Department of Energy
Albuquerque Operations Office
P.O. Box 5400
Albuquerque, New Mexico 87185-5400

02-0000071

DEC 07 2001

The Honorable John T. Conway
Chairman
Defense Nuclear Facilities Safety Board
625 Indiana Avenue, N.W.
Suite 700
Washington, D.C. 20004

Dear Mr. Chairman:

Consistent with the Department's Implementation Plan (IP) for the Defense Nuclear Facilities Safety Board (DNFSB) Recommendation 98-2, Revision 1, enclosed are two deliverables:

- Commitment 4.1.2, "Assessment of TBP-901 Implementation"—This is a follow-on commitment to Commitment 5.2.2 within the original IP, and was due November 2001. The purpose of the assessment was to determine the adequacy of contractor and design laboratory implementation Technical Business Practice (TBP-901), "*Integrated Safety Process of Nuclear Weapons Operations and Facilities.*" The Office of Amarillo Operations (OAO) completed their assessment of the Pantex contractor implementation and the Office of Weapon Programs Management (OWPM) completed their assessment of the design laboratory implementation of the referenced TBP. The results and recommendations of both assessments will be considered in the pending Revision 2 of the IP. Both assessments are enclosed representing delivery of the commitment.
- Commitment 4.4.3, "Revisions to AL Supplemental Directives 452.1 and 452.2 issued and Impact Analysis and DOE-approved Implementation Plan (as required)"—This commitment carried over from Commitments 5.4.2 and 5.5.1 within the original IP and was due in February 2001. The purpose of this commitment is for AL to issue revisions to its supplemental directives to align with changes to the DOE Orders 452.1 and 452.2 and to invoke applicability of the revised directives through the existing contract structure for the Pantex Plant. The DOE orders were published August 2001, and consistent with the revised IP, the supplemental directives were published on November 1, 2001, and provided electronically to the DNFSB staff representing delivery of this commitment. Consistent with the Department's existing contract structure for the Pantex Plant, the request for their impact analysis to achieve compliance with the new supplemental directives was issued on November 1, 2001. The Pantex Plant contractor is provided 30 days to provide the impact analysis or request additional time to complete their analysis. The final result of the Department's impact analysis request will be provided to the Board upon receipt.

The following provides information regarding the outstanding commitments due through November 2001:

- Commitment 4.3.3, "DOE-approved BIO Module for On-Site Transportation and associated TSR and DOE-approved Implementation Plan for Transportation Controls" — This commitment is a follow-on from the original approved IP actions associated with Commitment 5.6.3, Deliverable #3, and was due February 2001. The purpose of this commitment is to address the hazards associated with on site transportation of nuclear explosives by developing and establishing the technical and analytical basis for site-wide TSR transportation controls. However, the Department anticipated that this commitment would not be completed on time and provided this information to the Board during the Department's briefing on December 7, 2000. The Department communicated to the Board that the complexity and level of analysis required to address all weapon configurations prevented timely delivery. The Department communicated to the Board that they were working with the Pantex M&O to simplify the weapon response analysis by breaking the On-Site Transportation module into phases, beginning with the full-up module and then incorporating the enhanced transportation cart into the partial phase. It was previously reported that the full-up module would be issued in September 2001. This date was contingent on receipt of the laboratory weapon response input. All three laboratories completed and provided their weapon response input as of November 2001. The module and associated TSRs are completed and are in internal Pantex contractor review. The full-up module is not expected to be approved until February 2002 to allow time to complete reviews and any revisions resulting from the reviews and final submission to the Department. The Department has reviewed and commented on all draft chapters and does not expect to generate significant additional comments that would affect the expected February 2002 approval date
- Commitments 4.3.10 and 4.3.11, Conceptual Design Report for a project to replace the fire alarm system (4.3.10, due April 2001) and authorization of a line item construction project (4.3.11, due June 2001). — These are new commitments as a result of the revised 98-2 IP. The purpose of these commitments is to replace the Pantex Plant fire alarm system. The status of these commitments was provided within a letter from the Department to the Board, dated June 15, 2001. The letter explains how the intent of the commitments is being met through a series of expense-funded projects rather than a line item project. These two commitments will be addressed within the Revision 2 of the IP.
- Commitment 4.4.4, "Revisions to the NV Supplemental Directives 452.1 and 452.2 issued and an Impact Analysis and DOE-approved Implementation Plan (as required)"— This commitment carries forward the activities associated with Commitments 5.4.2 and 5.5.1 from the original IP and was due February 2001. The purpose of this commitment is to ensure that the revisions to the Nevada Operations Office (NV) supplemental directives align with the changes to the published DOE Orders 452.1 and 452.2. This commitment also ensures that the

