

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

December 12, 2003

MEMORANDUM FOR: J. K. Fortenberry, Technical Director
FROM: W. White, Pantex Site Representative
SUBJECT: Pantex Plant Activity Report for Week Ending December 12, 2003

DNFSB Activity Summary: W. White was on site all week. Members of the Board, along with staff members K. Fortenberry, W. Andrews, T. Hunt, and A. Matteucci, were on site this week to observe operations for several programs and to discuss various topics with BWXT and PXSO personnel, including the Move Right System, the upgrade project for Building 12-64, and progress with implementing seamless safety tooling for nuclear explosive operations.

Material Movement: On Monday, BWXT identified a component containing radioactive material that was moved without the proper authorization and staged in an area not approved for radioactive material. Technicians involved in test bed operations apparently placed the properly labeled and packaged part in a bin of non-radioactive components without the segregation required in BWXT plant standards. Personnel who later moved the bin of parts did not notice the component containing radioactive material and assumed the bin contained only non-radioactive items.

Sometime after the movement of the material took place, warehouse personnel who were placing the items into inventory noted the radioactive material label on one of the components. They placed the component in an area approved for staging radioactive material and contacted appropriate personnel. The packaging and movement of the material apparently occurred in November, before the recent series of corrective actions taken by BWXT to improve procedure adherence and the administrative control program for transportation. [1, P3A]

12-64 Upgrade Project: In October 2003, the Board communicated to NNSA its concern regarding the performance of Building 12-64 in a seismic event, as well as known issues with the performance of the facility structure in an internal explosion. In response to the seismic concern, BWXT proposed a facility modification to address a structural design flaw. The Board's staff has reviewed the proposed design package.

The Board's staff held a telephone conference with BWXT and PXSO personnel this week to discuss the response of the roof of Building 12-64 to an internal explosion. BWXT contracted with a consulting firm to re-evaluate the response of the facility structure to determine the quantity of explosives that would result in detachment of a roof leaf following an internal explosion. The staff reviewed a report concerning this calculation and discussed several areas of concern during the telephone conference. The concerns related to possible non-conservative assumptions with various parameters in the calculation. BWXT and PXSO are evaluating these concerns.

The staff also noted that the report did not thoroughly evaluate the full scale experiment that was done for a structure modeled after Building 12-64. By calculating the response of the roof for the configuration of the test bay and for the test charge, BWXT may be able to correlate the calculated with the observed behavior of the test bay in order to estimate the force in the lap splice at failure. [3, E4]