

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

March 16, 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 March 16, 2001

DNFSB Activity Summary: H. Waugh and W. White were on site all week.

Lightning Protection: Last Friday, BWXT submitted to DOE a justification for continued operation (JCO) to address a potential issue with low-voltage circuits. Unbonded, low-voltage circuits without adequate surge suppression may provide a path for higher than expected voltage at nearby, bonded penetrations. This could result in the bonded stand-off distance being inadequate for those penetrations. On Tuesday, BWXT submitted a revised version of the JCO which identified specific corrective actions to address the issue. DOE approved the JCO on Wednesday. BWXT has begun to implement the approved corrective actions.

Where feasible, bonded penetrations near unbonded, low-voltage circuits are being bonded again near the low-voltage circuit or shielded from the circuit through other means. For the PAL/CAP facility and a few nuclear explosive staging facilities, BWXT is re-establishing the stand-off distance to account for the increased, unbonded voltage. Where neither solution is practical due to the number of units in the facility, DOE has allowed BWXT to continue operations until the number of units is reduced to a level which allows unbonded stand-off distance to be established. Most work is expected to be complete by March 26, 2001. ^[II.A]

W87 Electrical Test Failure: On January 16, 2001, a W87 unit failed an electrical test during disassembly. Failure of the electrical test implied the potential existed for the unit to be in a less than optimal state from a safety perspective. The Pantex contractor radiographed the unit soon after the test failure. The radiographs indicated conclusively that the unit was in a safe state. On January 30, 2001, however, Sandia National Laboratories submitted a letter requesting additional electrical resistance tests, stating that the tests were not for “diagnostic” purposes but were instead necessary to “prove the warhead is in a safe condition.” Tests for diagnostic reasons could be considered electrical troubleshooting, a practice prohibited under a general nuclear explosive safety rule in DOE/AL supplemental directives.

Nuclear explosive safety personnel with BWXT determined the additional tests were not trivial (as defined in Chapter 11.7 of the Development and Production Manual) and required further nuclear explosive safety review by DOE. DOE/AAO concurred with Sandia’s proposal and their justification and forwarded the request for additional electrical tests to DOE/AL Nuclear Explosive Safety for evaluation. As of Friday, two months after the anomaly was first identified, DOE/AL has not determined whether the proposed tests require a nuclear explosive safety study. If a concern exists with regard to the safe state of the unit, two months is an excessive period of time for BWXT, DOE/AAO, and DOE/AL to process the approval of any necessary tests. On the other hand, if no safety concern exists, it is not clear what justification could be used to allow operations in violation of a nuclear explosive safety rule without a nuclear explosive safety study. ^[II.A]

Pit Cleaning Specification: LLNL revised the current pit cleaning specification to specify that pits removed from the W56 during dismantlement shall be cleaned within eight weeks from the time they are removed from the high explosive. Currently, there is no manual pit cleaning station at Pantex, and, although this method of cleaning could be resurrected, the personnel radiation exposure would be high. It isn’t clear that LLNL weighed the impact of this specification change on personnel and facilities relative to the possible corrosion problems they speculate might occur. ^[II.A]