DEFENSE NUCLEAR FACILITIES SAFETY BOARD

April 9, 2004

MEMORANDUM FOR: J. K. Fortenberry, Technical Director
FROM: T. Hunt and W. White, Pantex Site Representatives
SUBJECT: Pantex Plant Activity Report for Week Ending April 9, 2004

DNFSB Activity Summary: T. Hunt and W. White were on site all week. J. Deplitch was on site Tuesday and Wednesday to observe a joint nuclear explosive safety review for disassembly of an anomalous unit. The Pantex Plant was closed on Friday in observance of Good Friday.

Special Nuclear Material Component Requalification Facility (SNMCRF): The SNMCRF is being constructed within an existing building as a hazard category 2 nuclear facility. Its mission is to qualify and certify nuclear components to support stockpile management programs. Activities include cleaning, leak testing, weighing, gas sampling, tube replacement, internal gas exchange, and various other inspections. Specially designed workstations with glovebox enclosures will be used for some of the operations. Construction on the new facility is to be complete by the end of this year, with facility start up sometime in 2006.

The staff's review of the Preliminary Safety Analysis Report (PSAR) and discussion with site personnel raised several concerns. These include the lack of a clearly defined confinement strategy, the absence of a clear rationale for choosing Performance Category 2 (PC-2) requirements for safety-significant systems and facility structure, the possible need for controls applicable to all initiators of glovebox fires; the absence of specific controls in the site-wide SAR associated with certain accident scenarios; and the need for the design of facilities, gloveboxes and equipment to minimize radiation exposure to workers. The staff also discussed with BWXT whether the quantity of material-at-risk in the facility challenged the guidelines for worker exposure in the event of a fire and whether reducing the amount of material would be appropriate given limited operational requirements. [I, W3]

Cell Leak Path: On January 16, 2004, PXSO approved a positive unreviewed safety question (USQ) evaluation related to a potential cell leak path in the event of certain unlikely accident scenarios. In the approval letter, PXSO noted that the compensatory measures identified in the USQ evaluation were inadequate. PXSO requested, in particular, that BWXT keep both equipment doors closed during operations in most nuclear explosive cells. This measure would reduce the potential off-site consequences of certain accidents in these cells. It is not clear, however, whether the additional compensatory measures required by PXSO in its approval letter constitute requirements in the safety basis for operations.

On Wednesday, a team re-performing the contractor readiness assessment for the W78 program noted that this compensatory measure had not yet been implemented in the W78 cell. Given that this was a pre-start finding from the earlier NNSA readiness assessment that had concluded cell operations were not ready to commence, it is unclear how BWXT and PXSO determined that the finding had been closed prior to BWXT re-declaring readiness.

Further review identified that the compensatory measure had not been implemented for any program, nearly three months after the PXSO letter. The procedure change necessary to implement the compensatory measure was apparently tied up in the backlog of USQ evaluations that exists following recent changes made to enhance the USQ process. Following discussions with PXSO, BWXT elevated the priority of this procedure change. BWXT issued the revised procedure that implemented the required compensatory measure late Wednesday. [I, M3, W4]