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

NOV 30 2000

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 as revised; the following provides information regarding the three (3) deliverables due November 2000.

- Commitment 4.2.6, "Revised D&P Manual Chapter 11.7"—This is a follow-on commitment to 5.3.2 from the original IP as a result of the revision to the 98-2 IP. As the Department, design laboratories, and Pantex Plant operating contractor applied the requirements of the original D&P Chapter 11.7, "Nuclear Explosive Operations Change Control", a number of problems have arisen. The Department evaluated Chapter 11.7 for improvements to establish clearer criteria/guidance for the Nuclear Explosive Study (NES) Change Evaluation process and a better linkage to the Unreviewed Safety Question (USQ) process. The product is the enclosed revised D&P Manual Chapter 11.7, which was published on November 29, 2000. Publication of the revised chapter represents completion of this commitment.

- Commitment 4.3.5, "Additional DOE-Approved TSR controls derived from the NES Master Studies"—This commitment is a new commitment. The experience gained through the development of weapon-specific HAR and the performance of NES Master Studies has demonstrated the need for additional "generic" TSRs applicable to nuclear explosive operations involving multiple weapon programs. The NES Master Studies identified a number of positive measures. Some of these positive measures may warrant inclusion as TSR controls prior to completion of all BIO/SAR module upgrades. However, the controls are not clearly identified and do not have supporting analysis. The Pantex Operating Contractor has attempted to submit a final product; however, the two attempts have not been successful thus far. The Amarillo Area Office (AAO) is working with the Pantex Operating Contractor to resolve these issues and to update the

site-wide TSR to include controls derived from the NES Master Study positive measures. The AAO NES Team in conjunction with the Authorization Basis Staff have compiled a list of important attributes from the master studies and have provided the list back to the Pantex Operating Contractor along with direction to develop tooling and test equipment controls. This is expected to better focus the contractor's efforts. It is anticipated that the controls will be developed and approved within the next two months.

- Commitment 4.4.2, "Revisions to DOE Orders 452.1, 452.2, and DOE-STD-3015 issued"—This commitment is carried over from 5.4.2 and 5.5.1 within the original IP. Though the Department successfully released the orders and standards for comment through the formal process, significant comments have been received and are in process of being resolved. The nuclear weapons community has reached consensus on key elements within the orders and standard including deletion of the revalidation process, inclusion and implementation of senior personnel on the NES Study Group, and including explicit qualification requirements. These improvements have been implemented into the current NES Study process. However, one outstanding issue that still requires agreement among the nuclear weapons community and the Board which will gain the most benefit for the Department while retaining a rigorous NES process is the addition of the operational safety review (OSR) process.

- Commitment 5.2.2, "Briefing and written report"—The Quarterly report which reflects the period from July 1, 2000, through December 31, 2000, is attached. The extended reporting period is a result of the transition from the original IP and the revised 98-2 IP. The briefing is scheduled for December 6, 2000.

The Department proposes closure of those commitments indicated as complete. If you have any questions, please contact me at 505-845-6050, or have your staff contact Dan Glenn at 806-477-3182 or Karen Boardman at 505-845-6045.

for C S Prichard

R. E. Glass
Manager

Enclosure (2)

cc: See Page 3

cc w/enclosures:
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625 Indiana Avenue, NW
Suite 700
Washington, DC 20004
Attn: J. McConnell, DNFSB Staff
Ann: W. Andrews, DNFSB Staff
M. Whitaker, S-3.1, HQ
D. Beck, DP-20, HQ

Quarterly Report For the Implementation Plan

Defense Nuclear Facilities Safety Board Recommendation 98-2

Accelerating Safety Management Improvements at the Pantex Plant

July 1, 2000 through December 31, 2000

Albuquerque Operations Office
U.S. Department of Energy

1.0 Introduction

The Department of Energy (DOE) issued the Implementation Plan (IP) for Defense Nuclear Facilities Safety Board (DNFSB) Recommendation 98-2, *Accelerating Safety Management Improvements at the Pantex Plant,* in April 1999. On June 16, 1999, the Department received a letter from the DNFSB accepting the Implementation Plan.

On September 25, 2000, the Department submitted a revised 98-2 IP and submitted it to the DNFSB for acceptance. On August 3, 2000, the Department provided a transition briefing to the DNFSB from the original IP to the newly revised 98-2 IP. On October 23, 2000, the Department received the DNFSB letter recommending that the revised 98-2 IP be implemented. The October 23rd letter delayed acceptance until documentation and a briefing could be provided that demonstrates how the commitments have been captured in the work authorization directives for the Pantex Plant Managing and Operating Contractor as well as other appropriate weapon laboratories.

This quarterly report for the period July 1 through December 31, 2000 focuses on progress made towards completing the commitments outlined in the revised 98-2 IP.

2.0 General Progress

The original IP contained 53 deliverables against 25 commitments. The revised 98-2 IP simplified the reporting by establishing 26 commitments that carry over, replace, or remove the 12 remaining deliverables under the original IP.

During this reporting period the following occurred:

- The Department delivered 5.5 commitments out of the 11 due.
- Commitments #4.2.5, #4.3.1, #4.3.7, #4.3.5, and #4.4.2 due during the July 1, 2000 through November 30, 2000 remain incomplete. Commitment #4.3.8 is not due until December 31, 2000 and is currently on schedule. The Department is reporting two quarters to match the current calendar year for reporting and prevent a second report becoming due by January. This method will result in the next quarter report and briefing due by April and will cover January through March 2001.
- Discussion regarding incomplete deliverables is provided within the Task Area Status section of this report for the July through December 2000 reporting period.

3.0 Task Area Status

The following provides a status corresponding to the sections defined within the revised 98-2 IP for those commitments due within the July 1, 2000 to December 31, 2000 reporting period. A summary of the commitments for the revised 98-2 IP is provided as Attachment A to this report.

