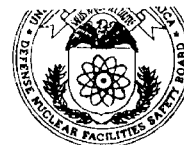


John T. Conway, Chairman  
A.J. Eggenberger, Vice Chairman  
John W. Crawford, Jr.  
Joseph J. DiNunno  
Herbert John Cecil Kouts

# DEFENSE NUCLEAR FACILITIES SAFETY BOARD

625 Indiana Avenue, NW, Suite 700, Washington, D.C. 20004  
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93-0003292



June 15, 1993

Dr. Everet H. Beckner  
Acting Assistant Secretary for  
Defense Programs  
U.S. Department of Energy  
Washington, D.C. 20585

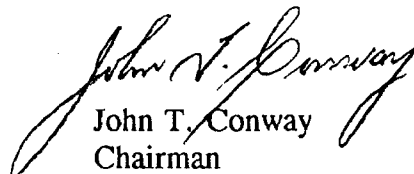
Dear Dr. Beckner:

Staff of the Defense Nuclear Facilities Safety Board (DNFSB) and Outside Experts visited the Albuquerque Operations Office (DOE-AL) and Pantex Plant during the period June 1-4, 1993. The Staff reviewed the status of administrative Order compliance and the self-assessment process at DOE-AL and the defense nuclear sites which report through DOE-AL.

The Staff's reviews indicated that DOE-AL has expended a considerable amount of effort performing self-assessments and is generally following the Defense Programs (DOE-DP) guidance on the subject (DP-AP-202, "Order Compliance Self-Assessment Instruction"). The Board has noted several weaknesses including an apparent lack of progress by the Los Alamos Area Office and the Los Alamos National Laboratory in assessing compliance, a lack of timely review, revision, and approval of Requests for DOE Action (RFA), and an apparent lack of independent review of the self-assessments. The Board staff also agrees with DOE-AL and DOE-DP that the RFAs (which are overdue but still draft) lack sufficient technical detail.

The enclosed trip reports are provided for your information and action, where appropriate, as you prepare the Implementation Plan for the Board's Recommendation 93-1.

Sincerely,

  
John T. Conway  
Chairman

Enclosures

c: Mr. Mark Whitaker, Acting DR-1 w/enclosure  
Mr. Bruce Twining, Manager, Albuquerque Operations Office

**DEFENSE NUCLEAR FACILITIES SAFETY BOARD**

June 10, 1993

**MEMORANDUM FOR:** G.W. Cunningham, Technical Director

**COPIES:** Board Members

**FROM:** M.B. Moury, Pantex Site Program Manager

**SUBJECT:** Pantex Site - DNFSB Staff Trip Report - Administrative Order Compliance

1. **Purpose:** This report documents a review by DNFSB Staff members M. Moury, S. Krahn, J. Preston, J. McConnell, and R. Warther, accompanied by Outside Experts, J. Drain and T. Quale (Systems Planning Corporation) of a trip to assess the DOE Amarillo Area Office (DOE-AAO), and Mason and Hanger - Silas Mason (M&H), and Battelle-Pantex (a subcontractor to M&H) Order compliance self-assessment programs and the status of administrative Order compliance at Pantex during the period June 3-4, 1993.

This trip was a follow up to a DNFSB Staff review conducted from August 31, 1992 through September 4, 1992. The deficiencies noted during that trip were detailed in a trip report dated October 6, 1992 that was not forwarded to the Department of Energy.

2. **Summary:** Based on the DNFSB Staff's review of Pantex Order compliance it is apparent that the initial Order compliance assessments were performed as an administrative review to meet external requirements. Recent actions, especially by M&H, are beginning to integrate the Order compliance process with daily plant operations, as intended by the Board in Recommendations 90-2, 91-1 and 93-1. However, the programs are in their infancy and much work remains. The following specific concerns were developed by the DNFSB Staff:

a. Amarillo Area Office (DOE-AAO)

- (1) DOE-AAO Order Compliance Program: The DOE-AAO Order compliance effort is ad hoc and lacks formality. No local procedure exists that addresses Order compliance self-assessments or actions required to correct non-compliances as required by DP-AP-202, "Order Compliance Self-Assessment." DP-AP-202 is the DP guidance that describes the process to be used to assess the status of DOE Order implementation in DP organizations and facilities.
- (2) Objective Evidence: The description of objective evidence often lacks reference to specific procedures or programs, contrary to the requirements of Appendix B of DP-AP-202.

