

## DEFENSE NUCLEAR FACILITIES SAFETY BOARD

**MEMO TO:** J. Kent Fortenberry, Technical Director  
**FROM:** Timothy Hunt and Dave Kupferer, Pantex Site Representatives  
**DATE:** 28 October 2005  
**SUBJECT:** Pantex Plant Weekly Report

**DNFSB Staff Activity:** D. Owen was on-site this week to support the site representatives and observe operations.

**Technical Safety Requirement (TSR) Violation:** In mid-September, crafts personnel discovered that contaminated waste isolation valves (CWIVs) in three nuclear facilities were leaking significantly. The CWIVs are credited with isolating the contaminated waste drain lines during an explosion to limit the leak path for dispersable special nuclear material. Recently, a PXSO Facility Representative identified that the TSR surveillance steps for the CWIVs did not meet the requirements in the TSR bases. Subsequently, BWXT declared a TSR violation and is developing a path forward. The two most likely alternatives are to remove the CWIV TSR control (preliminary calculations performed by BWXT system engineering indicate that the off-site dose would not be negatively effected if the CWIVs were open as opposed to closed) or to revise the surveillance procedures.

**Degraded Safety System:** The authorization basis (AB) at Pantex requires a back-up power source to ensure that emergency lighting remains operable in nuclear explosive facilities during loss-of-power events. Last week, the controller board of one of two back-up uninterruptible power supplies (UPS) that supports multiple nuclear explosive facilities malfunctioned. This week, the controller board of the other UPS that supports the same nuclear facilities also malfunctioned. Hours after discovering the later malfunction, BWXT entered the appropriate limiting condition of operation (LCO). This delay was caused by confusion regarding whether the AB considers the diesel powered generator as a back-up power source for the emergency lights. The LCO was entered when it was determined that the AB identifies the back-up power source as either a UPS or a battery pack.

**Vital Safety System (VSS) Assessments:** During a PXSO assessment of the BWXT system engineering program in August, it was noted that a schedule for assessing VSSs was not established. This week BWXT submitted a proposed schedule for 339 VSS assessments during fiscal year 2006. The intent is to review one third of all VSSs each year with a cycle time of three years between recurring assessments.

**Pit Thermal Monitoring System Safety Analysis:** During the week of 22 May, BWXT declared a TSR violation after discovering that an auto-alert thermal monitoring system, which is used to monitor the temperature of magazines in Zone 4, was not functioning and hourly manual monitoring was not being performed as required. Since BWXT's discovery in May, the functionality of the auto-alert system has been subjected to additional scrutiny and numerous system errors have been reported. BWXT currently tests the operability of the auto-alert system every 12 hours to minimize the possibility of the magazines overheating if the air conditioning units fail. Last week, BWXT determined that the potential temperature rise in a magazine could be greater than that currently predicted. Subsequently, BWXT declared a Potential Inadequacy of the Documented Safety Analysis. In addition, it is unclear if the safety basis appropriately analyzes a potential scenario during which an air conditioning system malfunction would pump hot air into the magazines that store higher hazard pits.