

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

April 20, 2001

MEMORANDUM FOR: J. K. Fortenberry, Technical Director
FROM: H. Waugh and W. White, Pantex Site Representatives
SUBJECT: Pantex Plant Activity Report for Week Ending April 20, 2001

DNFSB Activity Summary: H. Waugh and W. White were on site all week. T. Dwyer and A. Gwal, along with outside experts R. Collier and R. West, were at Pantex Wednesday through Friday to review the status of the Pantex lightning protection program.

W87 Procedure Violation: During a final review of the paperwork for a W87 life extension unit assembled this week, BWXT personnel discovered that two required electrical tests had not been done. While performing the W87 insertion procedure (210414-2), personnel on the day shift did not complete the final two electrical tests in the procedure. Personnel beginning operations on the unit during the grave shift found the bomb book containing the procedures for the unit open at the start of the subsequent assembly procedure (210414-3). Before starting this procedure, grave shift personnel did not verify that the last procedure page and steps for the previous procedure had been stamped as completed. Instead, they assumed that the previous procedure had been completed since the bomb book was opened to the subsequent procedure. Grave shift personnel did note that the previous procedure had not been closed on the plant computer system (MRP). However, rather than verifying that the previous procedure had actually been completed, they simply closed out the procedure in the computer system and entered the start of the new procedure. Since the missed steps were electrical tests and did not affect the assembly of the unit, the failure to complete the tests was not noted until the bomb book was being verified for presentation to DOE. Fortunately, the missed electrical tests had no safety implications (the tests were not required to verify the safe position of W87 safety-related components).

The corrective actions taken in response to a similar occurrence involving the W88 program in August 1998 (including reiterating to personnel the importance of verifying the completion of one procedure before beginning another) were not entirely effective. Of interest, this occurrence would not have happened using the planned interactive electronic procedure system, which does not allow a new procedure to be started until all steps from the previous procedure are complete. [II.A]

Lightning Protection Controls: This week, the Board's staff reviewed progress in implementing lightning protection controls at the Pantex site. Although progress continues to be made since publication of the Lightning Basis for Interim Operations (LBIO) and formalization of the controls in the Technical Safety Requirements (TSRs), the implementation plan itself is incomplete and individual projects continue to fall further behind. Of particular concern, only 4 of 11 families of facilities have documented test results evaluating maximum interior voltages in the event of a design basis lightning strike. Retest requirements [every 5 years] will begin coming due in the next 2 years, adding to this testing backlog. Reliance on Sandia as the sole source of data in this arena is impeding progress at the site – a concentrated effort must be made to standardize the protocols followed in this testing and to develop alternate resources. Current prioritization of Sandia tasking appears dysfunctional. Additionally, efforts within the implementation plan to bound concerns due to other potential energy transfer mechanisms associated with lightning (e.g, penetration bond frequency dependence, magnetic field and induced current issues) should also be completed to preclude the risk from any potential blind spots in existing theory. [II.A]