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DEFENSE NUCLEAR FACILITIES SAFETY BOARD

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94-0001173



March 3, 1994

The Honorable Victor H. Reis
Assistant Secretary for
Defense Programs
Department of Energy
Washington, D.C. 20585

Dear Dr. Reis:

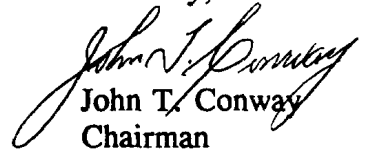
Since its inception, the Defense Nuclear Facilities Safety Board (Board) has endorsed the operational readiness review as the primary means by which top management in the Department of Energy (DOE) and the contractor organization can ensure that readiness exists to commence activities in a way that will ensure the health and safety of the workers and the public. In Recommendation 92-6, the Board stated ". . . that it holds these reviews, whether by the contractor or by DOE, in high regard as important measures in verifying readiness of new activities to be started safely . . ." As such, the Board has closely monitored the conduct of DOE's Operational Readiness Reviews and Evaluations throughout the complex.

In January 1993, Board staff members visited the Pantex Site near Amarillo, Texas, to observe the Department's Operational Readiness Evaluation (ORE) for the W79 Preparation for Disposal (PFD) activities. As a result of the review, the Board sent a letter to DOE on January 21, 1993, that raised concerns with the adequacy of the safety envelope, as defined by the authorization basis documents, and the failure of the DOE ORE to evaluate the technical and managerial qualifications of the DOE field organization. The DOE ORE team found many safety envelope inadequacies and conduct of operations deficiencies that precluded commencing operations.

A Board staff member and an outside expert visited the Pantex Plant from February 1-4, 1994, to observe DOE conducting the second ORE for the W79 PFD activities. Particularly disturbing is the observation that operating personnel were not trained or knowledgeable of the safety envelope or the critical systems for Building 12-84, Bay 18. The Board's staff found that little progress had been made in correcting deficiencies with the safety envelope or improving the formality of operations for W79 PFD.

The enclosed trip report is provided for your information and use as you resolve these issues prior to commencing W79 PFD activities. The Board staff will continue its oversight of preparations for the disassembly operations.

Sincerely,



John T. Conway
Chairman

c: Mr. Mark Whitaker, Acting EH-6 w/enclosure
Mr. Bruce Twining, Manager AOO w/enclosure

Enclosure

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

February 15, 1994

MEMORANDUM FOR: G. W. Cunningham, Technical Director

COPIES: Board Members

FROM: J. Kent Fortenberry

SUBJECT: DOE Operational Readiness Evaluation (ORE) for the W79 Preparation for Disposal (PFD) Operations (February 1-4, 1994)

1. **Purpose:** This trip report documents a review of the DOE ORE for the W79 PFD operations by the Defense Nuclear Facilities Safety Board (DNFSB) technical staff (K. Fortenberry) and outside expert (D. Thompson) on February 1-4, 1994.
2. **Summary:**
 - a. The safety envelope, as defined by the authorization basis documents, is not effectively controlled. For example, Limiting Conditions for Operations (LCOs) are not effectively incorporated into procedures, critical systems are not consistently identified, and modifications are not consistently reflected in design drawings.
 - b. The subject ORE did not meet requirements for independence and technical qualification of team members. The ORE did not assess the adequacy of DOE personnel in the field organization who have been assigned responsibilities for providing direction and guidance to the contractor (Mason and Hanger).
 - c. Formal conduct of operations is deficient in the areas of investigation of abnormal events, authority to operate equipment, and operating logs.
 - d. Several findings from the contractor's Operational Readiness Review (ORR) were not adequately closed.
3. **Background:**
 - a. The W79 PFD operation consists of removing a valve and special hardware from the W79, welding a metal cap, and quality testing the weld. The DOE Albuquerque Operations Office (DOE-AL) conducted an ORE in January 1993, which concluded that operations were not ready to commence due to several deficiencies including inadequate safety analysis documentation, conduct of operations, and ORR documentation. The Board, in a January 21, 1993 letter to

the Secretary, noted that preparations for the W79 PFD operations were deficient . This letter specifically addressed concerns with respect to the safety envelope and the failure of the DOE ORE to evaluate the technical and managerial qualifications of the DOE field organization.