- (3) Independent Review: There is no apparent independent review process in place to validate the compliance assessments performed as required by both DOE Order 5700.6C, "Quality Assurance," and DP-AP-202.
- (4) Personnel: Training for personnel conducting Order compliance assessments is weak. Order compliance is treated as an administrative task that must be performed to meet external requirements. In most cases, Orders and standards are not a way of operating the Pantex Plant for DOE-AAO and the contractors.

b. M&H and Battelle-Pantex

- (1) Contractor Order Compliance Program: The process used in the past to assess Order compliance at Pantex was less rigorous than the process required by DP-AP-202. However, a new plan is being developed that codifies the requirements of the standard. A recent effort has been undertaken by M&H to strengthen the compliance assessment effort.
- (2) Requests for DOE Approval (RFAs): DOE-AAO and the M&O contractors at Pantex have not prepared Requests for DOE Action (RFAs) to address many deficiencies in Order compliance that have been identified.
- (3) Compensatory Actions: In many of the draft Compliance Schedule Agreements (CSAs), the need for compensatory measures to address known deficiencies was not addressed or was inadequate. Documented evidence that the need for compensatory measures has been considered is lacking for many identified non-compliances. DOE-HQ was not satisfied with the CSAs submitted by DOE-AAO and M&H.

3. **Background:** To facilitate a clear and logical approach to assessing the status of Order compliance, the DNFSB Staff focussed this review on administrative Order compliance -- that portion of the process which is associated with the first criteria of Order compliance in DP-AP-202. Administrative Order compliance is referred to in DP-AP-202 section 4.2 as, "applicable DOE Order statements (mandatory and non-mandatory) are included in appropriate documented policies, programs, and procedures." The second aspect of Order compliance, or "adherence-based Order compliance", is taken from the second part of the definition in DP-AP-202, "...documented policies, programs, and procedures are demonstrably adhered to during office or facility activities." This aspect of Order compliance will be reviewed in future trips to Pantex.

During the DNFSB Staff review only draft Requests for Approval (RFA) were available because DOE-HQ had recently disapproved all the DOE-AAO and M&H CSAs. According

to DOE-HQ: (1) the CSAs did not describe the nature of the non-compliances relative to Pantex operations; (2) the descriptions of the problems were not specifically related to the non-compliances; and (3) the risks associated with the noncompliance were unclear and the associated compensatory measures were not adequate.

4. Discussion:

a. Amarillo Area Office (DOE-AAO)

- (1) DOE-AAO Order Compliance Program: The DOE-AAO Order compliance effort is ad hoc and lacks formality. No DOE-AAO procedure exists to guide the Pantex Order compliance effort as required by DP-AP-202. At the time of the DNFSB Staff's review, there was no plan or schedule for the development of a DOE-AAO procedure.
- (2) Objective Evidence: The description of objective evidence often lacks reference to specific procedures or programs, contrary to the requirements of Appendix B of DP-AP-202; for example:
  - (a) For DOE-AAO compliance with DOE Order 5610.11, extensive files are maintained in support of nuclear explosive safety. While these files provide extensive evidence of program execution, no document cited in the objective evidence indicates what is required to be in these files for DOE-AAO to properly execute its functions.
  - (b) In addition, for DOE-AAO compliance with DOE Order 5481.1B, contractor Safety Analysis Reports (SARs) are cited as evidence for DOE-AAO compliance. No reference is made to DOE-AAO procedures or programs that meet the requirements of the Order.
- (3) Independent Review: There is no independent review process in place to validate the compliance assessments performed as required by both DP-AP-202, and DOE Order 5700.6C, "Quality Assurance." DP-AP-202 requires each responsible organization to use its approved quality assurance program to control and verify the compliance self-assessment process. This requirement is also expressed in DOE Order 5700.6C, Criterion 10, Independent Assessment, that states "Planned and periodic independent assessments shall be conducted to measure item quality and process effectiveness and to promote improvement." In addition, there is no evidence that the DOE-AAO Compliance Coordinator has implemented quality requirements on the compliance self-assessment process as required by DP-AP-202.

