

Document Discussion

Return To Library > Records > ERID-93000 through ERID-93999 > ERID-093722 1) NUCLEAR ENVIRONMENTAL SITES (NES) SAFETY EVALUATION REPORT

Document Number: 09192006-V4KS-LD5Q
Created By: Aurelia A. Martinez/USERS/LANL
Date Created: 09/19/2006 09:20:32 AM
File name: Target-ERID #1.pdf
Version: 1.0
Document Type: RPF Record
Document State: Released
Description: SUBMITTED BY ELENA MARTINEZ, EP-ERSS

Document Details:

Title: ERID-093722 1) NUCLEAR ENVIRONMENTAL SITES (NES) SAFETY EVALUATION REPORT
ERID Number.StartPage: ERID-093722
Office of Record: ENV-ERSS
Date Received: 09/18/2006
Official Use Only: N
Page Count: 28
Record Type: Letter
Document Date: 01/25/2005
To:(Addressees - Organization) ANTHONY R STANDFORD, FWO-DO
(separate multiple values with semicolons)
From:(Senders - Organization) N/A
(separate multiple values with semicolons)
Other Document Number(s): RCJ012505-001
(separate multiple values with semicolons)
TA: N/A
(separate multiple values with semicolons)
PRS Number(s):
(separate multiple values with semicolons)
Record Box Number:

* Denotes Fields that are mandatory.

To download this file, right mouse click on the file and select 'Save to Disk' or 'Save Target as' [Target-ERID#1.pdf](#) <-- This link points to this version.
To check-out and/or edit this file, select Edit Document or Check Out Document from the Document menu above.

File Cabinet: Records

.r) Binder Category: ERID-90000 through ERID-99999

Binder: ERID-93000 through ERID-93999

31146

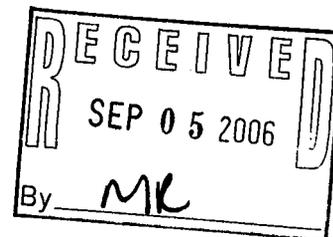


28

memorandum

National Nuclear Security Administration
Los Alamos Site Office
Los Alamos, New Mexico 87544

DATE: January 25, 2005
REPLY TO:
ATTN OF: RCJ012505-001
SUBJECT: Nuclear Environmental Sites (NES) Safety Evaluation Report
TO: Anthony R. Stanford, FWO-DO, LANL, MS K492



The National Nuclear Security Administration (NNSA) has reviewed the Nuclear Environmental Sites (NES) Documented Safety Analysis (DSA), LA-UR-04-7505, ER2004-0606, and Technical Safety Requirements (TSR), LA-UR-04-7504, ER2004-0607, transmitted by Los Alamos National Laboratory (LANL) on December 4, 2004 (attached). With the attached SER, the NNSA approves the DSA and the revised attached TSRs as meeting the intent of 10CFR830 Subpart B "Nuclear Safety Requirements", with specific conditions of approval. Conditions of approval negotiated with and agreed to by LANL NWO Division.

While approving the NES DSA and revised TSRs, the NNSA found that the DSA identified controls that were not fully incorporated into the TSRs. This condition necessitated a revision to the TSRs to include specific administrative controls related to the NES Program. Revisions to the TSRs were fully negotiated with the facility and they were resubmitted and attached to the SER. NNSA has designated four conditions of approval (COAs) in the SER related to the implementation plan, readiness reviews, and formal evaluation of the applicable and appropriate elements of DOE Order 5480.19 **Conduct of Operations**.

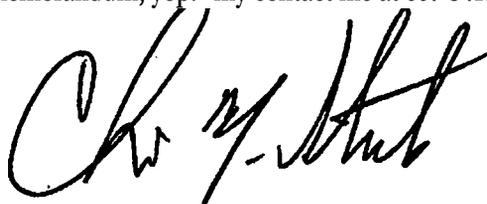
The documentation of the basis for using the DOE STD 1120-98 as the appropriate Safe Harbor and the discussion of the revisions to the TSRs and the COAs has necessarily increased the length of the SER. This level of involvement by the NNSA is ordinarily not possible due to resource constraints. However, the NNSA viewed the approval of these documents as paramount for nuclear safety at the site in this specific case. Therefore, NNSA chose to commit resources to work closely with the NES facility and the Performance Surety Division Safety Basis Office to make the documents approvable. Prior to this NES DSA and TSRs no formal safety basis existed. The newly approved DSA and TSRs are a significant improvement in establishing nuclear safety at the LANL NES.

As is required by 10CFR830, LANL is required to submit an **Implementation Plan** to the NNSA for approval. This requirement has been captured in the SER as a COA. LANL shall submit the revised plan incorporating the COAs and necessary changes due to the revisions to the TSRs by February 28, 2005.

In addition, as stated in COA #3, before initiation of work, verification of control implementation is required by the LASO Facility Operations Branch.

Please call me at (505) **667-3418** or Randy Janke at (505) 665-4205 if **you have any questions.**

If you have any questions regarding this memorandum, *yop.*~my contact me at 667-3418.