98-2 Commitments and Deliverables

4.1 Define Scope of Work

Commitment 4.1.1— The Department will revise the BIO/SAR Program Plan to include all of the project plans, schedules and resources necessary to accomplish generic safety improvements. This includes out-year schedules to achieve full compliance with DOE Order 5480.22 and 5480.23, and the associated resource estimates and schedules for implementation of safety improvements needed in administrative controls and tooling, or equipment upgrades. The BIO/SAR Program Plan will also include schedules for performing nuclear explosive safety (NES) master studies aligned with the upgrade modules. (Note: This commitment corresponds to the BIO portion of commitment 5.1.4 within the original IP)

> Deliverable: BIO/SAR Program Plan. The plan was delivered to the Board through the Department's letter dated August 30, 2000. The program plan is a living document that will be periodically updated as necessary but will at least be updated on an annual basis to reflect finalization of out year schedules as they become the schedule for the current year.

4.2 Analyze Hazards

Commitment 4.2.1— The Department will issue formal guidance on developing and classifying controls for nuclear explosive operations at the Pantex Plant. (Note: This commitment new as a result of the revised 98-2 IP)

> Deliverable: D&P Manual, Chapter 11.8. The chapter was published on October 24, 2000. A copy of the published chapter was delivered to the Board through the Department's letter dated October 31, 2000.

Commitment 4.2.5— The Pantex Plant Operating Contractor developed an Integrated Safety Management Authorization Basis Manual to provide more detailed guidance to hazard analysts and other plant personnel. Although the Department agreed the manual is adequate for initial application and use, a number of areas require additional improvement. The Department will work with the Pantex Plant Operating Contractor to revise the manual. This will include

additional guidance on the integration of fire hazard analyses and tooling failure analyses with the overall safety analyses for nuclear explosive operations. (Note: This commitment corresponds to commitments 5.3.1 and 5.8.3 within the original IP.)

> Deliverable: Revision #2 to the Integrated Safety Management Authorization Basis Manual was due to the Board October 2000. The Pantex Operating Contractor did not submit the revision on time for proper Amarillo Area Office (AAO) review and approval. The product submitted did not address the intent of the commitment. On November 1, 2000, the AAO wrote a letter to the Pantex Operating Contractor requesting that personal attention be provided to all funded commitments and delivered on time to allow for adequate review, comment, and approval. On November 2000 AAO delivered their comments to the Pantex M&O and requested that the manual be written to reflect the intent of the 98-2 IP. The new draft is due to AAO by December 2000. The Department provided a status of this commitment through its letter to the Board dated October 31, 2000.

Commitment 4.2.6—With the promulgation of D&P Manual Chapter 11.7, the Department attempted to integrate elements of the nuclear explosive change control process with the Unreviewed Safety Question (USQ) process. As the Department, Design Laboratories, and Pantex Plant operating contractor applied the requirements of D&P Manual Chapter 11.7, a number of problems have arisen. The Department will evaluate Chapter 11.7 for improvements. Specifically, establishment of clearer criteria/guidance for the NES Change Evaluation process, better linkage to the USQ process, and more explicit processing of new safety information will be considered for incorporation into Chapter 11.7. (Note: This commitment is a follow-on to commitment 5.3.2 within the original IP.)

> Deliverable: Revision to D&P Manual Chapter 11.7. The revised chapter was released for publication on November 29, 2000. A copy of the released chapter was provided to the Board through the Department's letter dated November 30, 2000.

4.3 Develop and Implement Controls

Commitment 4.3.1— Develop improved site-wide TSR controls for fire protection. (Note: This is a new commitment.)

> Deliverable: DOE-approved BIO Module on Fire Protection and associated TSR and Develop a resource-loaded schedule for implementation of improved TSR controls for fire protection. This commitment was due to the Board October 2000. However, the Fire BIO

was not ready for submission due to technical issues with the sensitivity and coverage of the UV detectors. AAO is working with the contractor to resolve these issues. The Department has approved UV controls for the W88. For other facilities and operations, combustible controls and the heat detector activated deluge remain the primary fire controls. The Board was provided a status of this commitment through the Department's letter dated October 30, 2000.

Commitment 4.3.5— The experience gained through the development of weapon-specific HAR and the performance of NES Master Studies has demonstrated the need for additional "generic" Technical Safety Requirement (TSR) applicable to nuclear explosive operations involving multiple weapon programs. The NES Master Studies identified a number of positive measures. Some of these positive measures may warrant inclusion as TSR controls prior to completion of all BIO/SAR module upgrades. Therefore, in parallel with the BIO/SAR upgrade modules, the Department will review previous NES Master Studies to determine if any controls warrant inclusion in the site-wide TSR. These include controls either explicitly or implicitly credited in the NES Master Studies. The Department will apply the criteria and guidance of DOE Order 5480.22 and DOE-STD-3009-94, in order to determine if any of the credited controls warrant inclusion in the TSR. (Note: This is a new commitment)

Deliverable: Additional DOE-approved TSR controls derived from the NES Master Studies. This commitment was due to the Board November 2000. The Pantex Operating Contractor has not submitted a quality product through two attempts. The NES Master Studies do not clearly identify controls and does not contain supporting analysis. AAO is working with the Pantex Operating Contractor to resolve these issues and to derive an approved TSR. The AAO NES Team in conjunction with the AAO Authorization Basis Staff have compiled a list of important attributes from the master studies and have provided the list back to the Pantex Operating Contractor along with direction to develop tooling and test equipment programmatic and administrative controls. This is expected to better focus the contractor's efforts. It is anticipated that the controls will be developed and approved within the next two months. A status regarding this commitment was provided to the Board through the Department's letter dated November 30, 2000.

Commitment 4.3.6— Develop a plan to systematically reduce the usage of flammable solvents and combustible materials used in proximity to and in nuclear explosive operations through a risk-cost benefit assessment of solvent and combustible material elimination, minimization or substitution. The plan will require identification of operations where those flammable solvents and combustible materials used in proximity to and in nuclear explosive processes for two weapon programs on a trial basis. Based upon a risk-cost benefit

assessment, the plan will then provide proposed actions that will need to be initiated to eliminate, minimize or substitute those flammable solvents and combustible materials. (Note: This is a new commitment)

> Deliverable: Flammable Solvent and Combustible Material Reduction Plan. The Albuquerque Operations Office Manager approved the plan on October 27, 2000. A copy of the plan was provided to the Board through the Department's letter dated October 31, 2000.

