

April 4, 2003

The Honorable Linton Brooks  
Acting Administrator  
of the National Nuclear Security Administration  
U.S. Department of Energy  
1000 Independence Avenue, SW  
Washington, DC 20585-0701

Dear Ambassador Brooks:

During the past 16 months, the Defense Nuclear Facilities Safety Board (Board) has held a number of reviews at the Pantex Plant to evaluate conduct of operations and the site's training programs. The Board is pleased to see that procedural adherence and conduct of operations for operational personnel are improving and that a program to improve operating procedures is ongoing.

However, a review by the Board's staff has revealed problems at Pantex with the processes used to develop training, to evaluate personnel knowledge, to assess training program elements, and to conduct continuing training. These training deficiencies, detailed in the enclosed report, may affect the ability to improve and maintain satisfactory conduct of operations at the Pantex Plant.

Therefore, pursuant to 42 U.S.C. § 2286b(d), the Board requests a report within the next 60 days regarding the measures that are being taken to address these training deficiencies.

Sincerely,

John T. Conway  
Chairman

c: The Honorable Everet H. Beckner  
Mr. Daniel E. Glenn  
Mr. Mark B. Whitaker, Jr.

Enclosure

# DEFENSE NUCLEAR FACILITIES SAFETY BOARD

## Staff Issue Report

March 24, 2003

**MEMORANDUM FOR:** J. K. Fortenberry, Technical Director

**COPIES:** Board Members

**FROM:** J. Deplitch

**SUBJECT:** Conduct of Operations and Training Programs at the Pantex Plant

This report documents a review by the staff of the Defense Nuclear Facilities Safety Board (Board) of conduct of operations and the training programs at the Pantex Plant. Members of the Board's staff J. Deplitch and A. Matteucci, together with outside experts L. McGrew and R. West, reviewed numerous related Pantex Plant standards and records and performed on-site reviews.

**Background.** In October 2001, the Board sent a letter to the Department of Energy (DOE) noting issues associated with inadequate procedural compliance at the Pantex Plant. These issues are of particular concern given the significant reliance on administrative controls to implement many of the Technical Safety Requirements at the site.

During the past few months, the Board's staff has been reviewing the set of actions being taken to improve procedural adherence, conduct of operations, and related training. The staff reviewed Pantex Plant standards for conduct of operations and the training program, and reviewed records of training for the W62 and W87 weapon programs and for the maintenance program. The staff discussed with representatives of BWXT Pantex and the Pantex Site Office (PXSO) the status of actions designed to improve procedural adherence and the coordination of material movements at the site, the Pantex training program, and W62 and W87 training. The staff also observed W62 training and W87 and W79 weapons operations.

**Conduct of Operations.** Recent observations have indicated that BWXT has improved procedural adherence and conduct of operations for operational personnel. During this review, the Board's staff noted improvements in the control of combustibles and in formality of operations for the W87 and W79. Actions were still ongoing to improve operating procedures; therefore, the quality of these revised procedures will need to be evaluated in the future. Reports of occurrences and noncompliance conditions indicated that operational problems remain. Actions to improve conduct of operations appeared to be achieving positive results; however, improvements in the training program may be needed to sustain this trend.

**Training Program.** BWXT has a set of standards and procedures setting forth the elements of its training program. The Board's staff found that these instructions and the supporting records did not ensure accomplishment of significant elements of the training program as required, nor did they comply with DOE Order 5480.20A, *Personnel Selection, Qualification, and Training Requirements for DOE Nuclear Facilities*:

- ! The BWXT procedures for training needs analysis and training development provide an adequate process for developing training. However, records examined by the staff provided insufficient evidence that all of the elements of the process had been completed.
- ! Records of performance evaluations, comprehensive written examinations, and oral examinations indicated that these evaluations and examinations were not sufficiently comprehensive and challenging to form the basis for certification of operational personnel.
- ! The continuing training program for operational personnel lacked essential elements (e.g., abnormal facility procedures, drills, systems to control or mitigate accidents, Technical Safety Requirements, and facility safety systems).
- ! There was no continuing training program for maintenance personnel. DOE requires continuing training for maintenance personnel in place of requalification. The lack of such a program may be a significant factor in the continuing problems seen with the performance of maintenance.
- ! The fidelity of the mock-up units of nuclear weapons used for training was not being maintained and is degrading with time. Training units, such as those for the W56, W62, W76, and W78, had worn, damaged, and broken detonator cables, connectors, and detonator mock-ups; worn joint tapes; worn and broken fill and pit tubes; worn threads and broken screws for mounting fixtures; poor bore-down materials; and inadequate mock-up for the high explosive. Some training units were no longer adequate for training and testing of personnel on nuclear weapons operations. Additionally, since the mid-1990s, DOE has not maintained the joint standing committee that addressed trainer fidelity issues for the weapons programs.
- ! The only contractor assessment of the training program conducted in the past 3 years was an examination of comments resulting from reviews conducted by various outside groups and contractor readiness assessments. This was not a thorough assessment and failed to note several significant deficiencies with the program. Mechanisms for

assessing the effectiveness of training on operations and the need for additional training were informal.

- ! DOE Order 5480.20A tasks DOE field managers to conduct periodic systematic assessments of training using a DOE standard that requires evaluations every 3 years. PXSO's current procedure for these assessments needs revision. The National Nuclear Security Administration has conducted no assessments of training in the last 3 years.

**Summary.** These training deficiencies may affect the ability to improve and maintain satisfactory conduct of operations at the Pantex Plant. The Board's staff should review the plan of corrective actions and the improvements to the training program.