Christopher Steele
Senior Auth tion Basis Manager

Attachments as stated
cc w/ attachment
E. Wilmot, Manager, LASO
X. Ascanio, NA-124, HQ/GTN
S. Pierpoint, NA-124.1, HQ/GTN for CMR and TA-55
T. Harmeson, Acting Deputy Manager, LASO
G. Schlapper, SSA, LASO
C. Steele, SABM, LASO
K. Keilholtz, Acting AMFO, LASO
C. Bronson, OFO, LASO
M. Alsdorf, OFO, LASO
G. Rodriguez, PL, LASO
T. Burns, DNFSB, LASO
R. Cramberg, SABT, LASO
R. Janke, SABT, LASO
J. **Houghton**, SABT, LASO
L. Knoell, SABT, LASO
C. Kullberg, SABT, LASO
D. Lee, SABT, LASO
N. **Sandoval**, **SABT**, LASO
S. Gibbs, ADO, LANL, MS-A110
K. Hargis, ENV-DO, MS J591
D. McLain, NOW-RLW, MS J593 .
D. Kraig, ENV-RS, MS M992
C. Mangeng, ADO, LANL, MS-A 104
J. Angelo, PS-DO, LANL, MS C347
D. Satterwhite, PS-OAB, LANL, MS K559
C. Keilers, DNFSB, LASO



memorandum 04 DEC -3 Pal 53

Nuclear Waste Operations Division
P.O. Box 1663, MS K492
Los Alamos, New Mexico 87545
505-667-7111/Fax 505-665-8777

Xe Ma' (A

To/MS: Chris Steele, NNSA-SABT, MS A316
Thru: Dave Satterwhite, PS-4, MS K561 f j/ u -P65
From/MS: Anthony Stanford, NWO-DO, MS K492
Phone/Fax: 7-7111/Fax 5-8777
Symbol: NWO-DO 04-013
Date: November 29, 2004

SUBJECT: DSA/TSR/IP for Surveillance and Maintenance of Nuclear Environmental Sites

The attached documented safety analysis (DSA) and technical safety requirements (TSRs) are hereby submitted for your review. The implementation plan (IP) is provided to share with you our proposed strategy for implementation of the DSA and TSRs. This IP will be revised to address any conditions of approval that you identify and be resubmitted for your approval in a timely manner upon receipt of the SER.

Included in the IP, as you requested, is our proposed interim implementation strategy for meeting the scheduled deliverables contained in the NMED Consent Order that the Department and University have agreed to prior to full implementation of the DSA and TSRs. These represent requirements that should be started in early January 2005 in order to avoid the fines and stipulated penalties contained in the Consent Order. We request that you provide feedback on the acceptability of the interim implementation strategy as soon as possible to allow actions to be taken to meet the Consent Order schedule.

Due to the reorganization of the Operations Directorate into two new directorates, some roles and responsibilities have changed in regard to the management of the safety basis for the nuclear environmental sites. The RRES Division Leader is no longer the responsible division leader for the Nuclear Environmental Sites. This responsibility has been transferred to the new Nuclear Waste Operations (NWO) Division within the new Security and Facility Operations Directorate. The environmental surveillance activities described in the DSA and TSRs will be carried out by the newly designated Environmental Stewardship (ENV) Division within the new Technical Services Directorate.

With the reorganization having just occurred, efforts are now underway to identify and align the RDL responsibilities for the NES within my new structure. Key to the management of the NES safety basis is the use of existing trained and qualified personnel from what was FWO-WFM and RRES-OM to manage the USQ process and ensure that the surveillance and maintenance activities are carried out in accordance with the safety basis once approved.

Questions regarding the DSA, TSRs, and IP should be directed to Dennis McLain (665-5099) for those involving the RDL role and to Bill Criswell (665-5886) for issues associated with the surveillances that will be carried out by the ENV Division under the DSA and also as proposed for compliance with the Consent Order.

We would like to discuss with you our proposed implementation strategy as outlined in the W.

- Attachments: 1. Documented Safety Analysis for Surveillance and Maintenance of Nuclear Environmental Sites, LAUR 04-7505
2. Technical Safety Requirements for Surveillance and Maintenance of Nuclear Environmental Sites at Los Alamos National Laboratory, LAUR 04-7504
3. Draft Implementation Plan for Nuclear Environmental Sites DSA and TSRs, LAUR 04-8113

Distribution: Edwin Wilmot, DOE-LA-SO-DIR, MS A316
Joseph Vozella, DOE-LA-SO, MS A316
Charles Keilers, DOE-LA-SO, MS A316
Scott Gibbs, ADSFO, MS A104
George Peters, PS-4, MS K561
Dennis McLain, NWO-RLW, MS J593
Cary Bronson, DOE-LA-SO, MS A316
Mark Alsdorf, DOE-LA-SO, MS A316
Dennis Armstrong, EM&R, MS C938
Charles W. Criswell, ENV-RS, MS M992
Dave McInroy, ENV-RS, MS M992
Kenneth Hargis, ENV-DO, MS J591
David Kraig, ENV-RS, MS M992
NWO-NA Group Files, TA-54, MS J593
NWO-DO File, K492



Safety Evaluation Report (SER)

Documented Safety Analysis and Technical Safety Requirements (TSRs) for Surveillance and Maintenance of Nuclear Environmental Sites at Los Alamos National Laboratory,

