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DEFENSE NUCLEAR FACILITIES SAFETY BOARD

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August 10, 1999

Brigadier General Thomas F. Gioconda
Acting Assistant Secretary for Defense Programs
Department of Energy
1000 Independence Avenue, SW
Washington, D.C. 20585-0104

Dear General Gioconda:

The Defense Nuclear Facilities Safety Board (Board) is encouraged by recent observations of the W79 Dismantlement Program being conducted at the Pantex Plant. The Board has previously commented on the difficulties encountered by the Department of Energy while readying the W79 Dismantlement Program for operation. As a result of the considerable effort to develop a safe and controlled process and to implement that process in practice, the W79 operations were started safely on June 3, 1998. It appears that the W79 Dismantlement Program continues to be conducted with the appropriate attention to safety.

Enclosed for your information is a report summarizing recent observations made by the Board's staff during an in-progress review of the W79 Dismantlement Program. The report indicates that production technicians are well trained, issues encountered during the process have been addressed appropriately, and authorization basis controls are being maintained. If you have any questions on this matter, please call me.

Sincerely,

A handwritten signature in cursive script, appearing to read "John T. Conway".

John T. Conway
Chairman

c: Mr. Richard E. Glass
Mr. Mark B. Whitaker, Jr.

Enclosure

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

Staff Issue Report

June 30, 1999

MEMORANDUM FOR: G. W. Cunningham, Technical Director
J. K. Fortenberry, Deputy Technical Director

COPIES: Board Members

FROM: J. Deplitch

SUBJECT: W79 Dismantlement Program In-Progress Review

This report documents an in-progress review of the W79 Dismantlement Program conducted at the Pantex Plant, June 22–24, 1999, by members of the staff of the Defense Nuclear Facilities Safety Board (Board) J. Deplitch and M. Forsbacka and outside expert L. McGrew. The review included observation of W79 bay and cell operations; review of the authorization basis, implementation of controls, and change control; and review of potential safety issues, incidents, occurrences, and corrective actions. The staff identified no adverse safety issues.

W79 Dismantlement Program. W79 dismantlement operations began in June 1998 after more than a year of readiness reviews. The tooling developed for the W79 Dismantlement Program was originally intended to dismantle all of the W79 units in a year. The W79 dismantlement is currently scheduled to be completed in about 5 years. The disassembly and high explosive (HE) dimethylsulfoxide (DMSO) dissolution processes take longer than was planned, and the resources applied to the program do not support earlier completion.

W79 Dismantlement Operations. There have been no major changes to the W79 dismantlement operations since startup. Minor procedural and tooling changes have addressed improvements to the dismantlement process and unexpected difficulties with the W79 units. The change control process in place for the W79 program appeared sufficient to preserve all controls during change implementation:

- Observations of bay operations revealed a well-trained and motivated crew capably accomplishing the dismantlement tasks. The W79 production technicians were cross-trained and appeared capable of performing all of the bay and cell operations. The shift crews appeared adequately staffed so that they could regularly perform operations safely. The staff observed no adverse safety issues.
- Radiation exposures have been low, and the project team has proposed further process improvements designed to bring about additional reductions. The total whole-body dose and extremity dose for all W79 dismantlement personnel was

16.7 person-mrem and 238.2 person-mrem, respectively, per W79 unit for the first year. Earlier there had been concern that each production technician could exceed those doses individually.

- A DMSO recycling process has been proposed. Fresh DMSO currently is used for HE dissolution of each unit. Recycling DMSO will reduce monetary costs and waste requiring disposal. The proposed recycling process appeared to have appropriate HE, radiation, and conductivity controls.
- The program was meeting its current dismantlement schedule. Delays have been incurred during bay disassembly operations as a result of difficulties with removing pins from the aft end of the unit at the rocket motor interface. A slide hammer has been proposed as a removal tool. A drilling procedure also is being developed to correct stripped threads, which have been a recurring inconvenience. The changes appeared to be receiving adequate analysis and review. Delays in the cell DMSO dissolution operations have been due primarily to facility fire protection upgrades.
- Only one of the three DMSO dissolution workstations is operational. The other two have not been accepted by Mason and Hanger Corporation (MHC) because the Lawrence Livermore National Laboratory workstation drawings are considered inadequate to support configuration management. Currently MHC plans to operate only one workstation, get a second operational for use as a backup, and remove the third.
- MHC personnel responsible for risk management and Unreviewed Safety Questions explained change control at Pantex. The personnel showed an understanding of change control and how it is implemented at Pantex. The Pantex Plant has undertaken an effort to formalize the flowdown of controls included in authorization basis documents. Weapon programs that operate under the new process for flowing down controls (i.e., W56, W79, and W87 programs) require interim compensatory measures to augment current plant systems. The Pantex Authorization Basis Management Plan, Issue 3, has been applied to the W56, W79, and W87 programs until formal programs covering elements in the plan are implemented. Implementation of the plan appears to be dependent upon a few key weapon program personnel.