

## DEFENSE NUCLEAR FACILITIES SAFETY BOARD

**MEMO TO:** J. Kent Fortenberry, Technical Director  
**FROM:** Timothy Hunt, Dave Kupferer, and Rory Rauch; Pantex Site Representatives  
**DATE:** 1 February 2008  
**SUBJECT:** Pantex Plant Weekly Report

**Two-Person Zone Coverage:** Recently, three B&W Pantex employees failed to provide proper visual surveillance of a nuclear explosive, resulting in the violation of a nuclear explosive safety requirement. Following the incident, B&W Pantex performed a causal factors analysis, undertook a targeted assessment, and provided refresher training to the production technicians (PTs) and supervisors. Senior management completed its analysis with the identification of 10 judgments of need and an overall conclusion that the implementation of zone coverage needs to be improved. In addition, the nuclear safety officers interviewed dozens of Manufacturing Division personnel to evaluate the level of knowledge and understanding of the zone coverage concept; the results being generally adequate. Manufacturing management is determining what changes need to be made to reduce vulnerabilities and enhance the two-person concept. A B&W corporate team will be at Pantex next week performing an independent assessment of the event.

**B53 SS-21 Dismantlement:** Two weeks ago, B&W Pantex requested PXSO concurrence with the B53 project team's position that all dismantlement operations be performed in nuclear explosive bays. This position, dependent on unresolved weapon response issues, is based on a desire to minimize movements between facilities and to avoid potential difficulties in transferring a unit through cell corridors. Depending on the final weapon response, the project team may consider additional controls or may change the dismantlement approach altogether. PXSO responded by stating that if the hazards in question remain credible after the application of controls, then B&W Pantex must identify the risks associated with the dismantlement approaches under consideration.

**Potential Inadequacy of the Safety Analysis (PISA):** During its end-state verification of nuclear explosive and material movements, B&W Pantex discovered that the seismic qualifications for a loading dock and ramp may be inadequate. There is no documentation that indicates a seismic analysis of these two areas has been completed. About 30 percent of the approximately 12,000 feet of analyzed ramps and corridors are not currently PC-3 qualified. The additional unanalyzed area adds slightly to the overall unqualified area. The documented safety analysis, however, conservatively assumes 50 percent of the ramps, corridors, and docks will fail a PC-3 seismic event. Acceptance of this hazard is generally based on an event frequency and time-at-risk argument.

**Conduct of Operations:** A W78 joint test assembly (JTA) was built without all of the necessary hardware. The procedure required installation of 30 sealing washers, flat washers and hex head bolts when attaching the aft bulkhead to the unit. PTs failed to install the 30 flat washers. The unit was sent to a special purpose facility without the required washers installed and was received at the originating facility prior to discovery of the missing parts. The "critical use" procedures used for inert JTA work do not require the reader-worker-checker protocol. In a separate event, the PTs experienced difficulty installing a component while performing work on a B61 life extension program build. The PTs stopped work after they had achieved a required force of 6900 lbs on a cover plate, but the threaded ring used to hold the cover in place would not engage the threads on the unit. An investigation showed that the cover plate was not aligned with a mark on the case. Using a back-out procedure to remove tooling and several components, it was found that the technicians had misaligned a key on the sleeve of a major subassembly with a slot on the center case during an earlier operation. The sleeve was slightly deformed and is now jammed in the case. A path forward on removal and replacement is under development.