- (4) Personnel: Training for DOE-AAO personnel conducting Order compliance assessments is weak. Previous training consisted of informal discussions and verbal guidance on the conduct of the self-assessments. There is little evidence that the requirements of DOE Order 5700.6C, Criterion 2, "personnel shall be trained and qualified to ensure they are capable of performing their assigned work," is being met at Pantex for Order compliance activities. Also, there is little evidence that the DOE-AAO Compliance Coordinator is providing technical direction to line and functional managers on the Order compliance self-assessment process as required by DP-AP-202.

b. M&H and Battelle-Pantex

- (1) Contractor Order Compliance Program: The process used in the past to assess compliance at Pantex was less rigorous than the process required by DP-AP-202 Revision 2. Guidance provided by AL stated that compliance could be met if plans, policies, or procedures exist OR evidence existed that the requirement was being followed in the field through previous audits, outside agency reports, or as attested to by a Subject Matter Expert. This violates DP-AP-202 that states "Compliance exists when applicable DOE Order statements (mandatory and nonmandatory) are included in appropriate documented policies, programs, procedures, and practices, AND these documented policies, programs, procedures, and practices are demonstrably adhered to during office or facility activities." However, a new plan is being developed that codifies the requirements of DP-AP-202. A recent effort has been undertaken by M&H to strengthen the compliance assessment effort. The effort is focusing on assessing compliance with requirements applicable to Zone 4 and the W79 Preparation for Disposal (PFD) activities, which will be subject to Operational Readiness Evaluations (OREs) this year.
- (2) Requests for DOE Approval (RFAs): DOE-AAO and the M&O contractors at Pantex have not prepared Requests for DOE Action (RFAs) to address many deficiencies in Order compliance that have been identified. For example, in the assessment of DOE Order 5480.7, "Fire Protection," M&H listed requirements 9.c.(1)-(3), dealing with administrative requirements of the fire protection program, as "deficient." According to DP-AP-202 (section 4.4), deficiencies only apply to partial compliances with non-mandatory statements (or "improvement" to compliance with mandatory statements). Even for non-mandatory statements, deficiencies identify conditions where the requirement is met but not proceduralized; at Pantex, these "deficient" requirements are not met or proceduralized for at least one facility.

Based on the evidence cited in the description section, these requirements should be listed as non-compliances and cite an RFA.

- (3) Compensatory Actions: The need for compensatory measures to address known deficiencies was not addressed or was inadequate. Documented evidence that the need for compensatory measures has been considered is lacking for many non-compliances identified by DOE-AAO and M&H. In addition, many draft Compliance Schedule Agreements (CSAs) reviewed lacked statements on the technical and other reasons, which explain why the compensatory measures, or lack of compensatory measures, are adequate to protect the public health and safety. For example in the draft RFA CSA-5 developed for DOE Order 5480.5, a statement is made that "no compensatory action is required." However the statement lacks a description of the basis for the statement and objective evidence that the basis for the belief is technically adequate. In the draft CSA-5A revision the statement also inadequately describes the basis for the belief that adequate safety margin exists.

The review of DOE Order 5820.2A stated that all requirements for the management of transuranic waste in Chapter II of the Order are not applicable to Pantex. The justification states that transuranic waste are not generated at Pantex. However, the recent incident with the W48, and upcoming W79 activities have or may generate transuranic waste in the future. A plan has been submitted to handle transuranic material, including shipment of the material to Hanford Site for storage, but the approval date and implementation schedule is not known. No RFA has been submitted, and the requirement for interim compensatory measures has not been assessed.

**5. Future Staff Actions:**

- a. As noted above the staff will continue to assess the adherence-based aspect of compliance with DOE Orders during future reviews.
- b. This trip only covered a subset of the DOE Orders of safety significance. Future reviews will include an assessment of the status of administrative Order compliance with other DOE Orders.
- c. The Staff will follow-up on corrective actions (both existing and new) created to address the issues identified above.

- d. All Staff topical area review trips to Pantex will include an assessment of the level of administrative order compliance for the relevant Orders in the review.