Commitment 4.3.7—The Department will develop a plan for the design, fabrication, and use of carts for partially assembled nuclear weapons affording protection against the range of potential hazards envisioned in transport at the Pantex Plant (e.g., electrical, mechanical). (Note: This is a new commitment)

> Deliverable: Plan for transportation carts. The AAO delivered a partial package on October 30, 2000. The complexity of the project and evolutionary nature of the design process requires substantial national laboratory analysis prior to completion. The entire package is expected to be completed by January 2001. The Board was provided a status of this commitment through the Department's letter dated October 31, 2000.

Commitment 4.3.8—The Department will develop a project design statement (PDS) to upgrade the fire detection and suppression system in Building 12-44 to provide UV-activated deluge capability. (Note: This is a new commitment)

> Deliverable: PDS for 12-44 Fire Protection Upgrade. This commitment is not due to the Board until December 2000. The document is in draft and is expected to be completed on time. The Department will submit a formal response in December 2000.

4.4 Perform Work

Commitment 4.4.1— The Department will develop revisions to DOE Orders 452.1, 452.2, and DOE-STD-3015. The proposed revisions to these directives will be coordinated with the DNFSB prior to submission into the Department's directives system for formal review, in accordance with DOE Manual 251.1-1A. (Note: This commitment carries forward commitments 5.4.2 and 5.5.1 from the original IP)

> Deliverable: Proposed revisions submitted into directives system for formal review. The proposed revisions were submitted into the directives system in August 2000. A copy of the revised orders and standard containing the proposed revisions was delivered to the Board through the Department's letter dated August 28, 2000.

Commitment 4.4.2— The Orders and Standard will be processed and issued concurrently, and consistently with DOE Manual 251.1-1A which affords a 30 - 60 day comment period followed by a 30 - 60 day comment resolution period. (Note: This commitment carries forward commitments 5.4.2 and 5.5.1 from the original IP)

Deliverable: Revisions to DOE Orders 452.1, 452.2, and DOE-STD-3015 issued. This commitment was due November 2000. Though the Department successfully released the orders and standards for comment through the formal process, significant comments have been received and are in process of being resolved. The nuclear weapons community has reached consensus on key elements within the orders and standard including deletion of the revalidation process, inclusion and implementation of senior personnel on the NES Study Group, and including explicit qualification requirements. These improvements have been implemented into the current NES Study process. However, one outstanding issue that still requires agreement among the nuclear weapons community and the Board which will gain the most benefit for the Department while retaining a rigorous NES process is the addition of the operational safety review (OSR) process. The Department has committed to completing this action by December 2000.

4.5 Feedback and Improvement

There are not any commitments due within this section during this reporting period.

APPENDIX

98-2 Deliverables and Milestones Matrix

Attachment 1 provides a summary status of all of the commitments within the revised IP in numerical order.

98-2 Rev 1 Summary Sheet

Deliverable No.	Deliverable	Deliverable Due Date	Deliverable Actual Date	Associated DOE Correspondence to the Board	Remarks	Status Open Pending Delivered	Responsibility
4.1.1	BIO/SAR Program Plan	8/30/00	8/30/00	• 8/30/00--Glass letter to Conway.	•7/31/00--Corresponds to 5.1.4 (Portion of IWAP) •8/15/00--AAO was sent an Email request for status. •8/24/00--AAO approved the program plan with comments. •8/31/00--AL Manager signed the letter to the DNFSB. Deliverable was mailed. •11/17/00--Individual schedules for each project plan are slipping.	**Delivered**	AAO Area Manager
4.1.2	Assessment of TBP-901 Implementation	11/30/01			•7/31/00--Follow-on to 5.2.2	**Open**	WPD Director
4.2.1	D&P Manual Chapter 11.8---"Integration of Weapon Response into Authorization Bases at the Pantex Plant"	10/30/00	10/31/00	10/31/00--Glass Letter to Conway	•7/31/00--New action •8/24/00--WRTeam completed draft for SMT review. SMT was requested to provide their organizational comments. •9/29/00--All organization comments were received and proposed resolution provided. SNL required further resolution. •10/10/00--Final draft completed. All comments resolved. Team consensus to request publication provided. •10/13/00--Publication package provided for SMT approval. •10/24/00--Chapter released for publication.	**Delivered**	AAO Area Manager
4.2.2	TBP Guidance on expectations & documentation of weapon response (Follow-on to 11.8)	1/30/01			•7/31/00--New action •11/19/00--The SMT designated a team to begin developing the guidance. The guidance will be an attachment to Chapter 11.8 in lieu of a TBP.	**Open**	AAO Area Manager
4.2.3	11.8 and TBP Impact Analysis & DOE-Approved Implementation Plan	3/30/01			•7/31/00--New action •60 days after the completion of 4.2.2, the contract is required to submit their impact assessment.	**Open**	AAO Area Manager

Deliverable No.	Deliverable	Deliverable Due Date	Deliverable Actual Date	Associated DOE Correspondence to the Board	Remarks	Status Open Pending Delivered	Responsibility
4.2.4	Assessment of USQ Process	1/30/01			•7/31/00--Carried forward 5.3.1#3 •11/19/00--Assessment is in process	Open	AAO Area Manager
4.2.5	Revision #2 to the ISM AB Manual	10/30/00		10/31/00-Glass Letter to Conway	•7/31/00--Corresponds to 5.3.1 & 5.8.3 •9/11/00--Request for status was emailed. •10/16/00--Draft delivered to AAO for review •10/30/00--Pantex M&O did not complete their internal review and incorporate comments received. Expect to be complete within 60 days. •11/1/00--Glenn Memo to Pelligrini regarding missed commitment. Requesting personal attention to ensuring all funded commitments are delivered in time to allow for adequate review, comment, and approval. •11/9/00--AAO comments were provided to the Pantex M&O and requested that the manual be written to reflect the intent of the IP. The new draft is anticipated to be delivered by December 2000.	Pending	AAO Area Manager
4.2.6	Revise D&P 11.7—"Nuclear Explosive Operations Change Control Process"	11/30/00		11/30/00--Glass Letter to Conway	•7/31/00--Follow-on to 5.3.2 •10/18/00--Email request for status. •10/30/00--Team meeting scheduled for 11/1/00 to resolve comments on initial draft and prepare 2nd draft for organizational and SMT comment. Final chapter should be published by the end of the month. •11/6/00--2nd Draft has been released for SMT and AL organization comments. Comments are due by 11/20/00. •11/29/00--Final released for publication	Delivered	WSD Director

