

## **DEFENSE NUCLEAR FACILITIES SAFETY BOARD**

**MEMO TO:** J. Kent Fortenberry, Technical Director  
**FROM:** Timothy Hunt and Dave Kupferer, Pantex Site Representatives  
**DATE:** 16 December 2005  
**SUBJECT:** Pantex Plant Weekly Report

**DNFSB Activity:** Staff member A. Matteucci was on-site for training and site rep support.

**Technical Safety Requirement (TSR) Violation:** BWXT suspended operations on two weapon programs this week due to the failure to follow Fire Protection Program controls associated with flammable vapors. While performing an unrelated unreviewed safety question determination, the analyst recognized that a bonding requirement from the Sitewide Safety Analysis Report was not being implemented while technicians were working in the area of flammable vapors. An electrostatic discharge evaluation of the process did not properly identify the necessary controls and flow them into the work procedures.

**Electrical Arc:** An electrical arc occurred while maintenance personnel were installing fuses into an energized 12.5 kV automatic transfer switch (ATS). The electrical work was being performed on the energized system in order to maintain power to an environmental facility, although the environmental facility had a backup diesel generator available. The electrical arc damaged the fuse box and the ATS, which resulted in an immediate and automatic startup of the diesel generator for the environmental facility. The incident has been categorized as a near-miss and BWXT has initiated a full investigation. The individual that performed the electrical work was wearing the appropriate personnel protective equipment and was not injured.

**Fire Protection Basis for Continued Operation:** The high pressure fire loop (HPFL) supports a critical safety function by providing water to facility fire suppression systems and exterior fire hydrants. During the past ten years, 20 leaks have been discovered in the HPFL. The Technical Safety Requirements (TSRs) contain a Limiting Condition of Operation (LCO) that directs the contractor, upon discovering an unplanned automatic start of an HPFL pump, to immediately determine which facility fire suppression systems are affected and to notify the Operations Center. In August 2005, PXSO completed a vulnerability assessment of the HPFL. The report noted that the LCO bases do not contain information regarding the ability of the HPFL to provide an adequate water supply to fire suppression systems in facilities affected by a pipe break. In a memorandum to BWXT dated 12 October, PXSO reemphasized its concern. A Potential Inadequacy in the Documented Safety Analysis has not been declared.

**Formality of Operations:** As part of component disassembly operations in a nuclear explosive bay, production technicians (PTs) are directed by an operating procedure to perform erosion activities followed by a borescope examination. The procedure is intended to be utilized in conjunction with a reader/worker/checker process. Last weekend, during the aforementioned evolution, a PT performed the borescope examination before the erosion process was initiated. At the time of the incident, the PT had not yet achieved certification on the process. BWXT is developing corrective actions in response to this event.

**Nuclear Explosive Safety Rules (NESRs):** PXSO recently completed an assessment of BWXT's compliance with the requirements of the NESRs for nuclear explosive operations. The scope included general NESRs identified in DOE 0 452.2B and AL SD 452.2B, as well as weapon specific NESRs for Pantex, and their incorporation into procedures, authorization basis documents, and training. With the exception of a couple relatively minor findings, the review validated that the appropriate NESR requirements are properly flowed down from DOE and plant directives and are adequately implemented in nuclear explosive operations.