

## **DEFENSE NUCLEAR FACILITIES SAFETY BOARD**

**MEMO TO:** Timothy J. Dwyer, Technical Director  
**FROM:** Matthew Duncan and Rory Rauch, Pantex Site Representatives  
**SUBJECT:** Pantex Plant Report for Week Ending November 6, 2009

**DNFSB Staff Activity:** F. Bamdad, D. Campbell, B. Laake, C. Martin, and T. Spatz were onsite to perform a safety basis review and observe some of the W78 Operational Safety Review.

**Conduct of Operations:** Last week, a pit tube was caught on an item and stretched 1-2 cm during a vacuum lifting operation. Technicians determined the fastest way to achieve a safe configuration was to complete the lift, at which time the operation was suspended. There was no visible indication of any damage (besides the extension of the tube) at that time. Radiation safety was called into the facility to swipe the potentially affected area and found no contamination. The procedure contains an explicit warning to use care to prevent damage to the pit tube during the lift. In this case, the technician responsible for watching the pit tube chose to verbally aid the technicians responsible for cleaning excess material on the subassembly below the lift and failed to notice the pit tube was being damaged. Program personnel are reviewing this process step to determine whether any process or tooling design changes are warranted.

Radiation safety continued to enter the facility daily while a recovery procedure was being developed. No contamination or visible changes to the configuration were detected initially. However, several days after the event, the technicians and radiation safety observed visible discoloration and some creep in the glue on the polymer plug that conforms to the base of the pit tube. The facility was immediately evacuated. After donning the appropriate personal protective equipment, radiation safety re-entered the facility and swiped the suspect area, finding no contamination. B&W is awaiting input from the design agency and approval from nuclear explosive safety before a justification for continued operations is prepared and the recovery procedure is finalized. Radiation safety will continue to confirm the absence of contamination daily until the procedure is executed.

**Potential Inadequacy of the Documented Safety Analysis:** B&W reassessed certain drop accident scenarios and determined that two Hazard Analysis Reports (HARs) do not consider the hazard of vacuum lifting fixture failures prior to the complete engagement of safety catches (see 10/16/09 report). B&W subsequently declared a potential inadequacy of the documented safety analysis. No compensatory measures were identified because: (1) a different weapon program with a similar component addresses this issue in its HAR and there is no consequence resulting from the drop, (2) the vacuum lifting fixture and its catch fingers are functionally tested immediately prior to the lift, and (3) the time at risk between the initiation of the lift and engagement of the catch fingers is minimal.