

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

March 9, 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 9, 2001

DNFSB Activity Summary: H. Waugh and W. White were on site all week. T. Dwyer was on site Monday through Wednesday to observe the nuclear explosive safety pilot lot validation of W56 dismantlement operations.

Lightning Protection: BWXT began suspending all nuclear explosive operations at Pantex early this week as a result of new concerns related to lightning protection for nuclear explosive areas. Per verbal direction that was followed by a standing order, all nuclear explosives were to be worked until they were in a Faraday cage configuration. At that point, no further assembly or disassembly operations were to be conducted. The shut down of operations resulted from three new concerns raised by BWXT personnel: the validity of the intrinsic bonding for HVAC ducts in all facilities, the validity of the intrinsic bonding assumed for drain pipes in the ceilings of certain cells, and questions related to the presence of unbonded, low-voltage circuits close to bonded penetrations. The concern with the low voltage circuits is that the higher voltage created by a lightning strike on those circuits might result in an arc to nearby bonded penetrations. This in turn might result in a voltage at the end of the bonded penetration that is higher than assumed in the current *Lightning Basis for Interim Operation*, making the bonded standoff distance established for that penetration inadequate.

To address these issues, BWXT initiated a program to bond or remove all suspect penetrations. As of Friday, about twenty facilities had been completed. All facilities needed for nuclear explosive operations are expected to be complete by the end of next week. On Friday, BWXT submitted to the DOE Amarillo Area Office a justification for continued operation to allow DOE to accept the risk of continuing to operate until a solution is implemented for the low-voltage circuit issue. As soon as the JCO is approved by DOE, operations will be allowed to resume in those facilities whose bonding has been completed. ^[II.A]

W56 Pilot Lot Validation: On Monday, DOE-AL convened a nuclear explosive safety study group to review the W56 Dismantlement Program. This review was to verify that, after completion of the pilot lot, W56 operations, as actually performed, remained within the bounds of the nuclear explosive safety study completed in December 1998. During the review, a significant amount of time was dedicated to exploring avenues and approaches that will eventually be incorporated into the operational safety review (OSR) concept included in the new version of the DOE 452 series orders. The validation itself was not completed this week. W56 bay operations were observed in their entirety, but plans to observe cell operations were terminated due to the site-wide operational restrictions discussed above. The validation team will reconvene to complete the review once W56 cell operations resume. The NESS Group conclusion thus far is that W56 bay operations remain within the bounds reviewed by the original nuclear explosive safety study. ^[II.A]

Separation Test Equipment Failure: On Wednesday, BWXT reported a failure of separation test equipment during development activities in 12-60. Lockheed Martin personnel, using their own procedure per a BWXT engineering instruction, were evaluating the condition of bearings holding a mock inertial capsule. At speeds around 200 rpm, fragments from a Sandia component disassociated from the equipment, flying into the bay. Lockheed Martin, Navy, and BWXT personnel present in the facility at the time were uninjured, and no nuclear materials were in the bay. This type of work had been suspended several years ago due to safety concerns raised by the contractor's production technicians. ^[II.A]