## DEFENSE NUCLEAR FACILITIES SAFETY BOARD

June 11, 1993

**MEMORANDUM FOR:** G.W. Cunningham, Technical Director

**COPIES:** Board Members

**FROM:** S.L. Krahn, Assistant Technical Director, Weapons Programs

**SUBJECT:** Trip Report of Order Compliance Review at the DOE  
Albuquerque Operations Office.

**1. Purpose:** This report documents the results of a DNFSB staff visit to the DOE Albuquerque Operations Office (DOE-AL) to gather data in support of a review of the Recommendation 93-1 Implementation Plan later this year and to review the program for and status of administrative Order compliance at DOE-AL. The scope of this review included those Area Offices and contractors which report to DOE-AL. The review was conducted by S. Krahn, J. McConnell, A. Jordan, J. Preston, and R. Warther of the DNFSB staff and two Outside Experts, J. Drain and T. Quale.

**2. Summary:** Based on a sampling of twenty DOE Orders, the status of administrative compliance with DOE Orders at DOE-AL and most of the subordinate elements reporting to DOE-AL appears to be generally satisfactory; however, a number of significant programmatic deficiencies exist. These programmatic deficiencies include both compliance issues and self-assessment issues.

- a. Requests for DOE Approval (RFAs): Progress on RFAs (e.g., CSAs, Exs, and STCSs) appears to be well behind the schedules presented to the DNFSB. The DNFSB staff, DOE-AL, and DOE Defense Programs (DP) all have noted that the current draft CSAs generally have insufficient technical evaluation of the risks of being non-compliant, the appropriateness and timeliness of corrective actions, and the justification for continued operations. In particular, the CSAs lacked an adequate evaluation of compensatory measures. Many of these CSAs were written in late 1992 or early 1993 but apparently are only now beginning to be reviewed and revised.
- b. Independent Review: There was little evidence of an independent review process to evaluate and validate the self-assessments. The DP Headquarters instruction governing Order compliance self-assessments at DOE-AL and all DP sites (DP-AP-202, "Order Compliance Self-Assessment") requires each responsible organization to use its approved quality assurance program to control and verify the compliance self-assessment process. This general requirement is also expressed in DOE Order 5700.6C, "Quality Assurance".



- c. Self-Assessments at Los Alamos: The Los Alamos National Laboratory (LANL) and the Los Alamos Area Office (LAAO) have not yet adequately assessed their compliance with many of the DOE safety Orders of concern to the Board.
- d. DOE-AL Self-Assessment Procedure/Plan: No local DOE-AL procedure or plan exists to guide the self-assessments at DOE-AL as required by DP-AP-202. This procedure is particularly important given the large number of sites, offices, and functional entities involved in the task and the relatively small number of people at DOE-AL responsible to direct the effort.
- e. Integration of Order Compliance with Other Assessments: The documentation presented for review indicated that the Sandia National Laboratory and perhaps others are attempting to integrate Order compliance assessment corrective actions with corrective action plans required for other reviews such as Tiger Team assessments. This integrating effort is commendable but the results must be evaluated carefully to ensure the systematic rigor required by DP-AP-202 is not lost. Further, in accordance with one of the tenets of Recommendations 90-2 and 93-1, this integrating effort should be extended to include assessing compliance with Orders as part of functional and performance-based assessments as well as the resultant corrective action plans.

**3. Background:** This review was the initial staff assessment of the status and process of administrative Order compliance at DOE-AL, LAAO, LANL, Kirtland Area Office (KAO), Sandia National Laboratory (SNL), Dayton Area Office (DAO), the Mound Plant, Pinellas Area Office (PAO), and the Pinellas Plant. To facilitate a clear and logical approach to assessing the status of Order compliance, the DNFSB Staff focussed this review on administrative Order compliance -- that portion of the process which is associated with the first criteria of Order compliance in DP-AP-202. Administrative Order compliance is referred to in DP-AP-202 section 4.2 as, "applicable DOE Order statements (mandatory and nonmandatory) are included in appropriate documented policies, programs, and procedures." The second aspect of Order compliance, or "adherence-based Order compliance", is taken from the second part of the definition in DP-AP-202, "...documented policies, programs, and procedures are demonstrably adhered to during office or facility activities." This aspect of Order compliance will be reviewed in future trips to ALO sites.

**4. Discussion/Observations:** Overall, the staff's review of administrative Order compliance with twenty DOE Orders indicated that a considerable amount of effort had been expended by the personnel at the various sites who conduct the assessments. The potential benefits that could have been derived from this effort have been limited by the apparent lack of aggressive follow-through on actions required as a result of the reviews (i.e., RFAs) and the apparent lack of independent review of the self-assessments themselves.