Deliverable No.	Deliverable	Deliverable Due Date	Deliverable Actual Date	Associated DOE Correspondence to the Board	Remarks	Status Open Pending Delivered	Responsibility
4.3.01	DOE-Approved BIO Module/TSR for Fire Protection and DOE-Approved Implementation Plan for Fire Protection Controls	10/30/00		10/31/00--Glass Letter to Conway	•7/31/00--New action •6/30/00--Draft Fire BIO/TSR delivered to AAO for review. AAO returned with comments. Several resolution meetings have occurred to resolve the comments. Pantex M&O is expected to re-submit by 9/20/00. •8/4/00--Implementation plan submitted by Pantex M&O to AAO for review. •8/31/00--AAO returned implementation plan to Pantex M&O with comments. •10/30/00--AAO stated that the Fire BIO is not ready for submission due to technical issues associated with the sensitivity and zone coverage of the UV detectors. The complete deliverable is expected within 30 days. •11/9/00--More time will be required to address the UV technical issue prior to releasing the approved Fire BIO.	Pending	AAO Area Manager
4.3.02	DOE Readiness Assessment Report for Fire Protection	TBD			•7/31/00--New action •11/19/00--The date for completion is predicated upon completion and implementation of the Fire BIO and TSRs	Open	AAO Area Manager
4.3.03	DOE-Approved BIO Module/TSR for On-Site Transportation and DOE-Approved Implementation Plan for On-Site Transportation controls submitted	2/28/01			•7/31/00--Carried forward 5.6.3#3 •11/14/00--WSS information has been received from LLNL. SNL & LANL information is due within 30 days. First draft should be ready by March 2001. Final is expected May 2001.	Open	AAO Area Manager
4.3.04	DOE Readiness Assessment Report for Transportation	TBD			•7/31/00--Carried forward 5.6.3#3 •11/19/00--The date for completion is predicated upon completion and implementation of the Transportation BIO and TSRs	Open	AAO Area Manager

Deliverable No.	Deliverable	Deliverable Due Date	Deliverable Actual Date	Associated DOE Correspondence to the Board	Remarks	Status Open Pending Delivered	Responsibility
4.3.05	Additional DOE-Approved TSR controls derived from the NES master Studies	11/30/00		11/30/00--Glass Letter to Conway	•7/31/00--New action •10/18/00--Email request for status •11/9/00--AAO meeting the Pantex M&O responsible organization to discuss the M&O's failure to respond to AAO's rejection of the last submission. A letter to the M&O will follow.	Open	AAO Area Manager
4.3.06	Flammable Solvent and Material Substitution Plan	10/30/00	10/31/00	10/31/00--Glass Letter to Conway	•7/31/00--New action •10/27/00--Plan signed by the Manager	Delivered	WPD Director & AAO Manager
4.3.07	Plan for Transportation Carts	10/30/00		10/31/00-Glass Letter to Conway	•7/31/00--New action •10/30/00--AAO delivered a partial package. The complexity of the project and evolutionary nature of the design process requires substantial national lab analysis prior to completion of the design. The entire package is expected by January 2001.	Pending	AAO Area Manager
4.3.08	PDS for 12-44 Fire Protection Upgrade	12/30/00			•7/31/00--New action •11/14/00--Document in draft.	Open	AAO Area Manager
4.3.09	Completion of physical Modifications to Bldg. 12-44 Completed	12/30/02			•7/31/00--New action •11/14/00--Building is schedule to complete modifications on-time.	Open	AAO Area Manager
4.3.10	Conceptual Design for Fire Detection and Suppression Systems Upgrades	4/30/01			•7/31/00--New action •11/14/00--Do not have approval to start CD-1	Open	AAO Area Manager

Deliverable No.	Deliverable	Deliverable Due Date	Deliverable Actual Date	Associated DOE Correspondence to the Board	Remarks	Status Open Pending Delivered	Responsibility
4.3.11	ESAAB Authorization for Title 1	06/30/01			•7/31/00--New action •11/14/00--The decision on what type of funding to use to implement has not been made. Capital versus expense or a combination.	Open	DP-20
4.4.1	DOE Orders 452.1A, 452.2A and DOE-STD-3015 Proposed Revisions Developed & Submitted for formal review process	8/30/00	8/30/00	8/30/00--Beck Letter to Conway	•7/31/00--Carried forward 5.4.2 & 5.5.1 •8/15/00--DP-20 was sent a request for an update •8/21/00--DP-20 responded that the letter transmitting the orders and standards to MA for the review and comment period was ready and would be given to Beck for signature. •8/30/00--Beck signed out letter to DNFSB.	Delivered	DP-20
4.4.2	DOE Orders 452.1A, 452.2A and DOE-STD-3015 Formal Review Process & Publication	11/30/00		11/30/00--Glass Letter to Conway	•7/31/00--Carried forward 5.4.2 & 5.5.1 •10/18/00--Email request for status •10/19/00--Email response from Helmut Filacchone indicates that the orders and standards are still in formal review and comment period and this will be extended. DP-21 is shooting for a 12/31/00 publication date. •11/20/00--A plan was provided by DP-21 indicating expected release for publication by 12/8/00.	Open	DP-20
4.4.3	Revisions to corresponding AL Supplemental Directives 452.1 and 452.2 to align with published changes to DOE Orders 452.1A and 452.2A and DOE-STD 3015; Request Impact Analysis and Provide DOE-Approved Implementation Plan.	2/28/01			•7/31/00--Carried forward 5.4.2 & 5.5.1 •11/14/00--Time to complete may slip as a result of the slip on 4.4.2.	Open	AL Manager
4.4.4	Revisions to corresponding NVO Orders to align with published changes to DOE Orders 452.1A and 452.2A and DOE-STD 3015; Request Impact Analysis and Provide DOE-Approved Implementation Plan.	2/28/01			•7/31/00--Carried forward 5.4.2 & 5.5.1 •11/14/00--Time to complete may slip as a result of the slip on 4.4.2.	Open	NV Manager