LA-UR-04-7505, ER2004-0606

LA-UR-04-7504, ER2004-0607

Los Alamos National Laboratory Contract No. W-7405-LNG-36

U. S. Department of Energy

National Nuclear Security Administration (NNSA)

Los Alamos Site Operations (LASO)

January 24, 2005

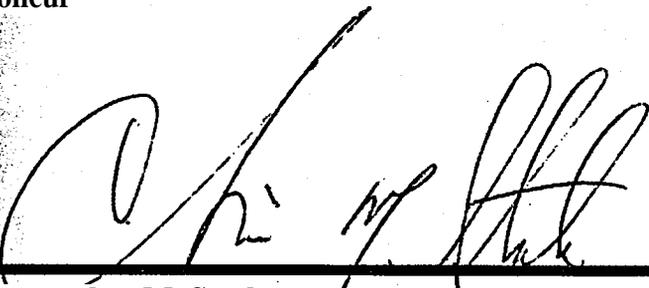


This document is UNCLASSIFIED and contains no UCNI.
Randy C. Janke, Safety Analyst, ADC, January 24, 2005

Signature Page



Randy Jan1-QQ6alified Safety Analyst, NNS ASO / Date
Concur (



1/25/05

C her M. Steele Date
Senior Authorization Ba Manager (SABM)

TABLE OF CONTENTS

1.0	Executive Summary	1
2.0	Review Process	11
3.0	Base information	11
4.0	Hazard Analysis	12
5.0	Design Features	13
6.0	Technical Safety Requirements	14
7.0	Administrative Controls	17
8.0	List of AB Documents	21

1.0 Executive Summary

The objective of a SER is to defensibly evaluate and confirm that the residual risk that IVNSA will be accepting for an activity, with safety controls effectively implemented, is acceptable in the context of the DOE-STD-1120 Safe Harbor requirements under 10CFR830 Subpart B and activities involving Surveillance and Maintenance for the sites covered under this SER..

This safety evaluation report (SER) summarizes the basis upon which the U.S. Department of Energy (DOE), National Nuclear Security Administration (NNSA) **approves the Los Alamos National Laboratory (LANL) Documented Safety Analysis (DSA) and the Technical Safety Requirements (TSR) for the Nuclear Environmental Sites (NES) in accordance with Title 10 of the Code of Federal Regulations Part 830 (10 CFR 830), Subpart B, "Safety Basis Requirements."** **Where there are differences between the DSA and the revised TSRs attached to this SER, the SER is the overriding document.**

The Documented Safety Analysis (DSA) being approved in this SER is based on a Hazards Analysis, developed in accordance with DOE-STD-1120-1998, for the limited scope environmental restoration activities, for the Environmental Sites at the LANL, involving Nuclear Hazard Category 2 and 3 inventories. Based upon 10CFR830 Subpart B, associated guides, and the invoked safe harbor (DOE-STD-1120-1998) significant gradation in the rigor of the approach to both the DSA and Technical Safety Requirements (TSRs) is appropriate. In accordance with DOE-STD-1120-98 Polutne 2 of 2, effective May 1998, Appendix H "Hazard Analysis Techniques", a "Target-Barrier-Hazard An effective technique for assessing the performance capabilities Analysis of barriers that are used to control hazards." Appendix G, DOE-STD-1120-98/Vol. 2 states: that for decommissioning projects of the type that this SER is applicable to (Surveillance and Maintenance)

"compliance with DOE Order 5480.23 may be achieved for work associated with decommissioning, after deactivation, and excluding treatment, storage, or disposal, by the following:

- (1) complying with 29 CFR 1910.120 and 29 CFR 1926.65 requirements for Safety and Health Programs, Work Plans, Health and Safety Plans (HASPs) and Emergency Response **Plans;**
- (2) deriving Technical Safety Requirements (TSRs); and (3) addressing public safety, as well as worker safety, in the Safety and Health Program, Work Plans, HASPs, and Emergency Response Plans. When this alternative is chosen, the documents discussed above shall be submitted to DOE for review and approval in lieu of and on the same schedule as required for the SAR. The documents discussed above shall also be used in lieu of the SAR when meeting other requirements. The TSR, USQ, Training and Certification, Conduct of Operations, and Maintenance Management Orders are not modified by this paragraph."

This quote is applicable to the facilities for which the DSA and TSRs are derived because the facilities are not active, are not authorized to conduct treatment under this SER, storage (as in TRU Waste Storage in, for example drums, or material disposal. The DSA is only for deigned

Surveillance and Maintenance activities. TSRs are also derived for the DSA. This DSA is approved with the express understanding that the quote immediately above relative to *Appendix G, DOE-STD-1120-98/Vol. 2* applies to these operations.

1.1 Operations Covered and Hazard Classification

The DSA and the revised Technical Safety Requirements (TSRs), attached to this SER, for the Nuclear Environmental Sites (NES) at LANL, dated November 2004, and this SER, form the Safety Basis for the Nuclear Hazard Category 2 and 3 NES (henceforward referred to as the Safety Basis) and applies to operations in which Hazard Category 2 and 3 quantities of nuclear materials are authorized. The Safety Basis has been subjected to a thorough technical review by NNSA through the Los Alamos Site Office (LASO) Safety Authorization Basis Team (SABT) after submittal by the LANL Safety Basis Office (SBO). Prior to the review by LASO, LANL/SBO reviewed the Safety Basis after which it was recommended approval and transmitted to NNSA. The NNSA Review Team finds the Safety Basis for NES at LANL, with the revised TSRs and conditions of approval, adequate to support safe operations of the limited scope activities of these (surveillance and maintenance as defined in the Safety Basis) NES at LANL.