Operations Office (NV) supplemental directives align with the changes to the published DOE Orders 452.1 and 452.2. This commitment also ensures that the Department will invoke applicability of the revised directives through the existing contract structure for the Nevada Test Site. The M&O contractor and design laboratories will then provide an impact analysis and an implementation plan, if warranted, to achieve compliance with the new requirements. . NV has stated that their orders are in the 30-day comment period and expect the commitment will be completed early 2002.

If you have any questions, please contact me at 505-845-6050, or have your staff contact Dan Glenn at 806-477-3182 or Luis Paz at 505-845-5059.

W. John Arthur, III
Deputy for Program Execution

Enclosures

cc w/enclosures:
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United States Government | Department of Energy

memorandum

Albuquerque Operations Office
Amarillo Area Office

DATE: NOV 16 2001

REPLY TO ATTN OF: AAO:OAM:SCE

SUBJECT: Amarillo Area Office Assessment of DNFSB 98-2, TBP-901 Integrated Safety Management Implementation at the Pantex Plant

TO: Richard Glass, Manager, Albuquerque Operations Office

Commitment 4.1.2 of revision 1 to the 98-2 Implementation Plan required the Department of Energy to assess the adequacy of the Pantex M&O Contractor's implementation of TBP-901. The attached report documents that assessment. The results and recommendations made in this report will be considered in the pending rewrite and resubmittal of the 98-2 IP. The Amarillo Area Office considers the Pantex portion of this commitment closed.

If you have any questions, please contact Steve Erhart at (806) 477-6150.

for

Daniel E. Glenn
Area Manager

Attachment

cc w/attachment:
D. White, AAO, 12-36
M. Reaka, PWT Ltd, 12-36
J. Kirby, AAO, 12-36
J. Underwood, NA-124, HQ
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United States Government Department of Energy

memorandum

Albuquerque Operations Office
Amarillo Area Office

DATE: NOV -6 2001

REPLY TO ATTN OF: AAO:POT

SUBJECT: Amarillo Area Office (AAO) Assessment of DNFSB 98-2, Technical Business Practice (TBP) Integrated Safety Management Implementation at the Pantex Plant

TO: Daniel E. Glenn, Area Manager, AAO

The AAO Production Operations Team, Program Analyst conducted an analysis of BWXT's implementation of TBP-901. This assessment was performed to complete a DOE commitment to the DNFSB associated with recommendation 98-2. The assessment concluded although there was some linkage from the M&O contract to implementing documents, the TBP implementation was not completely integrated across all BWXT organizations required to comply with its requirements.

The attached details my findings and contains specific recommendations.

Please contact me at extension 5429 for further information or questions.

David B. Ryan
Senior Program Analyst, AAO

Attachment

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AAO Assessment

of

DNFSB 98-2

TBP-901

Integrated Safety Management Implementation at the

Pantex Plant.

David B. Ryan
Senior Program Analyst
Amarillo Area Office

John Kirby
Acting AAM Weapon Programs
Amarillo Area Office

AAO Assessment of DNFSB 98-2, TBP-901 Integrated Safety Management implementation at the Pantex Plant.

Executive Summary:

The Amarillo Area Office Productions and Operations Team Analyst performed an assessment of BWXT's implementation of TBP-901 (Integrated Safety Process for Nuclear Weapons Operations and Facilities). The assessment was performed to conclude closure actions on commitment 4.1.2 in the DOE Revised Implementation Plan for Accelerated Safety Management Improvements at the Pantex Plant. The assessment was performed from October 15, 2001 through November 2, 2001.

