DEFENSE NUCLEAR FACILITIES SAFETY BOARD

March 23, 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 23, 2001

DNFSB Activity Summary: H. Waugh and W. White were on site all week. T. Dwyer was on site Wednesday through Friday to observe the nuclear explosive safety review for the new interactive electronic procedure (IEP) system and to attend the IWAP/98-2 discussions being held at Pantex. J. McConnell was on site Wednesday through Friday to observe ongoing operations and attend the IWAP/98-2 discussions.

Lightning Protection: BWXT continued bonding efforts to address the low-voltage circuit issue which has shut down most nuclear explosive operations. As of the end of the week, certain facilities utilized for the W87, W88, W76, B83, and B61 programs were returned to operational status. Most other priority facilities are expected to resume operations next week. [II.A]

PT4183 Nuclear Explosive Safety Study: DOE convened a nuclear explosive safety study (NESS) group at Pantex this week to review a new tester proposed for the W87 program. The PT4183 tester is a radio frequency tester designed to replace several existing testers which verify the functionality of W87 antenna components. The tester does not connect to the arming and firing circuits of the W87. After a reasonably thorough review, the NESS group identified one pre-start finding and three post-start findings in its draft report. The pre-start finding involved the failure to provide adequate covers for open electrical connections during a demonstration of the tester. The post-start findings involved inadequacies in the PT4183 hazards analysis, inadequacies in the Faraday cage analysis of the W87, and the need to include the PT4183 for use with the W87 program on the master tester list. [II.A]

Interactive Electronic Procedures: A nuclear explosive safety review was held at Pantex this week to determine whether a NESS would be required for the IEP system. The IEP system allows the use of computer-generated operating procedures for nuclear explosive operations. These procedures, displayed on a touch screen monitor in the facility, provide data and performance metric collection and allow production technicians access to text-based and audio/video reference information. The IEP system, already in use for certain test bed operations, would replace the current hard-copy nuclear explosive operating procedures.

After receiving several briefings and demonstrations on the new system, the review team concluded that the new system represents a significant potential change in the way nuclear explosive operations are conducted and thus can not be approved as a minor change under the nuclear explosive safety change control process. Although the team was not unanimous in this conclusion, per Chapter 11.7 of the Development and Production Manual, only a single vote is necessary to require a NESS. The team did express the belief that the new system appeared better than the current paper procedure system.

Once the IEP system receives final approval, the project team intends to have the W88 program be the pilot program for implementing the system for nuclear explosive operations. Converting W88 disassembly, inspection and rebuild procedures to IEP format should prove a challenging first application. It might have been easier to use a dismantlement program as the pilot case. Another challenge will be addressing the low voltage circuit issue for the touch screen monitors. The monitor and its attached signal and power cable extend an unbonded circuit into the bay or cell. Although BWXT intends to establish unbonded standoff distance from the monitor, this might prove difficult given the recent redefinition of controls required for unbonded, low-voltage circuits. [II.A]