Subsequent to submittal of the DSA/TSRs by the LANL, and after the review by PS-4, a number of issues were identified in the TSRs that required correction. These issues are listed and specifically addressed below and are captured in the Conditions of Approval (COAs).

The ISSUES involved, specific additions and clarifications to the Administrative Controls delineated in the TSRs. These _ additions and clarifications were required to ensure that the controls relied upon in the Barrier Analysis of the DSA were fully incorporated into the TSRs.

NNSA fully negotiated the ISSUES and corrections to the DSA and TSRs with the facility.

1.2 Basis and Defensibility for the Decision to use a DSA Prepared in Accordance with DOE STD 1120-1998 as the facility safety basis

At the time of the writing of this SER, there is no rule compliant safety basis in place for the Nuclear Hazard Category 2 and 3 Environmental Sites at LANL. Under 10CFR830 Subpart B criteria, a DSA for NES at LANL prepared according to DOE Standard 1120-2002, *"Integration Of Environment, Safety, And Health Into Facility Disposition Activities,"* is a recognized Safe Harbor methodology for DSA preparation. Preparation of this DSA and associated TSRs for NES at LANL ensures the following objectives are met:

1. Through the use of DOE-STD-1120-1998 a compliant Hazard Analysis (HA) was developed;
2. Through the production of 10CFR830 Subpart B compliant TSRs, combined with this SER safe operations are ensured; and
3. In complying with objectives 1, & 2 above, the DSA and TSRs are supported as fully meeting the requirements of the 10CFR830 Subpart B DSA Safe Harbor for the Nuclear Environmental Sites at LANL.

The formal hazards analysis provides a significant safety value to the workers, the public and the environment in that all of the hazards are identified and evaluated in a rigorous manner so that appropriate controls can be derived and implemented. This DSAITSRs provide the framework for understanding the hazards and the risk mitigation associated with limited scope activities and operations associated with the NES at LANL. The evaluation of the hazards and risks are necessary in order to derive the appropriate controls. The DSA and the TSRs and the stated COAs in this SER for the NES at LANL provide the basis for NNSA to accept (in the SER) the identified residual risks (defined in terms of compliance with 10CFR830 Subpart B compliance as defining acceptable risks when compliance is maintained) of Nuclear Hazard Category 2 and 3 operations.

The DOE-STD-1120 Hazards Analysis (note: a Hazards Analysis is not a risk based document per se as it identifies the hazards that drive consequences as applicable to the public, workers, or the environment, and may, separately identify frequencies, but not the product of the two) adequately addresses the hazards associated with containing the HC 2 and 3 inventories over the *time* frame prior to approval of restoration or remediation activities. The significant Hazard Controls (HCs) were developed into compliant TSRs to ensure that activities associated with maintenance, surveillance, and limited characterization operations are carried out safely and remain within the safety envelope established in the approved DSA and revised TSRs attached to this SER. The following is a summary of the Safety Controls identified in the DSA and revised TSRs.

The Safety Controls identified in the NES DSA are summarized as follows:

1.2.1 Design Features

Barrier 1 – Inventory Isolation System

The Inventory Isolation System, which comprises primary containers, configuration of burial, depth at which hazardous materials are buried, and the thickness and characteristics of the cover material, is the primary passive barrier to the release of nuclear or hazardous materials and to the interaction of disposal sites with external forces or other potential release mechanisms. The Inventory Isolation System is a TSR design feature.

1.2.2 Administrative Controls

Barrier 2 – LANL Safety Management Programs

Numerous site safety management programs act as additional barriers to a release of nuclear or hazardous materials by directly or indirectly supporting the Barrier #1 and are TSR administrative controls. The first program is the Nuclear Environmental Sites (NES) Surveillance and Maintenance (S&M) Program.

NES Surveillance and Maintenance Program – A NES S&M program ensures that the current NES waste-isolation characteristics are maintained. The program also evaluates changes in the physical setting at the NES that could significantly affect waste-isolation characteristics, and evaluates the presence and magnitude of contaminant migration at the NES. This program ensures that the minimum functional requirements of the design feature are met. The NES S&M Program consists of the following elements:

Prohibition of the addition of HAZARDOUS MATERIALS to the NES by S&M activities,
Vegetation maintenance,
Erosion control and cover maintenance measures,
Access control and maintenance measures,
Drilling controls,
Sampling and survey measures,
Geological mapping, and
Visual inspections.

The other safety management programs listed below are Lab-wide programs, elements of which apply toward ensuring the safety of workers, the public, and the environment.

