

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

MEMO TO: J. Kent Fortenberry, Technical Director
FROM: Timothy Hunt and Rory Rauch, Pantex Site Representatives
DATE: 14 March 2008
SUBJECT: Pantex Plant Weekly Report

Potential Inadequacy of the Documented Safety Analysis (PISA): B&W Pantex declared a PISA last week when it discovered that the north end of a nuclear material storage area was not credited as a nuclear facility in the Pantex documented safety analysis (DSA), despite the presence of greater than Hazard Category 3 quantities of nuclear material. The south end of the facility—separated from the north end by a fire wall and door—is credited as a Hazard Category 2 nuclear facility in the DSA. Compensatory measures were implemented to preclude additional material from being sent to the facility. The two parts of the facility are of similar construction and share utilities and safety systems. When the south end of the facility was upgraded from a radiological to Hazard Category 2 nuclear facility a few years ago, no readiness review was performed.

Lightning Safety: Last week, the Nuclear Weapons Complex Lightning Committee met to discuss the progress made towards resolving several lightning safety concerns. As part of the path forward to address the multipoint grounding hazard, B&W Pantex proposed several operational adjustments (e.g., using dry times, removing carcinogenic lacquers, changing workstand operations to bench operations) that would almost eliminate the need for task exhaust operations in static dissipative environments. To address the bond wire inductance hazard, the committee has decided to commit all of its resources for the next several months towards proving the viability of time domain reflectometry (TDR) for use in a Pantex production environment. The committee had considered alternate approaches, but determined they were too onerous when compared to the TDR approach and tabled them for the time being. The committee plans to procure new TDR equipment and design, build, and begin testing on a Pantex facility mockup within the next several weeks.

Radiological Protection Controls: Two nuclear explosive operating procedures used by the production technicians (PTs) did not specify the appropriate personal protective equipment (PPE) to be worn while dismantling the units. The weapon system affected has one of two possible configurations. The procedures assumed the items would have a relatively low dose rate—thus no PPE was specified—but contained the items with a significantly higher dose rate, which normally requires the donning of shielded aprons and gloves. Although the doses to the technicians were somewhat higher than has been recorded on earlier units worked with the lower dose rate items, no overexposures were experienced. Process engineering needs to more rigorously identify units with the items of concern and add the appropriate PPE to the procedure.

Inventory Control: While performing an inventory verification of items in Zone 4 West non-nuclear magazines, it was discovered that an item located in one of the magazines labeled as 50 lbs of Hazard Division (HD)1.4 explosives was actually a component containing 80 lbs of HD1.1D explosives. The Move Right material tracking system did not show the item located in the magazine, although the facility is authorized for this type of material and the posted mass limit was not exceeded. An authorization change package associated with external explosions is being developed to preclude HD1.1 and 1.2 explosives from being stored in the subject magazines.

Senior Management Team (SMT) Meeting: The SMT—which includes representatives from NNSA, B&W Pantex, LANL, LLNL, SNL, and Y-12—met this week at Pantex. B&W Pantex presented the status of fiscal year 2008 production goals, startups of W88 cell, B53, and W84 SS-21 operations, lightning committee efforts, PT utilization during downtime, and barrier development.