DEFENSE NUCLEAR FACILITIES SAFETY BOARD

June 22, 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 June 22, 2001

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

B83 Tooling Concerns: On June 13, 2001, production technicians lifting a B83 Joint Test Assembly (JTA) from a paint cart to a weapons fixture lost control of the unit. After the technicians removed the release pins to rotate the assembly, it rotated more rapidly than expected, injuring one of the technicians. The JTA contained no high explosives at the time. The direct cause of the occurrence was the incorrect installation of the lifting and turning clamp which caused the center of gravity of the assembly to be out of alignment with the lifting fixture.

There were several contributing factors to the occurrence. This was the first JTA of this type being built, and the new procedure for lifting contained an ambiguous picture for installation of the fixture (although the written instructions were accurate). The production technicians, who had significant experience with the B83 program, installed the fixture in a manner similar to installed fixtures for other B83 sub-assemblies which have different centers of gravity.

Perhaps the most significant concern, however, is that the tool used was defective. The potential for incorrect installation of the tool had been recognized in the early 1980's, and a tooling design change was made to offset tooling interfaces, allowing them to be installed in only one orientation. None of the tools built after the design change, however, had the required offset. This includes tools built on site and tools built by an outside vendor. Tools built before the design change were modified to incorporate the offset. A review of B83 tooling after the occurrence revealed that nearly 20 B83 tools were manufactured without required offsets. The receipt and inspection requirements that existed for these tools at the time of production were minimal and would not have caught the defect. Current receipt and inspection requirements may have identified the problem, but they were not applied retroactively to tools already in service.

Immediate corrective actions included revising the JTA procedure diagram and removing affected tools from use until they are repaired. Other corrective actions being considered include investigating the potential for a similar problem in other weapons programs and reviewing internal and external quality assurance programs for manufacturing. In light of this occurrence and other recent tooling occurrences, a thorough review of the production, receipt, inspection, control and configuration management of tooling may be warranted. [II.A]

Halon Discharge: On Tuesday, BWXT personnel accidently discharged a bottle of Halon 1301 while performing scheduled preventive maintenance on a Halon fire suppression in Building 12-86. The discharge was in an office area of the building. Personnel immediately evacuated, and there were no injuries. The cause of the discharge appears to be the accidental removal of a check valve. BWXT is conducting an investigation to determine root causes and appropriate corrective actions. The system was installed to protect electronic equipment that is no longer in service. A wet-pipe fire suppression also exists in the building, so it is not clear why the halon system is still in use, especially in light of a 1993 DOE memorandum directing that, where possible, DOE field offices deactivate all Halon systems "as soon as possible to minimize the risk of inadvertent discharge." [II.A]