Safety Management Programs (SMPs)

ANL Safety Management programs form an important aspect of the overall hazards control associated with the specified Surveillance and Maintenance activities. The LANL wide Safety Management Programs specifically identified in the DSA and attached TSRs include:

- Integrated Work Management Program
- Unreviewed Safety Question Program
- Nuclear Criticality Program
- Radiation Protection Program
- Quality Assurance Program
- Abnormal Event Reporting Program
- Qualification and Training Program
- Record-Keeping Program
- Configuration Management Program
- Vehicle and Equipment Maintenance Program
- Emergency Management Program
- Fire Protection Program
- Calibration Program
- Hazardous Materials Protection Program
- Radioactive and Hazardous Waste Management Program

1.3 NNSA EVALUATION OF REQUIREMENTS FOR THE NES SAFETY BASIS

DOE Standard 1120-1998 delineates the use of a Target-Barrier-Hazard Analysis as an appropriate tool for evaluating hazards and identifying controls. DOE STD 1120-1998 Vol 2 Appendix H:

"...HAZARD ANALYSIS TECHNIQUES

This appendix provides a listing of hazard analysis techniques that may be used to support facility disposition activities. For each technique listed, the purpose and application, as well as a reference to additional information for each technique, are provided. The techniques referenced in this appendix should be selected based on the hazards and work scope of the disposition activity....

Hazard Analysis	Purpose/Application	Ref.
Target-Barrier-Hazard Analysis	An effective technique for assessing the performance capabilities of barriers that are used to control hazards.	7, 9, & 10

- 7. EG&G Idaho, DOE-76-45/29 (SSDC-29), *Barrier Analysis*, July 1985.
- 9. Hazard and Barrier Analysis Guidance Document, U.S. Department of Energy, Rev. 0, November, 1996.
- 10. Worker Protection Management for DOE Federal and Contractor Employees Guide for use with DOE Order 440.1, DOE G 440.1-1, U.S. Department of Energy, July 1997...."

DOE STD 1120-1998 further provides guidance on the evaluation and control when there are inherent uncertainties in the material inventory involved.

DOE STD 1120 V1 states:

"...3.3.3 Uncertainties in Material Inventory Estimates or Facility Conditions

Uncertainties in material inventories or hazardous conditions need to be reflected in safety controls. Such a situation can be encountered if intrusive characterization is needed to confirm material inventories (e.g., obtaining samples of materials in locations or vessels that are not readily accessible). When uncertainties exist, conservative assumptions may be made when specifying safety controls provided that: (1) hold points are established for conducting characterization or additional analysis to determine if the condition warrants establishing or changing a safety control; and (2) assumptions are sufficiently conservative to ensure that safety is not compromised before or during characterization activities...

...3.3.4 Hazard Baseline Documentation

Documented Hazard Analyses - Documented hazard analyses are prepared for radiological facilities as well as non-nuclear facilities. The intent of the documented hazard analysis is to issue formal documentation of the integrated hazard analysis and specified controls¹⁰. The documented hazard analysis should contain: (1) a facility description; (2) a description of disposition activities, hazards, and normal operating and emergency procedures; (3) a hazard analysis; (4) a description of physical design features; (5) administrative and engineering controls; and (6) a description of applicable site-generic health and safety programs ..."

10 CFR 830 Subpart B states in Table 2 of Appendix A:

- | | |
|--|--|
| <p>°...(6) A DOE environmental restoration activity that involves either work not done within a permanent structure or the decommissioning of a facility with only low-level residual fixed radioactivity.</p> | <p>(1) Using the method in DOE-STD-1120-98 or successor document, and
 (2) Using the provisions in 29 CFR 1910.120 (or 29 CFR 1926.65 for construction activities) for developing a Safety and Health Program and a site-specific Health and Safety Plan (including elements for Emergency Response Plans, conduct of operations, training and qualifications, and maintenance management)..."</p> |
|--|--|

The rule defines the safety basis as the documented safety analysis and the hazard controls that provide reasonable assurance that a DOE nuclear facility can be operated safely and in a manner that adequately protects workers, the public, and the environment. The authorization basis is safety documentation that supports the decision to allow a process or facility to operate. Included are corporate operational and environmental requirements as found in regulations and specific permits, and, for specific activities, work packages or job safety analyses.

The DSA submitted adequately evaluated the limited scope activities for the NES at LANL and appropriately identified essential controls to ensure safe operations. The DSA as submitted along with the revised TSRs attached to this SER provide a satisfactory method for incorporating the requirements from DOE STD 1120-1998 in a compliant manner.

1_4 Conditions of Approval

The NES DSA and the revised TSRs approval is subject to the following required conditions of approval meant to **reinforce and clarify the intent** and/or correct errors related to the controls proposed in the Safety Basis. Compliance with the SER and COAs is a safety basis requirement. These conditions of approval are:

1. No operations are allowed in NES except those specifically identified in the DSA and attached TSRs. Any changes from the Safety Basis will be evaluated under the USQ process in accordance with the NNSA approved LANL site wide procedure.
2. The draft implementation plan shall be revised to incorporate these COAs and the attached TSRs and must be submitted not later than February 28, 2005. Emphasis on the IP by the RDL shall be careful planning and meeting IP suspense dates. It would be prudent to call out in the IP major milestones, which shall be met. It is advised that the RDL not include "minor planning dates" used for internal tracking purposes as what is committed to in the IP will be taken as a safety basis commitment once **approved** by NNSA.
3. A *condition of approval*, before this DSA is implemented formal readiness verification by NNSA Facility Operations must be completed. The facility is not authorized to operate under the new specific safety controls in the approved safety basis until released by NNSA Facility Operations after completion of readiness verification. The type and level of readiness assessment to be performed shall be established by the LASO Facilities Operations Branch.

