

## DEFENSE NUCLEAR FACILITIES SAFETY BOARD

February 13, 2004

**MEMORANDUM FOR:** J. K. Fortenberry, Technical Director  
**FROM:** W. White, Pantex Site Representative  
**SUBJECT:** Pantex Plant Activity Report for Week Ending February 13, 2004

**DNFSB Activity Summary:** W. White was on site all week.

**B83 Disassembly and Inspection Operations:** B83 operations at the Pantex Plant remain suspended following receipt of draft weapon response from the design agencies that identifies adverse consequences associated with certain electrical and mechanical insult scenarios. This weapon response was completed in support of hazard analysis development for the new B83 seamless safety process. Existing B83 operations have no documented safety analysis (they were reviewed through the nuclear explosive safety study process). The scenarios identified for the new seamless safety process, however, are also realistic scenarios for the existing process. Because of this, BWXT elected to suspend the current process until controls could be put in place to address the scenarios or until the design agencies could refine the weapon response to screen the scenarios. Implementation of the new seamless safety process is a deliverable to the Board in the DOE Implementation Plan for Recommendation 98-2. The current schedule for implementation is October 2004 (the deliverable date is May 2004). [I, W3]

**Cracked High Explosive Investigation Report:** BWXT completed its investigation of the recent incident involving operations with cracked high explosives. The four volume BWXT report covers a wide range of contributing factors to the occurrence and identifies a number of judgements of need that will require corrective action plans. The judgements of need were in the areas of conduct of operations, authorization basis processes, nuclear explosive safety processes, design agency interactions, and weapon program activities. These judgments of need are intended to address the root causes for the occurrence that are also identified in the report. These root causes address the initiating event and response to that event, the procedure development and approval, the USQ process, the nuclear explosive safety process, the adequacy of the procedure used, and the presence of advisory personnel.

Several of the identified root causes and judgements of need appear to address the concerns raised by the Board in its letter of January 20, 2004. BWXT identifies specific root causes and judgements of need related to the USQ evaluation, the inadequate procedure used to tape the high explosives, the lack of training for personnel performing the procedure, and the absence of advisory personnel during the conduct of the procedure. The report also concludes that, although the original trivial determination for a NES evaluation was accurate, the criteria used for the evaluation were not adequate. In discussing the USQ and NES evaluations, the report notes that available information from the design agency contributed to actions taken by BWXT personnel.

The report also contains a BWXT calculation on the safety of PBX 9404. The information used to calculate drop heights for PBX 9404 results in a range of postulated threshold drop heights (from 3.8 feet to 194 feet) and appears drawn from experiments with questionable relevance. BWXT also calculates heights for tool drops onto PBX 9404 using friction sensitivity tests that do not appear to correlate directly with the drop scenarios. The calculations do not address or reference the most conservative available skid test or drop-weight impact test information in the *LLNL Explosives Handbook*. This BWXT calculation was reviewed and signed by BWXT explosives safety personnel and by LLNL personnel. In a letter to BWXT, PXSO took exception to the conclusions reached in the report regarding high explosive safety, noting that "PXSO considers that information insufficient to reach such a conclusion." [I, W3]