

## DEFENSE NUCLEAR FACILITIES SAFETY BOARD

**MEMO TO:** J. Kent Fortenberry, Technical Director  
**FROM:** Timothy Hunt and Dave Kupferer, Pantex Site Representatives  
**DATE:** 28 December 2007  
**SUBJECT:** Pantex Plant Weekly Report

**Positive Unreviewed Safety Question (USQ):** B&W Pantex declared a positive USQ last week when it was discovered that the current documented safety analysis (DSA) does not adequately address an anomalous weapon configuration. During an electrical test, the resistance was found to be out of the expected range, indicating a possible open circuit. A visual inspection of the unit for potential causes failed to turn up any apparent damage. A technical review by the design agency indicates that there may be an anomaly that could make a certain component more sensitive to external stimuli. There are no controls currently in the DSA for the suspected configuration. Work has been suspended on the subject unit while the unanalyzed condition is resolved and a path forward developed.

**Multi-Point Grounding:** A nuclear explosive safety concern was raised during the bays and cells master study regarding the possibility of a conductive loop and associated induced voltages being created during task exhaust operations in facilities with static dissipative flooring. A recent B&W Pantex evaluation concluded that, based on conservative assumptions of frequency of occurrence of lightning attachment to task exhaust ( $2E-7$  per year) and deposited energy (0.71 joules), multi-point grounding is not an immediate safety issue. B&W Pantex continues to implement compensatory measures on the B61 and W80 programs while also evaluating an option to discontinue using task exhaust in the subject bays. In addition, B&W Pantex submitted a plan to PXSO that describes the path forward for a final resolution to the multi-point grounding scenario concerns. Specifically, B&W Pantex has proposed to evaluate, select, and implement positive measures by September 2008 and evaluate other potential electrical loops during fiscal year 2009.

**Static Dissipative Chairs:** Recently, more than 400 static dissipative chairs were procured for use in the bays and cells. The specifications of the chairs were based on measurements of the static charge imparted to technicians getting out of the old chairs (up to 10 kV). Interaction with the old chairs stands out as the bounding condition when it comes to charging up personnel. The new chairs have conductive fibers woven into the fabric, and do not leave a person with as high of a body voltage. As an example, a technician who achieved a voltage of about 8 kV after getting out of an old chair was left with only 3 kV after getting out of the static dissipative chair. Safety analyses for electrostatic discharge hazards assume higher voltages than what have been detected on personnel.

**Authorization Basis (AB) Department Staffing:** B&W Pantex performed an assessment of the ability of the AB department's technically trained staff to meet mission requirements. The workforce is comprised of 40 permanent, cleared technical staff and 16 subcontractors. Of the 40 qualified staff, only eight are AB analysts while 32 are unreviewed safety question evaluators or reviewers. The AB department expects the number of analysts to climb to about 25 by March 2008. Recruitment and retention problems as well as significant security clearance processing times continue to be factors in the staffing shortages for critical AB positions.

**Nuclear Explosive Safety (NES) Evaluation Post-Start Findings:** B&W Pantex has developed a plan and schedule to close the 45 currently open NES evaluation post-start findings. Several findings have been open for more than seven years. All closure packages except four are anticipated to be submitted to PXSO by the end of fiscal year 2008.