Deliverable No.	Deliverable	Deliverable Due Date	Deliverable Actual Date	Associated DOE Correspondence to the Board	Remarks	Status Open Pending Delivered	Responsibility
4.4.5	W78 SS-21 Start-up Authorization	12/30/02			•7/31/00--Carried forward & replaces 5.6.4 •11/20/00--Assessment of resources (other than production technicians) availability to start SS-21 work in FY01 has not been completed by either the labs or Pantex. Expect an answer by 12/8/00.	Open	AL Manager
4.4.6	B83 SS-21 Start-up Authorization	5/30/02			•7/31/00--Replaces 5.6.4 •11/20/00--There is no funding for this project.	Open	AL Manager
4.5.1	IP 98-2 Final Assessment Report	6/30/03			•7/31/00--Carried forward 5.6.5	Open	DP-20

Total Open or Pending: **21**
Total Delivered: **5**
26

DOE F 1325.8
(5-83)

United States Government **Department of Energy**

memorandum

Albuquerque Operations Office

DATE: November 29, 2000

REPLY TO
ATTN OF: WPD:SRS

SUBJECT: Development and Production Manual, AL SD 56XB

TO: Addressees

This is notification that Revision 1, Change 38 has been made to the D&P Manual. Change 38 consists of the following

- **Revised Chapter 11.7, "Nuclear Explosive Operations Change Control Process"**—This revised chapter reflects the result in meeting the Department's implementation plan commitment 4.2.6 in response to the Defense Nuclear Facilities Safety Board (Board) Recommendation 98-2. The commitment required the Department to evaluate the previously approved and implemented chapter for improvements by establishing clearer criteria/guidance for the Nuclear Explosive Safety (NES) change evaluation process and better linkage to the Unreviewed Safety Question (USQ) process.

  This revised chapter is the result of a team consisting of members from the affected organizations within the Department and production agencies. The final chapter was reviewed by all Standing Management Team members and unanimously approved on November 29, 2000.

- **Revised Table of Contents**—To reflect Change 38.

Based on the discussion above, there should not be any known schedule or cost impacts relevant to implementation to Change 38. However, should it be determined by the Pantex Management & Operating, Lockheed Martin, or the University of California that such impacts exist, these organizations shall implement the revisions to 11.7 consistent with the AL Manager's memo dated October 13, 1999, "Implementation Instructions for Albuquerque Operations Supplemental Directive 56XB, Development and Production Manual."

The D&P changes listed above have been provided to Los Alamos National Laboratory and will be posted electronically at http://prp.lanl.gov/ within the next 5 working days.

Questions regarding Change 38 should be directed to Shawna R. Schwartz of my staff. She can be reached at (505) 845-4823 or through email at sschwartz@doeal.gov.

/original signed by Karen Boardman for/
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T. Evans, DP-22

1.0 PURPOSE

The purpose of the chapter is to outline the Department's expectations for the change control process for nuclear explosive operations (NEOs) performed at the Pantex Plant. The NEO Change Control Process is to be applied to all requested changes to NEO procedures, tooling/equipment items, and nuclear explosive facilities. The NEO Change Control Process also incorporates an evaluation of new information for its impact on nuclear explosive safety. As feasible, this chapter recommends integrating the nuclear explosive safety (NES) (DOE O 452.2A) and Unreviewed Safety Question (USQ) (DOE Order 5480.21) process documentation to ensure coordination between the two entities. This chapter discusses the roles and responsibilities, criteria and approval authorities for the various levels of NES determination. This chapter also addresses the coordination points between the NES and authorization basis (AB) organizations when disparity exists in determinations (e.g., "trivial" change and positive USQ Evaluation (USQE) or "non-trivial" change and negative USQ Evaluation) to ensure operations are not authorized prior to approvals being obtained for such changes. In each of these areas, the level of review and implementation approval for the change is determined by the application of specific evaluation criteria. Review/approval levels may range from the Pantex Plant Management & Operating (M&O) contractor up to Assistant Deputy Administrator for Military Applications and Stockpile Operations (DP-20) in Washington DC, depending upon the safety implications of the proposed change.

2.0 POLICY

It is Department policy that nuclear explosive operations be developed with safety as a primary consideration. A formal process is required to ensure that all proposed changes to NEOs at the Pantex Plant are subject to rigorous evaluation. Line management at the Pantex M&O and Department offices must ensure that all proposed changes have merit, do not adversely affect the safety of the operation, and are evaluated through the USQ process to fall within the scope of the existing authorization basis or are documented in an approved revision to the existing authorization basis. In addition to the line management function, an independent NES evaluation will be performed on all proposed changes to NEO procedures, tooling/equipment items, and facility interfaces.

The Pantex M&O and Department offices are to maintain auditable records of the change control evaluations for which they have approval authority.

3.0 DEFINITIONS

See Chapter 11.0 for Definitions.