There has been significant confusion on expectations for Verification for Readiness in operating under a new Safety Basis. Some people interpret the applicable requirements for DOE to ensure that safety controls are in place to not be required. Other interpretations exist where personnel take the position that the verification does not need to be formal. These interpretations are not correct and are not supported by this SER.

Formal readiness verification by DOE and the contractor is required.

The Readiness evaluation process is defined in **DOE-STD-1120-98/Vol. 1** as:

"A systematic examination of facilities, equipment, personnel, procedures and management control systems, performed prior to initiating a facility disposition project, to ensure that disposition activities will be conducted within its approved safety basis."

Further emphasis for verification implementation of controls for safety is supplied in Section 3.4.1, Evaluating Readiness as follows:

*"An evaluation of readiness should be **completed before beginning work to ensure that all hazards have been identified, appropriate ES&H requirements have been met, and safety systems and controls (e.g., procedures and training) are in place and capable of performing their intended function. The scope and rigor of activities necessary to determine the "readiness" of a facility disposition activity will vary depending on the type and magnitude of hazards present, the***

*complexity of the work to be performed, and the extent to which previous readiness evaluations addressed planned disposition work activities and hazards. Figure 3 provides a decision logic flow diagram for determining readiness of a disposition activity. As reflected in the diagram, an evaluation of readiness should be performed when there is a: (1) transition from the operations phase to facility disposition (e.g., to long term S&M or deactivation); (2) transition between disposition phases (e.g., deactivation to decommissioning); (3) change in the contractor responsible for managing the disposition activity; (4) significant change that affects the established safety basis, **as discussed in Section 3.4.2, or work scope (e.g., change in task); or (5) a positive Unreviewed Safety Question (USQ) determination as defined in DOE 5480.21 for Hazard Category 2 or 3 nuclear facilities. Requirements and guidance for performing readiness evaluations are provided in DOE O 425.1, Startup and Restart of Nuclear Facilities, and DOE-STD-3006-95, Planning and Conduct of Operational 11 Readiness Reviews, respectively. In addition, DOE 430.1A requires the performance of a Pre-Transfer Review which is further described within its associated deactivation implementation guide.**"*

Per this SER COA, a formal verification of implementation of safety controls is required per this COA in accordance with the excerpts above from DOE-STD-1120 and Figure 3 below.

- 4. A condition of approval, before this DSA is fully implemented a formal, detailed, and thorough crosswalk between the applicable and appropriate elements of DOE Order 5480.19 'Conduct of Operations' and the Safety Management Programs required in the attached TSRs shall be developed. The cross-walk shall establish those elements from DOE Order 5480.19 that are applicable to the operations conducted under this NES DSA/TSRs in accordance with the expectations in DOE Standard 1120-98. The cross-walk shall be provided to the LASO Facilities Operations Branch as part of the formal readiness verification process.*

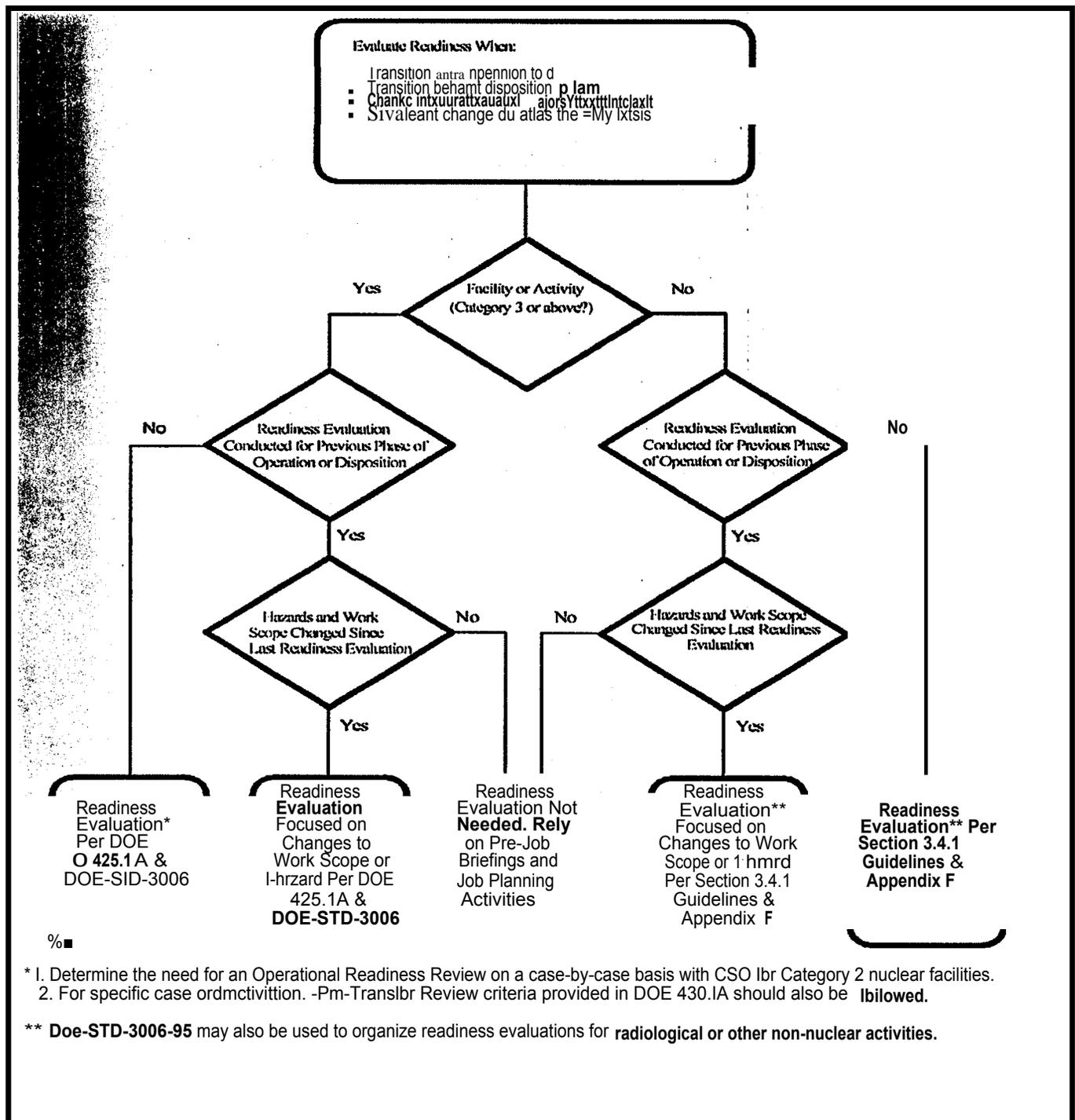
DOE Standard 1120-98 Volume 2, Appendix G states in part:

"...However, the alternative requirements only apply to Environmental Restoration Activities that either (1) do not involve work within permanent structures,...

...contractors may follow requirements in 29 CFR 1910.120 and 29 CFR **1926.65** to develop and implement a Safety and Health Program and a site-specific Safety and Health Plan which include elements for emergency response plans, **conduct of operations**, training and qualifications, and maintenance management in lieu of the above mentioned nuclear safety Order requirements..."

Additional details related to the necessity for this COA are provided in Section 7.

FROM:DOE-STD-1120-98/Vol. 1 Figure 3. Readiness Evaluation Determination



1.5 TSR Issues and Required Revisions

The TSRs were reviewed and found to have a number of issues related to the identification of controls specified in the DSA, yet not fully incorporated into the TSRs. To address these specific issues NNSA met with and negotiated specific changes to the TSRs. The TSRs were vetted through the facility to ensure that they were implementable with the attendant modifications. The revised TSRs are attached to this SER and constitute the formal approved TSRs. Formal delineation of the changes and bases for the changes to the TSRs are provided in Section 6 O Technical Safety Requirements O

A summary of the TSR issues is provided here and the details are left to Section 6.

1. The addition of the language that results in a change in the manner in which TSR violations are interpreted. The TSRs must be logically consistent and clear when a violation occurs.
2. The NES DSA clearly establishes as a result of the hazards analysis the need for visual inspections to ensure Barrier #1 is intact. The TSRs were written to allow for violating the specified frequency of inspections without there being a TSR violation. For the control to be effective a specific inspection frequency must be delineated and violation of the specified annual frequency will constitute a TSR violation.
3. The NES DSA implies that there are specific controls on the NES activities prohibiting certain actions related to prohibiting a breach of the Inventory Isolation System (Barrier #1). This control was not effectively carried forward to the TSRs as either a specific AC or other type of prohibition.
4. Section 3.4.2 O Barrier 2 O LANL Safety Management Programs!) provides significant details and important controls that have not been fully incorporated into the TSRs. Drilling into the Inventory Isolation System at any of the ER sites is prohibited and needs to be emphasized that even an inadvertent intrusion is considered outside the analyzed space within the DSA.

Additional significant controls identified in the DSA related to controlling drilling and sampling activities were not fully incorporated in to the TSRs. These include material limits, survey and measurement requirements, stop work, and corrective actions that need to be developed and established through the TSRs as enforceable controls. The TSRs were revised to provide a one-to-one correspondence between the elements relied upon in the DSA and the TSRs and for each of the elements of the drilling controls directive language was added.

1.6 Summary of Accountability LANL NES DSA/TSRs

NNSA has reviewed and determined that with the LANL NES DSA and the revised TSRs, attached to this SER, with the specific COAs are adequate to control the nuclear safety risks (defined as being acceptable when compliance with 10CFR830 Subpart B is ensured) at LANL for operations at the specified NES for the **specific activities identified**.

2.0 Review Process

The technical review of the DSA/TSRs was performed by NNSA LASO personnel. The Senior Authorization Basis Manager and key qualified safety analyst staff reviewed the DSA/TSR submitted by LANL with strict consideration of the 10 CFR 830 subpart B Safe Harbor invoked and through detailed evaluation of the requirements stipulated by that Safe Harbor. Specific consideration of the hazards analysis methodology that was used as well as careful consideration of the derivation of specific controls from the results of the hazards analysis.