Deficiencies were found in the implementation of TBP-901in that BWXT does not have a programmatic document that corresponds to the requirements in TBP-901. See recommendation number 1.

Although the flow of the documentation could be traced from the Contract to the SRIDs and then to a BWXT Standard or IOP there was not a BWXT document referenced, or found that fully addressed all of the sections contained within TBP-901 that are relevant to Pantex from either a programmatic or functional level. See recommendation number 1.

Methodology

The assessment tracked (by reference) the implementation of TBP-901from the M&O Contract to the implementing documents called out in SRID MIC-1000 flow down matrix. The TBP-901 is transmitted to BWXT through SRID MIC-1000 (Management Integration & Controls Document), Revision 8. Specifically MIC SRID MIC-1000, section 1.1.2.a, 1.5.2.a, 1.5.2.b, and 1.6.2.a. The paragraphs flow down the requirements to BWXT standard, STD-0148 Integrated Process for Seamless Safety identified in the Management Integration and Controls Flow-down Matrix, STD-7012 Functions of Weapon Program Managers, and BWXT IOP-0729 Program Management Directorate Project Plan Development, Issue 1.

Assessment Results

The assessment revealed that there is a linkage between TBP-901 and a BWXT procedure for management of an SS-21 program. BWXT IOP-0729 Program Management Directorate Project Plan Development, Issue 1, called out in SRID MIC-1000 (1.5.2.a) flow-down matrix and does follow TBP-901 as far as project deliverables and responsibilities. IOP-0729 references other BWXT Standards and IOP's as well as TBP-901, but it does not fully address all of the aspects of TBP-901 implementation, such as Facility Layouts, Controls, Establishment of Task Teams, and Project Documentation.

The linkage identified in MIC SRID –1000 (1.1.2a) flow-down matrix is to BWXT STD-0148. This is a Plant Standard for writing and changing SS-21 procedures, but does not address any other potions of TBP-901, such as Tooling, Authorization Basis, or Hazards Analysis.

BWXT STD-7012 Paragraph 3.8.1 (b) indicates that the Weapon Program Manager leads the Interagency Weapon Program Project Team and (c) Leads Seamless Safety (SS-21) integration, but does not address other aspects of TBP-901 implementation listed above.

BWXT Standard STD-7102, Functions of the Program Management Directorate called out in BWXT IOP 0729 and SRID SRID MIC-1000, section 1.1.2.a, flow-down matrix addresses program management for SS-21 Projects in section 3.88 (Integrated Safety Management), but only nominally. Section 3.8.2 (b) states that the Weapon Program Manager "Leads the Interagency Weapon Project Team".

BWXT has implemented the IWAP, which is a schedule for implementation of SS-21 into specific weapons programs. The BWXT SRID's identify TBP-901 as the standard that is used for the implementation of the Integrated Safety Process for Nuclear Weapons Operations and Facilities and TBP-901 identifies D&P Manual Chapter 11.3 that gives direction on the establishment of the Project Team and Task Teams as well as DOE and laboratory involvement, but no corresponding BWXT document was found.

During the course of this analysis it was not obvious that there was a connection between TBP-901 and the BWXT procedures. A case in point is SRID MIC-1000 section 1.5.2a (Milestone Reviews) and the implementation matrix that calls out IOP-729 Program Management Directorate Project Plan Development. Section 3.2.2.6.1 of IOP-719 addresses Milestone 0 and states that the Project Plan shall identify the number of formal project reviews (i.e., Milestones). This IOP should have been called out in sections 1.1.2.a Nuclear Weapons, 1.3.2.b Operational Controls and 1.6.2.a Weapon Mission as well.

BWXT Program Management generally uses the principals of TBP-901 and projects have generally followed the scope and outline of the TBP in bringing SS-21 projects on line, but there is no institutional system or procedure in place that directs BWXT Program Management's in its application. See Recommendation number 1.

Deficiencies:

The following paragraphs are examples of problems found with the documents (content) during this analysis.

