

## DEFENSE NUCLEAR FACILITIES SAFETY BOARD

**MEMO TO:** Timothy J. Dwyer, Technical Director  
**FROM:** Timothy Hunt and Rory Rauch, Pantex Site Representatives  
**DATE:** 13 March 2009  
**SUBJECT:** Pantex Plant Weekly Report

**Special Tooling:** W76 operations were suspended this week when an assembly cart would not mate with a transportation cart (ETC I); thus, the unit could not be transferred. The unit was placed in a safe and stable configuration back in the ETC I. Initial indications are that a combination of the cart alignment feature and unevenness of the floor caused a binding that prevented an interlock from engaging. This problem has occurred previously in other facilities and the primary recovery action involved positioning the ETC I on a flat spot on the facility floor. The same action was taken in this instance and the recovery procedure has since been successfully executed. Tooling engineering will inspect the subject carts for any out-of-tolerance conditions and potential design improvements.

**Pit Characterization Laboratory:** The capability to characterize certain pit-related anomalies was moved from a 12-44 cell to Building 116 last year to consolidate pit inspection activities. Three pieces of equipment used for detailed non-destructive pit evaluations were relocated and one, the digital stereomicroscope, was used for the first time this week. The activity observed required extensive handling of the pit to position it in the microscope's field of view in order to collect weld data from various angles and perspectives. Radiation safety personnel were present taking surveys and assessing whether the current controls are adequate to minimize exposure during the operation. About a dozen more pits with questionable characteristics are currently slated to go through the laboratory in the near future. A spectrometer, interferometer, and electron microscope are also available for use in analyzing the pits.

**AC-Powered Equipment:** A post-start finding from the August 2000 nuclear explosive safety (NES) study of W76 operations states that the facility Faraday cage is compromised whenever AC power is used in lightning protection standoff areas (the finding was not specific to the W76). In 2005, B&W Pantex completed an evaluation of alternatives to AC power transmission (e.g., battery and laser power). The evaluation concluded that the additional hazards introduced by these alternatives negate the safety benefit of eliminating the use of AC power transmission in nuclear explosive facilities. The evaluation also identified the requirement to suspend the use of AC power transmission in nuclear explosive facilities during lightning warnings as an additional risk-mitigating measure. Based on this evaluation, the NES study group that performed the bays and cells master study in September 2007 endorsed closure of the finding. The NES division (NESD) recently rescinded this endorsement and requested a review of equipment, not just power source, alternatives. The NESD identified the use of the pneumatically-driven power-free pump module for B61 leak check operations as an example of this practice.

**Weapon Components Storage Capacity:** The DOE Office of Inspector General (OIG) issued an audit report in January that concluded Pantex will eventually lack adequate storage space to house components removed from dismantled weapons unless action is taken. One of the primary observations made in the OIG report is that Pantex does not have an efficient system to accurately measure the volume of components staged, shipped and scrapped, nor does it know the storage volume of the current inventory or available space in each warehouse. B&W Pantex plans to complete a study by July that will determine the feasibility of creating a system whereby the volume of weapon components can be measured.