- b. During the summer of 1993 the W79 PFD operation was performed on five units to accommodate the "Sticker." This activity was authorized by DOE-AL based on approved Nuclear Explosive Safety Studies, a special "Safety Study Group Report for the W79 Sticker," and implemented measures to compensate for deficiencies identified in the DOE ORE.
- c. Mason & Hanger conducted a supplemental ORR during October/December 1993 in response to the DOE ORE findings. On January 5, 1994, Mason & Hanger issued a readiness to proceed memorandum. The DOE Amarillo Area Office (DOE-AAO) certified the contractors readiness and its own readiness to oversee the operation by a memorandum dated January 24, 1994.
- d. The subject ORE was conducted by DOE-AL on February 1-4, 1994 to provide independent verification of the readiness to commence the W79 PFD operations.

4. Discussion:

- a. Concerns with the Control of the Safety Envelope: The last DOE ORE raised significant concerns with the safety envelope. Despite these concerns, many deficiencies still remain.
 - 1. LCOs are not effectively incorporated into procedures.
 - (a) The Heating, Ventilation, and Air Conditioning (HVAC) Fail-Safe Shutdown System has no surveillance requirements identified in "Building 12-84, Bay 18 Specific Safety Requirements," referred to as the Building Standard. This system (HVAC controls) was not identified as a critical system by Maintenance (MNL-FO-1101 PROG, Issue No. 2, 11/15/93).
 - (b) The LCO for the fire detection system was not included on the pre-operational checklist used to determine bay operability.
 - (c) The "audible" check for determining operability of the HVAC system can not be easily discerned by the operators.

2. Configuration management of critical systems defined in the safety basis is deficient. Lists of critical systems are not consistent among the Safety Analysis Report (SAR), the Building Standard, and the Maintenance listing of critical systems (MNL-FO-1101 PROG, Issue No. 2, 11/15/93). The Maintenance listing of critical systems was changed during the ORE without review/approval from Risk Management. Also, modifications to critical systems are not reflected in drawings (e.g., the addition of an indicator light to the task exhaust system in 1992 per request by Lawrence Livermore National Laboratory).
 3. Labeling of critical systems is not consistent. Some non-critical systems were labeled as critical (crane/hoist) and some critical systems were not labeled as critical (uninterruptable power supply, HVAC, Task Exhaust).
- b. Concerns with the ORE: The DOE ORE was conducted to the requirements of DOE-AL Directive 54XA. However, DOE-AL had stated to the Board staff that the readiness evaluation would be conducted to the tenets of DOE Order 5480.31. Given this premise, the following concerns were identified by the DNFSB technical staff.
1. Two of the ORE team members had some direct responsibility for work they were reviewing. The two affected areas were Maintenance Management and DOE Facility Representatives.
 2. One team member did not have a background suited to the area being reviewed (Training and Qualifications).
 3. The DOE ORE only assessed the DOE-AAO Facility Representative. There was no assessment of the technical and managerial qualifications of those DOE personnel at the field organization who have been assigned responsibilities for providing direction and guidance to the contractor.
- c. Concerns with Formal Conduct of Operations: The DNFSB technical staff, as well as DOE, has previously identified concerns with the implementation of DOE Order 5480.19 at Pantex. The following observations indicate a lack of progress in implementing conduct of operations for the W79 PFD.
1. Failure of a critical system (HVAC controls and Fail-Safe Shutdown system) during operations did not result in a formal declaration that the bay was no longer operable (no direct log entry or announcement to personnel in the bay of actions taken in response to the LCOs as required by 5480.19 VIII.c.4 and XI.c.3); did not result in any sort of work request, deficiency identification, troubleshooting, or any other activity to understand what had happened (as required by 5480.19 VI & II.c.7); and did not invoke any consideration of

reportability or notification of the DOE Facility Representative (as required by 5480.19 VI and 5000.3B).

2. Lawrence Livermore National Laboratory personnel operated Mason & Hanger equipment (the Task Exhaust fan, which is a critical system, and the N₂ skid) without authorization or training.
3. Operating personnel were not trained and knowledgeable of the safety envelope or the critical systems for Building 12-84, Bay 18. The operators and the bay supervisor, when interviewed, did not know what was meant by a critical system. Operations personnel did not understand the trip logic of the HVAC Fail-Safe Shutdown System.

d. Concerns with Closing of ORR Findings:

1. Supplemental ORR finding CO2.1 stated that some LCOs in the Building Standard, namely the uninterruptable power supply (UPS), were not reflected in the pre-operational checklist. This finding was corrected by revising the procedures. However, the finding is still valid for the fire detection and alarm system.
2. Supplemental ORR finding CM1.6 stated that the classification of systems as critical, important and balance of plant was not included in the Master Equipment List. To compensate for this finding, an interim listing of critical systems was developed as a joint effort between Facility Operations Division and Risk Management (MNL-FO-1101). This list of critical systems did not include several systems from the SAR including UPS, HVAC and HVAC Fail Safe Shutdown System, Emergency Lights, and Contaminated Vacuum.