- a. Requests for DOE Action: RFAs are one of the principle vehicles of change to improve daily operations and management of defense nuclear facilities as a result of performing Order compliance assessments. The effectiveness and timeliness of this change is diminished if the RFAs are not produced with sufficient technical rigor or are not promptly reviewed and implemented. The draft RFAs reviewed by the staff generally lacked sufficient technical detail to assess the risks, corrective actions, justification for continued operations (JCO), and particularly, compensatory measures. Additionally, DOE's progress on reviewing, revising, approving, and implementing the RFAs lags the schedules presented to the Board.
- (1) Technical Detail: DP-AP-202 requires CSAs to contain sufficient technical detail to allow an educated reader, without any other references, to understand the risk of being out of compliance, the risk after any proposed compensatory measures are in place, the effect of corrective actions to bring the organization into compliance, and the justification for continued operations. The DNFSB Staff agrees with DOE-AL that many of the CSAs were deficient in one or more of these areas.
- (2) Review and Approval: The lack of required technical detail has slowed the review and approval process; however, most of the original assessments were completed in 1992 or before and most of the CSAs have been available for review for more than six months. The review process appears unnecessarily slow. None of the CSAs for nuclear or weapons facilities under DOE-AL had been approved as of June 2, 1993.
- b. Independent Review: The Order compliance self-assessments currently do not appear to be receiving independent review at any level (including DP). The staff determined that there were numerous deficiencies in the self-assessments including non-compliances which were not addressed by an RFA. Additionally, the staff noted numerous cases where the objective evidence of compliance cited as proof that a requirement was met failed to satisfy the conditions required by Appendix B of DP-AP-202.
- c. Los Alamos: The progress achieved at the LAAO and LANL in assessing compliance lags behind all other DP sites evaluated by the DNFSB thus far. During the review, the staff did not discern an effort to accelerate these reviews.
- d. Order Compliance Plan: DP-AP-202 requires each Compliance Coordinator to develop a plan to guide the self-assessment of DOE Order implementation status for his/her organization. No such plan exists at DOE-AL. It appears

that the need for an institutionalized program at DOE-AL may be even greater than at most other organizations because the DOE-AL Compliance Coordinator is required to interface with and provide direction to more than a dozen DOE and contractor organizations as well as several senior functional managers at DOE-AL. A systematic approach with senior management support could also improve several other deficiencies noted during the Staff's review such as:

- (1) DOE-AL does not seem to have delineated methods for validating the accomplishment of Order requirements which have been delegated to the Area Offices or some other entity.
  - (2) Technical problems with data submission and objective evidence of compliance such as those described in b. above can be linked to inadequate training of the personnel involved in Order compliance self-assessments.
- e. Integration of Order Compliance and Other Types of Assessments: The Staff identified a general attempt at SNL and individual attempts at other DOE-AL sites to integrate at least the corrective actions required as a result of Order compliance self-assessments with those required to correct deficiencies noted during other (mostly functional) reviews. This effort is commendable and is consistent with one of the Board's objectives that DOE and its contractors include Orders and standards as a foundation for daily activities. As a part of this integrating effort, it is important to ensure that all the requirements of an RFA as specified in DP-AP-202 are captured in the response. Particularly, the need to analyze risk and implement required compensatory measures must continue and any needed administrative improvements (e.g., plans, programs and procedures) must be addressed.

**5. Future Staff Actions:** The Staff will continue to review the implementation of Board Recommendations 90-2 and 91-1 at DOE-AL sites and facilities. These reviews will include both adherence-based assessments and administrative compliance assessments of other Orders. Similarly, the Staff will continue to gather information to support the review of the Recommendation 93-1 Implementation Plan due to the Board in August 1993. Some specific future Staff actions include:

- a. Reviews of Area Offices and Contractors: Over the next several months, the Staff will review the status of Order compliance at DOE-AL Area Offices and contractors including LAEO, LANL, DAO, the Mound Plant, KAO, and SNL.
- b. Reviews of RFAs: The Staff will continue to review RFAs as they are available. The Staff will also monitor implementation of corrective actions when the RFAs are approved.

- c. Self-Assessment Plans: The staff will review Compliance Coordinator Self-Assessment Plans as they are available.
- d. Topical Reviews: All Staff topical review trips to DOE-AL sites will include an assessment of the level of administrative Order compliance for the relevant Orders in the review.