

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

February 25, 2005

MEMORANDUM FOR: J. K. Fortenberry, Technical Director
FROM: Timothy Hunt and Dave Kupferer, Pantex Site Representatives
SUBJECT: Pantex Plant Activity Report for Week Ending February 25, 2005

High Explosives Cracking. Operations in a nuclear explosive cell were suspended this week after production technicians discovered water leaking through a crack of the main charge high explosive during hydraulic separation. The separation normally occurs following pressurization along the equator, at a bonded joint. This fissure occurred at an o-ring/high explosive interface, approximately one half inch from the equator. BWXT is evaluating whether the slightly tilted configuration of the unit during disassembly or pressure applied by the o-ring to the HE (procedure warns against applying an excessive compressive force to the o-ring) may have contributed to the formation of the crack. The production technicians and process engineers had not previously observed cracking of the HE in this program during hundreds of disassemblies; about 30 which used the same or similar tooling. High explosives experts from Los Alamos National Laboratory responded to assist in determining a path forward.

B83 Nuclear Explosive Safety Study. BWXT has declared readiness to proceed with the B83 NESS next week, and PXSO has approved. There are several outstanding issues that will not be closed prior to NESS startup, including four pre-start findings from the contractor's readiness verification. These issues will require tracking and closure before the new process is authorized to operate. In addition, some production procedures require unreviewed safety question evaluations and tooling analyses before release. This also impacts training of the technicians on the approved procedures.

Damaged Tooling. While performing an operation on a nuclear explosive in a special purpose bay, it was discovered that two pins on an assembly cart were bent, preventing rotation of the fixture necessary to complete the activity. BWXT has proposed transferring the unit from the inoperable cart to an undamaged cart using lifting gear and a hoist. This hoisting operation is not currently approved and will require a nuclear explosive safety change evaluation. BWXT is evaluating potential causes of the damage. The cart had recently been through tooling tryout.

BWXT System Engineering (SE) Program. In November 2004, PXSO conducted an assessment of several elements of the BWXT SE program. Strengths were noted in the areas of qualification program development and generation of design information summaries. Issues were identified with respect to the scope of the SE program, implementation of DOE O 420.1A, *Facility Safety*, data collection in support of tracking and trending, and incorporation of vendor maintenance requirements into maintenance procedures. BWXT recently submitted a corrective action plan that addresses the findings and weaknesses noted in the assessment report. BWXT plans to update the applicable directives to include the facility safety order, implement several enhancements to the tracking and trending program, and create requirements documents for each system.