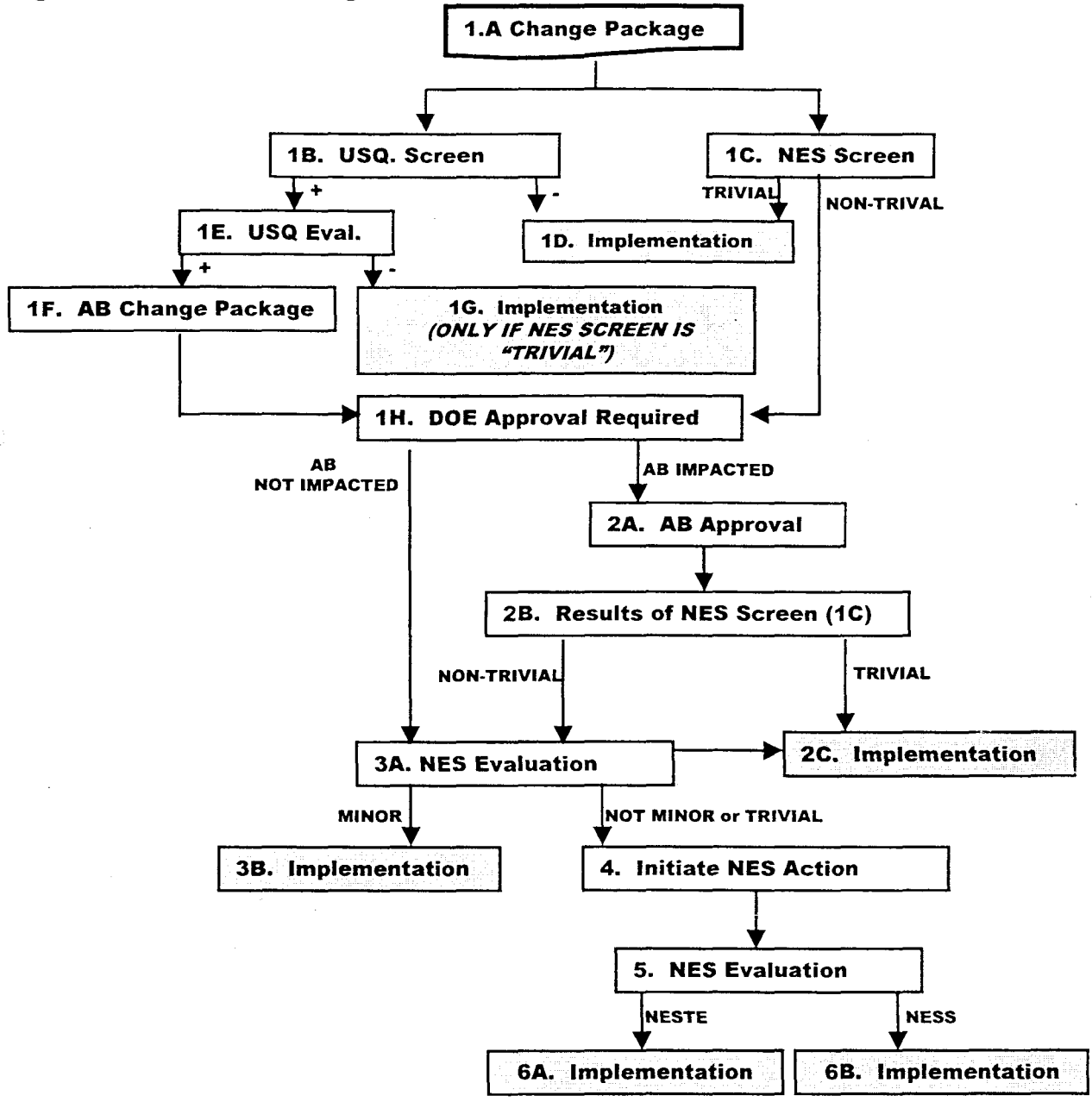
4.0 NEO CHANGE CONTROL PROCESS FLOW

The NEO Change Control process flow is illustrated in Figure 11.7-1.

The process is illustrated using individual steps, identified by letter and number. Steps identified with the same number are performed by a common organization.

The process is initiated when a change is proposed to an existing operation (procedures, tooling, equipment items, or nuclear explosive facility). Proposed changes can be generated from essentially any level, from Pantex M&O production technicians to laboratory technical specialists. All proposed changes will be referred to the appropriate Pantex M&O personnel, who will evaluate the proposed change for merit. If the proposed change has merit, the Pantex M&O will initiate the NEO Change Control Process by proceeding with step 1A.

Figure 11.7-1: NEO Change Control Process



4.1 PART 1 M&O CONTRACTOR ACTIONS

STEP 1A

Every proposed change that will affect a NEO procedure, tooling, equipment item, or facility interface is to be formally documented. The change package must include a complete description of the proposed change; justification for implementation of the proposed change; an evaluation of the hazards associated with the proposed change; identification of changes to existing controls; identification of new controls derived for the hazards; and, concurrence from appropriate M&O line and safety personnel and design agency technical representatives.

The Pantex M&O will lead the development of the necessary safety support documentation for the change package. The Pantex M&O will be responsible for compiling the safety package, with appropriate input from the design agencies and other Department offices. The Pantex M&O is responsible and accountable for ensuring the completeness of the documentation prior to submittal of the documentation to review entities.

STEP 1B, 1C

The Pantex M&O change package will also reflect the results of the independent evaluation by an Pantex M&O NES representative (for the NES perspective on proposed changes) and a USQ screen by an Pantex M&O Authorization Basis representative (for the AB perspective on proposed changes).

The change package shall reflect the rationale utilized in making the determination. The criteria for trivial NES changes are contained in Attachment 1.

1. If the NES screen indicates "trivial" and the USQ screen indicates "negative" proceed to step ID.
2. If the NES screen indicates "trivial" and the USQ screen indicates "positive" proceed to step IE.
3. If the NES screen indicates "non-trivial" and the USQ screen indicates "negative" proceed to step 1H.
4. If the NES screen indicates "non-trivial" and the USQ screen indicates "positive" proceed to step 1E.

STEP 1D

The Pantex M&O is authorized to approve implementation of the proposed change. The Pantex M&O shall define the appropriate approval level for this situation in the development of detailed implementing instructions for this change control process. The Pantex M&O shall maintain auditable documentation of these approvals.

STEP 1E

The Pantex M&O performs a detailed USQ Evaluation of the proposed change in accordance with DOE Order 5480.21, *Unreviewed Safety Questions*.

1. If the USQ Evaluation indicates "negative", proceed to step 1G.
2. If the USQ Evaluation indicates "positive", proceed to step 1F.

STEP 1F

A change to the existing AB is required. The Pantex M&O forwards the change package to the Department for approval.

STEP 1G

The Pantex M&O is authorized to approve implementation of the proposed change.

STEP 1H

The proposed change requires Department approval. The Pantex M&O forwards the change package including the associated safety evaluations and justification for implementation to the Department for action.

1. If the proposed change resulted in an AB change request only, the requested change will be sent to the Manager, Amarillo Area Office (AAO) with a copy to the Director, Weapon Programs Division (WPD), Albuquerque Operations Office (AL).
2. If the change resulted in a "non-trivial" NES determination only, then the Pantex M&O will send a formal request to the AAO Manager with copy to the Directors of WPD and Weapons Surety Division (WSD) at Albuquerque. Proceed to step 3A.

3. If the requested change would result in both an AB change and a "Non-trivial" NES determination, then the Pantex M&O will send a formal change request (including the change package and associated safety evaluations) to the AAO Manager with a copy to the Directors of WPD and WSD.

4.2. PART 2 DEPARTMENT LINE MANAGEMENT ACTIONS

STEP 2A

Upon approval of the AB change, Department Line Management proceeds to Step 2B.

