

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

May 21, 2004

MEMORANDUM FOR: J. K. Fortenberry, Technical Director
FROM: T. Hunt and W. White, Pantex Site Representatives
SUBJECT: Pantex Plant Activity Report for Week Ending May 21, 2004

Loss of Power. On Wednesday, the Pantex Plant suffered a loss of off-site power despite the fact that the electrical distribution system is supplied by two off-site power sources and two substations. The sequence of events leading to the loss of power began Monday with a fire on a power pole supporting the transmission line coming into the north substation. As a result of this fire, BWXT switched the Pantex Plant power load from the north substation to the south substation. The cause of the fire was repaired, but BWXT left the north substation disconnected until damage to the power pole could be repaired.

On Wednesday afternoon, a fault within the south substation caused protective devices in that substation to open. Having both substations disabled resulted in a complete loss of power. Less than an hour after the loss of the south substation, BWXT returned the north substation to operation and restored power to part of the plant. Zone 12 South was left without power to prevent potential problems with uncontrolled restart (particularly with respect to the active deluge suppression systems). Power to Zone 12 South was restored over a multi-hour period. The south substation will remain offline until the cause of the fault can be determined and fixed.

Safety-class electrical power is provided through uninterruptible power supplies or other battery-based backup systems. These systems were not impacted by the loss of power. Emergency lights, however, were disabled in at least one office area. In this case, personnel had known the emergency lights were unavailable but had not taken appropriate precautions or notified all facility occupants.

Recovery from the loss of power was also made more difficult by the lack of recovery checklists and procedures and by the lack of paper copies of certain operating procedures. Of interest, PXSO had sent a letter to BWXT in January 2004 asking BWXT to expedite a plan to develop recovery procedures for a loss of electrical power. In this letter PXSO requested that BWXT formalize a checklist of recovery actions to ensure "all appropriate and required actions have been taken prior to returning to operations following a power loss." Draft copies of procedures and checklists being developed by BWXT were used in some cases by facility personnel involved in the recovery effort.

BWXT is developing corrective actions to improve future response capability based on lessons learned from this incident. Some of these actions include ensuring that emergency lighting and other life-safety systems are not disabled without appropriate notification and compensatory actions; accelerating development of plans, procedures, and checklists to facilitate recovery from the loss of power; maintaining paper copies of vital procedures; and gathering detailed information on systems which did not function as expected to support potential improvements to those systems. [I, W1]

Tooling Deficiencies. Tooling deficiencies continue to hamper operations at the Pantex Plant. In the past two weeks, four occurrences related to tooling design, maintenance or functionality were discovered. In one event, tooling requiring an in-service-inspection was found in a bay without the necessary preventive maintenance or accompanying sticker. A subsequent review uncovered six other tools with similar concerns. All operations on the affected program were suspended pending a comprehensive tooling review. Other incidents included the failure of a vacuum fixture during high explosive removal, the failure of a fixture to mate up to another piece of equipment due to fasteners that did not meet tooling design specifications, and the use of an uncalibrated tool. [I, E1, E2, M2]