

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 December 18, 2009

W76-1 Operations: All W76-1 cell operations have been suspended after damage to an assembly was discovered during surveillance activities. The operational pause will be lifted after the design agency determines the cause of the damage and any resulting impacts.

Technical Safety Requirement (TSR) Violation: In preparation for preventive maintenance activity in a nuclear explosive bay, technicians cleared the bay of all prohibited items. The technicians asked the production section manager whether an item containing explosives (1.4S) could be stored in the bay's equipment interlock, and he confirmed that it was allowed. However, they did not mention that the item was a packaged tritium reservoir. The facility manager later performed a walkthrough and did not notice a problem. Approximately 12 hours after it was initially placed in the interlock, maintenance personnel discovered the item and questioned whether it was allowed to be staged there. The nuclear material and explosives inventory control program, a specific administrative control, includes a requirement that prohibits staging of nuclear explosives, nuclear material, and explosives in the equipment interlock of nuclear explosive bays. Therefore, this incident was declared a TSR violation. The item was then moved back into the bay and the maintenance activity was suspended. While long term corrective actions are considered, a standing order is being developed that would require consultation of the site's material tracking system whenever a nuclear explosive bay or cell needs to be cleaned out prior to a maintenance activity.

Emergency Lighting System: B&W continues to observe failures of safety-class cell emergency light fixtures during surveillance and preventive maintenance activities. In two instances, the emergency lighting system failed to pass the annual surveillance requirement specified by the TSRs (see 5/22/09 and 6/12/09 reports). Other less significant failures—such as the failure of one or two of the eight fixtures that comprise the system—have required entry into a limiting condition of operation (LCO) on several occasions. This week, PXSO requested that B&W re-evaluate the cell emergency lighting system LCO for potential improvements. Currently, the LCO specifies actions covering the entire range of system capability. PXSO would like the LCO revised such that operability is defined by the minimum functional requirement for the system with an additional margin of safety. In addition, PXSO does not believe the actions taken by B&W in response to observed emergency light fixture failures were timely or sufficiently proactive. For example, plans to implement a more frequent quarterly preventive maintenance discharge test have not been realized to date. PXSO has requested a plan to address these matters within 30 days.

Engineered Penetration Bonds: Penetration bonds are credited in the TSRs as a safety-class design feature that provides an electrical path to shunt lightning current from facility penetrations to the Faraday cage. This week, technicians discovered a loose bond in a nuclear explosive bay. Facility management established unbounded standoff and initiated a work request to re-establish the connection within electrical continuity requirements. Operations have since restarted.