STEP 2B

1. If the proposed change was "trivial", then proceed to Step 2C.

2. If the proposed change is "non-trivial", then a Department NES review is required. Proceed to Step 3A.

STEP 2C

The Department transmits the approved AB change package to the Pantex M&O and authorizes implementation of the proposed change.

4.3 PART 3 DEPARTMENT NES ACTIONS

STEP 3A

Upon receipt of a proposed change package, the Directors of WSD and WPD can agree that a NES Study is the appropriate change mechanism. For this situation proceed to step 4. Otherwise, the WSD Director initiates an AL-led joint NES review of the proposed change. Additional requirements and guidance for this review are detailed in Attachment 3.

The joint NES review team will make one of the following determinations:

1. The proposed change is "trivial" and should be referred back to the Pantex M&O for NES approval.
2. The proposed change is "minor" and may be NES-approved by WSD.

The proposed change requires a NES Tester Evaluation (NESTE) and may be NES approved by the AL Manager.

The proposed change does not qualify for a lower approval level and should be evaluated using a NES Study for approval by DP-20.

Notes: The joint NES review team determines an appropriate approval level; it does not approve changes. If unanimous agreement of the joint NES review team is not achieved then the proposed change must be evaluated using the more conservative mechanism recommended by a joint review team member.

The criteria for the NES minor screen are reflected in Attachment 2.

The NES review team may advise the AAO of any additional information needed above and beyond the initial submittal. The AL member will inform the WSD Director of the results of the joint review prior to obtaining that official's NES decision.

The WSD Director will notify, in writing, the AAO Manager and the WPD Director of the NES approval of the change as "minor" (or reason for disapproval, or conclusion that the change is actually trivial).

If the change is approved as "minor", proceed to Step 3B of the process.

Note: It is also possible that the Joint NES Review Team will categorize the proposed change as "trivial". In this case the WSD Director will notify, in writing, the AAO, WPD, and the Pantex M&O that the change proposal was determined to be "trivial" from a NES perspective, and process reverts to Step 1G if the USQ Evaluation was negative.

If the change is **not** "trivial" or "minor", proceed to Step 4.

STEP 3B

The WSD has approved the proposed change as "minor" (from a NES perspective). The AAO is authorized to approve implementation of the change after ensuring that any and all necessary AB changes have been approved.

4.4 PART 4 AL ACTIONS

STEP 4

WSD and WPD will reach agreement on the need for a NESTE or a NES Study (NESS) and will initiate preparations for the NESSG evaluation. At this step it is possible that the Department will determine that the benefit of the proposed change does not warrant further obligation of resources.

4.5 PART 5 DEPARTMENT NES ACTIONS

STEP 5

The proposed change will be evaluated by the NESSG via a NESS (as specified in DOE O 452.2A and DOE-STD-3015-97) or a NESTE (as specified in Attachment 3, Section C).

4.6 PART 6 AL, HQ ACTIONS

STEP 6A

The AL Manager has approval authority for NESTEs.

STEP 6B

DP-20 has approval authority for NESSs.

5.0 RESPONSIBILITIES

5.1 The Department

1. Approve proposed changes that are minor or changes that require a NESS.
2. Convene reviewers for NES reviews and studies.
3. Assure line management involvement in requested changes.

5.2 Pantex Management & Operating Contractor

1. Initiate and document proposed changes.
2. Approve proposed changes that are trivial or result in a negative USQE.
3. Provide documentation to support proposed changes or input documents.

4. Assure line management involvement in requested changes.

5.3 Design Agencies

1. Support NESS reviews
2. Provide documentation to support proposed changes or input documents.

6.0 RESPONSIBLE ORGANIZATIONS

WPD and WSD are responsible for this chapter.

7.0 ATTACHMENTS

Attachment 1: Criteria for Trivial NES Changes
Attachment 2: Criteria for Minor NES Changes
Attachment 3: Guidance on NES Change Evaluation Process

ATTACHMENT 1

CRITERIA FOR TRIVIAL NES CHANGE

(Performed by the Pantex M&O NES Representative)

The answer to each of the following questions must be "No" for the change to be a trivial change.

1. Does the proposed change to a nuclear explosive operation involve an activity or process (e.g., procedure, tester, equipment, tooling, or facility interface) that is not addressed in a currently approved study?

2. Does the proposed change have the potential to adversely impact NES?

3. Has new information been presented that could adversely impact NES?

ATTACHMENT 2

NES MINOR SCREEN CRITERIA

(Performed by M&O NES Representative)

The answer to each of the following questions must be "No" for the change to be a minor change.

1. Is the proposed operation or change described in the currently approved study?

2. Does the proposed change reduce the effectiveness of a control relied upon to meet any of the NES Standards?

3. Does the proposed change introduce a failure, hazard or accident scenario that has not been evaluated in the currently approved study?

4. Does the change reduce assurance that any of the three NES Standards are met?

ATTACHMENT 3

GUIDANCE ON NES CHANGE EVALUATION PROCESS

This attachment provides detailed requirements and guidance for achieving NES approval of proposed changes to approved nuclear explosive operations. It describes what must be done to gain NES approval for each of the authorized approval levels, and describes how to select an appropriate NES approval level.

In the context of this guidance, "NES Approval" refers to the determination that a proposal is acceptable from a NES perspective. Actual approval authority for implementation of a proposed change rests with the appropriate line management official.

NES approval of proposed changes might be granted at one of four levels, depending on the specifics of the proposal.

A. Trivial Changes

The Pantex M&O (based on concurrence of the contractor's NES personnel) may approve proposed changes of a trivial or strictly administrative nature with no likelihood of significance to nuclear explosive safety (see attachment 1). The Pantex M&O shall establish a process for NES review and approval of "trivial" changes that is consistent with the requirements of this directive. NESSG certified personnel from the Pantex M&O will determine whether a proposed change qualifies as "trivial."

The Pantex M&O will keep an auditable record of the NES review and approval until the applicable NES Study is superseded and/or no longer needed. Decisions made by the Pantex M&O are subject to later Department review during Nuclear Explosive Weapons and Surety (NEWS) Program appraisals and other Department (AL and AAO) oversight activities.

B. Minor Changes

For proposed changes judged by the Pantex M&O NES personnel to be "non-trivial", a second screen is performed by a joint NES review team composed of NESSG-certified personnel from AL, AAO, and the Pantex M&O. NESS Group (NESSG) personnel from other organizations (e.g., Design Agencies) may participate, as deemed appropriate by the Chairman. The WSD may

approve proposed changes that are determined to be "minor" according to the criteria in attachment 2.