- The implementing documents identified in the SRIDs are EP401110, Issue C that has been superceded by TBP-901.
- TBP-901 is called out in the SRIDs, but they identify the last issue (A) and not the current issue (B).
- BWXT IOP-0729, Paragraph 4.1 (Project Team) identifies MHC/DZ as the Pantex contractor.
- Standard STD-7012, STD-7401, STD-0148 and Internal Operating Procedure IOP-729 are identified as Mason and Hanger Corporation Documents and not the current contractor.
- D&P 11.3 identifies MHC as the Pantex operating contractor and not BWXT.

General Comments:

It is apparent from this analysis that significant work needs to be done to tie the contractual agreements to released BWXT documents that control activities (programmatic and functional) at the Pantex Plant. BWXT has not rewritten the MHC documents (Standards, IOP's etc) into BWXT documents in a timely manner.
The Pantex Manuals, Standards, and IOP's, are on the Pantex Intranet and available, but there appears to be no logic in the numbering system and the list (available on the Intranet) is not complete. The lack of logic or organization in the document numbering system makes it extremely difficult to find documents with similar links. See Recommendation number 2.

Portions of TBP-901 can not be implemented due to the verbiage used.

- Section 5.4 (Operating Facility) Paragraph 1, "check of the operating facility layout to assure that all authorized material, tooling, equipment Nuclear Explosive, nuclear explosive components, etc, are present, that they are properly located, and that nothing unauthorized is present." A layout does not list all of the items identified in this paragraph.
- Section 5.5 Equipment and Layout paragraph 2 states "The layout shall facilitate positive verification that tooling and equipment are operationally ready." The procedures and/or the pre-operational

checklist have specific statements on equipment operability and the layout can facilitate positioning to verify this, but should not be included as a requirement due to the quantity of equipment.

- Section 5.5 Equipment and Layout, Paragraph 4, states; "The layout design shall preclude any possibility of unintended contact or striking of the HE with the tooling and equipment, or dropping of the HE." The layout cannot perform this function.

Recommendations:

1. It is recommended that BWXT Pantex develop documents that implement TBP-901 on a programmatic and functional (development of task teams, tooling, process layouts, etc) level. The documents should also address the areas that can not be implemented and contain a matrix that identifies all of the BWXT reference documents that flow down the requirements.

2. BWXT should develop a General Operating Procedures (GOP) manual that would contain segregated sections, uniquely numbered (i.e. General, Personnel, Quality, Engineering, Line operations, etc.) to facilitate document tracing. The GOP should also contain a matrix on document hierarchy.

Reference Documents:

M&O Contract DE-AC04-00AL66620
Appendix E, Modification M010, List of Applicable Directives
MIC-1000 Management Integration & Controls Document, Revision 8
Standards Requirement Identification Document (SRID), Management Integration and Controls (MIC)-1000, sections, 1.1.2.a, 1.5.2a, 1.5.2.b, and 16.2.a.
TBP-901, Issue B
Development and Production Manual chapter 11.3, issue 6/30/99
BWXT STD-0148 Integrated Process for Seamless Safety
BWXT IOP-729 Project Management Directorate Project Plan Development
BWXT STD-7401 Weapons Program Project Team

United States Government **Department of Energy**

memorandum

Albuquerque Operations Office

DATE: NOV 2 7 2001

REPLY TO
ATTN OF: OWP:SRS (845-4823)

SUBJECT: Office of Weapon Programs (OWP) Assessment of Defense Nuclear Facility Safety Board (DNFSB) Recommendation 98-2, Rev. 1, Commitment 4.1.2, Assessment of TBP-901 Implementation.

TO: Rick Glass, AL Manager

Background:

The referenced commitment was included within the 98-2 Revision with the intent for the Department to assess the adequacy of the Pantex Operating Contractor (BWXT-PX) and Design Agency (DA) implementation of Technical Business Practice (TBP) 901. The BWXT-PX assessment has been completed by the Amarillo Area Office and is provided under separate cover. The OWP assessment is provided below and is focused on the DAs.

