

## DEFENSE NUCLEAR FACILITIES SAFETY BOARD

**MEMO TO:** J. Kent Fortenberry, Technical Director  
**FROM:** Timothy Hunt and Rory Rauch, Pantex Site Representatives  
**DATE:** 9 May 2008  
**SUBJECT:** Pantex Plant Weekly Report

**W62 Weapon Anomaly:** While performing a dismantlement operation, production technicians (PTs) noticed a crack in a weld that had the potential to expose reactive material to the environment. The PTs appropriately implemented immediate action procedures for the unexpected situation by ensuring the component was in a safe configuration and evacuating the facility. Radiation swipes were negative for contamination. At engineering direction, and with Nuclear Explosive Safety approval, vinyl tape was applied over the crack and a path forward to package and ship the component to the production plant is being developed. The cause of the damage is currently unknown.

**Special Nuclear Material Component Requalification Facility (SNMCRF):** Last week, after laser drilling a hole in a pit tube during a purge and backfill operation, the communication link between the equipment and computer operating system managing the work was lost. The electronic pressure gauges on the equipment did not match what appeared on the monitor after the computer apparently locked up, disallowing automated laser welding of the hole. The recovery action specified in the procedure required the technician to manually operate the weld program to reseal the hole. Vacuum to the weld chamber was never lost during the anomalous event. The cause of the software/hardware problem is still under investigation.

**Technical Procedure Validations:** B&W Pantex process engineering conducted an assessment last month to verify that the appropriate types of validations of new and revised technical procedures were being performed. Three types of validations are defined in the work instruction: tabletop if a change is mostly administrative; partial walkthrough if a change re-sequences steps or introduces new tooling or equipment; full walkthrough for new procedures or wholesale rewrites. Of 648 procedure changes reviewed, 39 percent were originally identified as requiring validation; the assessment team determined an additional 16 percent should have been validated. It was also concluded that 46 percent of the procedures should have undergone a full walkthrough although only 12 percent received that level of validation. Supplemental procedures (e.g., NEEPs) are seldom subjected to a full walkthrough due to a lack of available trainer units, facilities, and tooling.

**Nuclear Facility Earth Overburden:** B&W Pantex declared a potential inadequacy of the safety analysis last week after discovering that the earth overburden for a nuclear material staging facility was less than the minimum required depth. This earth overburden requirement is a part of the facility structure design feature, which is credited to provide a fire barrier, resist performance category 2 high winds, and protect against an onsite vehicle crash. Previous annual in-service-inspections failed to identify this issue because the visual inspections were compared to discrepant "as-built" drawings that were never validated. PXS0 has asked B&W Pantex to perform an extent of condition review to determine whether other facilities have been qualified and inspected in a similar manner. A preliminary B&W Pantex evaluation indicates that a minimum overburden is not necessary to support the functional requirements of the structure.

**Critique Process:** B&W Pantex recently performed a self-assessment of the critique process used to capture facts following an event or anomalous condition. Overall, the critique process was found to meet the work instruction requirements. One strength (critique facilitator training), two weaknesses and two observations were documented. Corrective actions are being developed to ensure all relevant information is gathered prior to the critique and personnel directly involved in the event provide input; also, the managers that lead critiques are independent from the affected organization.