond wire inductance concern. Second, regarding indirect lightning effects, Los Alamos National Laboratory has had the weapon response for its systems prepared for the last several months, but has not issued an information engineering release (IER) providing formal direction to B&W Pantex. Without this IER, B&W Pantex cannot begin the process of evaluating nuclear explosive operations for the presence of potentially hazardous inductive loops. Lawrence Livermore National Laboratory is evaluating the Pantex indirect effects environment on a system-by-system basis. The analysis of the first system began in April and has not been completed. Finally, in an effort to isolate a dominant concrete spalling mechanism, a Sandia National Laboratory SME is building concrete samples designed to simulate the response of a Pantex facility to a design basis lightning strike. These tests will serve as input to an analysis of hazard presented by concrete spalling, which should be complete by the end of the fiscal year.

The ESD SMEs spent the majority of the meeting responding to questions from the W76 nuclear explosive safety change evaluation (NCE) group. This led the committee to discuss ways to operate in a more proactive mode in future meetings by establishing a consensus ESD environment and endorsing more robust long-term solutions to controlling ESD hazards.

**W76 NCE:** An NCE was held this week to authorize restarting W76 operations in a 12kV environment with new electrical testing. The NCE concluded operations were safe to restart. The NCE group identified one post-start finding indicating that no comprehensive program exists to identify or control important elements necessary to preserve the assumed 12kV ESD environment that was used in preparation of the weapon response. The NCE group deliberated whether it was sufficient that the LANL report of detonator testing was draft and the testing data was not available for review. It was concluded that the LANL test set up and testing was conservative enough for the NCE to accept LANL's draft analysis with the assurance that the final report would be issued by August 8, 2008.

**Special Tooling:** During a W80 disassembly operation, production technicians (PTs) were unable to complete a procedural step when a rotation lock failed to engage. The PTs stopped work and operations were determined to be in a safe and stable configuration. A recovery procedure was developed to safely transfer the unit to a transportation cart and operations have since resumed on the same unit with a replacement tool. A preliminary investigation has determined that an impingement of an internal component was causing excessive resistance on the rotation lock. A more comprehensive investigation is planned to determine whether tooling modifications or procedure changes are necessary.