Executive Summary: TBP-901 reflects the requirements of the Integrated Safety Process (ISP) as defined by the Department within Development and Production (D&P) Manual Chapter 11.3. The objective of ISP is to systematically integrate safety into the management and work practices at all levels. TBP-901 provides the framework for how the DA's safety and quality requirements are incorporated into process development consistent with ISP principles. Formal documentation of these requirements is provided to BWXT-PX through the Weapon Safety Specifications (WSSs), Engineering Releases (ERs) and other Design Agency Specifications. D&P Manual Chapter 11.3 and TBP-901 provides the requirements and guidance for how these documents support concurrent process and hazard analysis development. Ultimately the documents form the basis of the Hazard Analysis Report and are used when developing the Pantex controls and work practices associated with weapons.

Review of the Nuclear Explosive Operation (NEO) authorizations of W62 Step 1, W76, W78 Step 1; and W88 Step 1 revealed that the responsible DAs provided the WSSs and ERs to BWXT-PX.

Methodology: The assessment began with traceability of the contract requirement for implementation of TBP-901. All TBPs are required to be implemented through the incorporation of AL 56XB into the DA contracts. Both the Los Alamos National Laboratory (LANL) Appendix G and the Sandia National Laboratory (SNL) Appendix J specifically list the required supplemental directive. The Lawrence Livermore National Laboratory (LLNL) Appendix G does not cite AL 56XB (see Recommendation #1).

Next, the Department's documentation was reviewed for the last four NEO authorizations to determine if the WSSs and ERs were provided to the BWXT-PX for their use in developing the associated documentation, controls, and work practices associated with the W62 Step 1, W76, W78 Step 1, and W88 Step 1 (See Recommendation #2).

Recommendations:

1. While it is apparent that several attempts have been made to ensure that the LLNL contract contains AL 56XB, LLNL has not incorporated the supplemental directive. However, through performance of the work required by TBP-901, it is apparent that LLNL is following the guidance (e.g., review of the W62 Step 1 provides the demonstrated use of TBP-901 and initial review of the W62 Step 2, indicates that LLNL continues to apply TBP-901.) However, as budgets continue to diminish and mission requirements continue to increase, there is no contractual assurance that LLNL will continue to follow TBP-901 without the listed requirement. In addition, there are further requirements directly related to integrated safety within AL 56XB that pertain to LLNL in their support of BWXT-PX as well as the Department. It is recommended that AL 56XB be added to the LLNL contract.

2. While it is apparent that all three laboratories have provided WSSs and ERs in support of the ISP and NEO authorizations for the four weapon systems listed herein, there is room for improvement in the areas of utility and timeliness. Review of the WSSs and ERs indicate that several re-writes were necessary to adequately convey the information needed by Department and BWXT-PX in order to appropriately incorporate the information within authorization documents such as the hazard analysis, procedures, etc., as well as Pantex documents such as Safety Analysis Reports (SARs), Technical Safety Requirements (TSRs), etc. Such re-writes may be attributed, in some cases, to inadequately defined requirements for the WSSs.

   The review also indicated that the WSSs or ERs were received later than scheduled. The lateness could be attributed to the number of WSSs re-writes; and, since ERs are not released until suitable input is received from BWXT-PX, there appears to be a lack of communication between the labs and BWXT-PX in understanding what format or type of suitable input is expected from BWXT-PX in support of the ER.

   Therefore, it is recommended that the three laboratories work with both BWXT-PX and the Department to accomplish the following:

   a. Complete the re-write of D&P Chapter 11.8, "Integration of Weapon Response into Authorization Bases at the Pantex Plant" to clearly define the Department's requirements.
   b. Define the nature of the ERs to a) validate the weapon response information, and b) validate the usage of the weapon response information.
   c. Timely release of the WSSs with sufficient information to identify hazards as a baseline, including weapon response screening tables.
   d. Determine the most effective way to communicate and coordinate information between the agencies on commitments, processes, and deliverables to ensure timely deliverable and usability of the information (e.g. efforts to re-write the Understandings and Agreements section for the Tri-Lab Office provide language to strengthen the communication among all parties.

e. Update the TBP-901 to reflect changes to Section 11 and work practices at the sites (e.g. use of program specific TSRs versus ABCDs).

Conclusion:

All three laboratories have implemented TBP-901 as currently written. However, it is apparent that improvements to the documentation and work processes will strengthen the objective to systematically integrate safety into the management and work practices at all sites.

Luis A. Paz
Deputy Director
Office of Weapon Programs

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