The Pantex M&O shall assemble appropriate information, documentation, and analysis to support the proposal. The joint NES review team will make one of the following determinations:

1. The proposed change is "trivial" and should be referred back to the Pantex M&O for approval.

2. The proposed change is minor and should be submitted to the WSD Director for NES approval.

3. The proposed change does not qualify as a "trivial' or "minor" change and should be evaluated using an NESSG.

Note: The joint NES review team determines an appropriate approval level; it does not approve changes.

Unanimous agreement of the NES review team is required to seek NES approval as a "minor" change or to refer it back to the contractor as "trivial". If unanimous agreement is not achieved then the proposed change must be evaluated using the more conservative mechanism recommended by a joint review team member.

In the course of the review, the NES review team may advise the AAO of any additional information required above and beyond the initial contractor package submittal.

The Nuclear Explosive Safety Program organization at AL (NESP) shall keep an auditable record of the NES review and approval until the applicable NES Study is either superseded or no longer needed.

A proposed change that is not categorized as "trivial" or "minor" must be evaluated by an NESSG. Most types of changes that reach this level will be evaluated in a NES Study for approval by DP-20. The exception is a proposed electrical tester replacement, which may qualify for evaluation in a NESTE, and approval by the AL Manager. (See paragraph C below.) In either case, the NESSG report and associated approval correspondence provide the necessary auditable record of the NES review and approval.

The NESP shall keep an auditable record of these NES reviews and approvals until the applicable NES Study is either superseded or no longer needed.

C. Replacement Testers

Review and approval of electrical tester replacements is a unique category of the NES change evaluation process. Electrical testers used with nuclear explosives require special consideration because nuclear explosives are designed to operate from electrical signals, and these testers intentionally apply electrical energy to the nuclear explosive. For that reason, DOE O 452.2A requires NESSG evaluation of any new testers proposed for addition to the Master Tester List (MTL) of authorized nuclear explosive electrical testers.

A replacement tester that performs the same electrical test on the same nuclear explosive circuits as is already approved in a NES Study is a process change that may be approved by the AL Manager.

NES approval of proposed replacement testers will be based on a NES Tester Evaluation (NESTE) performed by an NESSG. The NESSG report and associated approval correspondence provide the necessary auditable record of the NES review and approval. A copy of AL-approved NESTE reports will be provided to DP-20 for information. A NESTE approval is valid only as long as the NES Study on which it is based remains valid.

Line management preparation for a NESTE should include at least one planning meeting with the principal participants, similar to those required for NES Studies, to determine and document the specific approach and expectations for each NESTE. To obtain NES approval of proposed replacement testers using the NESTE process, the following are required:

1. Convening the NESSG.

2. A tailored input document covering the NES Study topics identified in DOE-STD-3015 that are relevant to the tester operations. The focus should be on the tester design and analysis, the specific electrical tests to be performed, the specific nuclear explosive configurations during the tests, and any associated safety basis information.

   a) The input may include:

- A description of the similarities and differences between the proposed tester/operation and the tester/operation being replaced.
- Tester Nuclear Safety Specification
- Analysis of the tester design with respect to established nuclear explosive tester design criteria.
- Analysis of the tester output in single-fault conditions.
- Vulnerability of the configuration under test to the worst-case, single-fault tester output.
- Vulnerability of the configuration under test to the occurrence of any abnormal environments for which electrical tester requirements have been established.
- Design Agency independent safety assessment as required.

b. Preparation and Distribution

- The NESTE input document shall be prepared by the organization(s) having responsibility for the information (i.e., design agency or Pantex M&O).
- Information prepared by a design agency shall be provided to the Pantex M&O.
- The input document will be consolidated and published by the Pantex M&O.
- The input document will be provided to the NESSG members at least two weeks before the start of the NESTE.

3. Briefings by the responsible design agencies and the Pantex M&O on the information in the input document, with emphasis on the proposed replacement tester, its use, and the configuration under test. The briefings should also cover basic nuclear explosive information (type of explosive, safety features, etc.), process flows, and any other background information needed to put the proposed replacement tester in context.

4. Realistic demonstration of the electrical test configuration with the proposed replacement tester and trained technicians, using the proposed written operating procedure.

5. Deliberations by the NESSG to assure that the proposed replacement tester is not a threat to nuclear explosive safety and to determine if use of the proposed replacement tester meets the three Department NES Standards and other NES criteria specified by DOE 452-series directives.

6. Preparation of an NESSG report following the general guidelines in DOE-STD-3015 for preparation of other NESSG reports.

7. Coordination of the report with the cognizant AL line management Division Director; the WSD Director; and the Assistant Manager, ONDP, followed by submission of the NESSG report to the AL Manager for approval.

D. All Other Changes

Proposed changes that do not qualify for one of the lower levels of approval will be evaluated in an appropriately scoped NES Study and submitted to DP-20 for approval. NES Studies will be performed in accordance with DOE-STD-3015 and the 452.2-series directives. The NESSG report and associated approval correspondence provide the necessary auditable record of the NES review and approval.

When a NES Study is used for evaluation of proposed changes, the study process and requirements are essentially the same as for a full program NES Study. However, a NES Study for change evaluation will be limited in scope to the specific processes affected by the change proposal. Therefore, input documents and analyses should be similarly limited in scope and tailored to the subject.

E. Supporting Data

Regardless of which NES review and approval path is used, it is the responsibility of line management and the proposing agency(ies) to develop and present information to support the independent NES evaluations.

For all changes that do not rise to the level of a NES Study, the supporting data should include sufficient information to support the proposed change and that the proposed change is not a threat to nuclear explosive safety. The approach chosen to support those two necessary conclusions may be tailored to the nature of the change and availability of applicable safety analyses. For example, a comparative analysis may be used to show that the existing approved process bounds the proposed operations, from a NES perspective. Or, a complete (stand-alone) analysis may be used to show that implementation of the proposed change is not a threat to NES. Additionally, briefings and/or demonstrations may be needed to support any NES evaluation. This should be determined through planning discussions between the proposing organization(s) and the applicable NES reviewer(s).