

## 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 August 13, 2010

**DNFSB Activity:** B. Rosen observed the final week of the W84 SS-21 readiness assessment.

**Electrostatic Discharge (ESD) Floor Covering:** ESD floor coverings are technical safety requirement (TSR) design features and are required to provide a dissipative path to ground. The TSRs include an annual verification that floors measure between 100 kilohms and 100 megohms to facility ground. B&W did not perform this in service inspection (ISI) within the required periodicity for a bay, which appears to have been caused by a mistake by the facility manager as he had incorrectly updated his status board in April to reflect that the ISI had been completed. B&W declared that a potential inadequacy of the safety analysis exists as the facility in question has a partially disassembled nuclear explosive in the work stand which prevents B&W from testing the ESD floor. B&W performed an engineering evaluation which evaluated the historical performance of ESD floors at Pantex and noted that the oldest one was installed in 2005, none has ever failed an annual ISI, and that their electrical properties appear to be very stable. B&W is determining whether this is an unreviewed safety question and will write an evaluation of the safety of the situation which will serve as the basis to resume disassembly of the nuclear explosive.

**Lightning Safety:** B&W will be limited to one operational mass properties facility for an indefinite period of time as a result of the damage caused by the flooding event of July 8. To enhance the efficiency of the remaining facility, B&W management asked the lightning subject matter experts on the nuclear security enterprise electromagnetic committee to evaluate the risks associated with installing or removing a nuclear explosive from the mass properties dynamic balancer during lightning warnings, an operation that is currently prohibited by the documented safety analysis. The committee identified several loops created by process tooling that could provide a conduit for lightning energy to couple with the weapon through indirect energy transfer mechanisms. The committee determined the hazard associated with these loops must be further characterized before the subject operational restriction is removed. The B&W members on the committee will identify the bounding loop, characterize the energy transfer mechanism to the weapon, and provide this environment to the design agencies for weapon response.

**B53 Nuclear Explosive Safety (NES) Study:** The coordination copy of the study's report contained one pre-start finding concerning the structural integrity of a weapon component made out of phenolic resin. The process, as currently designed, relies on this component as part of the load path when removing a large part (containing the main charge high explosives) from the bomb's case. The report's finding notes that there are no process features (such as tooling or inspections) incorporated to remove complete reliance on the component, and that there is a lack of surveillance data to ensure the structural integrity of the component. In addition, the report discussed how B&W has no predefined contingency in place to handle a failed or degraded component. Although B&W and the design agency believe it is unlikely that the components have experienced any significant aging effects, B&W plans to modify the process to add a sling to provide defense in depth in case the weapon component fails under load.

There are some partially disassembled B53s at Pantex that are currently staged in the configuration that is of concern to the NES study group. To address this issue, PXSO will not authorize B&W to transport and ultimately dismantle these units until B&W has had a chance to gather sufficient data on the components during initial B53 dismantlements.

**W62 Operations:** B&W completed the W62 dismantlement campaign this week, approximately one year ahead of schedule.