The review process was performed in accordance with the approved SABT review procedure which requires detailed and substantive comment development and thorough internal quality review prior to providing feedback to the contractor. Only after all of the review comments are fully vetted are they provided to the facility management for factual accuracy review. This process ensures that the final review, changes to the TSRs, and the specific conditions of approval are those that meet a significant and substantive safety standard. This process avoids delays and changes as a result of minor editorial or non-safety issues.

3.0 Base Information

Basis of Approval

The LANL NES DSA/TSRs was submitted to NNSA by LANL to furnish a safety basis for HC-2 and 3 Environmental Activities of Maintenance, surveillance, and characterization in support of ongoing regulatory driven environmental activities at LANL. The DSA and TSRs were developed in accordance with requirements of 10 CFR 830 Subpart B and the DOE STD 1120-1998 and applicable sections from 29 CFR 1910.120 Safe Harbor.

The review carefully evaluated the submitted documents against these requirements and found that the methods used provided results such that the hazards were appropriately evaluated and the correct type, level, and number of controls were identified. The DSA and the revised TSRs provide both a compliant and an adequate evaluation of the hazards and identification of the controls to ensure safe operations with the nuclear hazard category 2 and 3 environmental sites at LANL.

Facility Summary

Chapter 1 of the DSA provides both the environmental aspects of the NES at LANL as well as detailed descriptions of each of the ten NES categorized as nuclear facilities in accordance with 10 CFR 830 Subpart B requirements. Three of the NES are located at TA-21 and these are Material Disposal Areas (MDAs) A, B, and T; Another NES is the MDA W, which is located at TA-35. In addition, there is the former wastewater treatment plant (WWTP) and contaminated soils area at Pratt Canyon within TA-35. There are MDA AB at TA-49, MDA C at TA-50, and MDA H at TA-54. The remaining NES is the Resin Tank at TA-53.

This section of the DSA provides the nuclear material inventory for each NES as well as the Hazard Category in accordance with DOE STD 1027 threshold quantities. In addition, detailed

information is provided as to the NES characteristics, previous uses and history of operation. The information is based on historical document review and interviews of personnel formerly assigned to these areas. Collectively the detailed information provides the basis for performing the hazards analysis.

Chapter 2 of the DSA presents detailed information regarding the activities covered by the Hazards Analysis. These activities are limited to Surveillance and Maintenance (S&M) of the NES. Remediation efforts that would intrude on the Inventory Isolation System are specifically excluded. S&M activities are defined broadly as operations required for evaluating and maintaining characteristics important to site safety or waste isolation. These activities include site maintenance, access maintenance and control, drilling, soil and sediment sampling, biota sampling, air sampling, penetrating radiation monitoring, water sampling, vapor and soil moisture sampling, geophysical and radiological survey, surface or geologic mapping, and visual inspection.

4.0 Hazard Analysis

Hazard Categorization

The hazard categorization was performed using the best data available and also relied upon conservative estimates as to the upper bound contaminant concentrations. The hazard categorization is based on the material inventories within each NES. There are five Hazard Category 2 and five Hazard Category 3 NES at LANL. Table 1-1 from the DSA is presented below:

**Table 1-1
Hazard Category and Description of NES**

NES	Associated PRS	Brief Description of NES	Hazard Category (HC)
TA-21 ^a MDA A	21-014	Subsurface tanks and pits associated with historical liquid and solid waste disposal	2
TA-21 MDA B	21-015	Undifferentiated subsurface areas associated with historical waste disposal	3
TA-21 MDA T	21-016(a)-99	Shafts and absorption beds associated with liquid wastes	2
TA-35 MDA W	35-001	Subsurface tanks used for disposal of sodium coolant from reactor experiments	3
TA-35 WWTP ^b	35-003(a)-99	Areas of residual contamination associated with leakage from, and removal of, components of former W WTP	3
TA-35 Pratt Canyon	35-003(d)-00	Areas of residual contamination associated with discharge from former WWTP	3
TA-49 MDA AB	49-001(a)-00	Three shaft areas (1, 2, and 4) associated with historical subcritical experiments involving nuclear materials	2
TA-50 MDA C	50-009	Complex of pits and shafts used for disposal of combustible and noncombustible debris and sludge-filled drums	2
TA-53 Resin Tank	53-006(b)-99	Subsurface tank that received contaminated ion-exchange resins from an accelerator facility	2
TA-54 MDA H	54-004	Shafts formerly used for disposal of classified waste	3

^aTA - Technical area.

^b WWTP = Wastewater treatment plant.

Hazard Analysis Methodology

LANL's Nuclear Waste Operations (NWO) Division is the steward for the NES on Laboratory property. None of the NES is active now or will serve as a disposal facility in the future. These sites have been inactive for years or decades and many of the activities described in this DSA have been taking place at the NES throughout that time.

Until remediation and/or invasive characterization is planned and appropriate safety analysis documentation is approved, the Laboratory must continue surveillance and maintenance (S&M) activities to ensure that site contaminants do not migrate from their current location. A **key** surveillance activity that LANL has conducted for years is drilling to determine the nature and extent of contamination. LANL is required to continue performing such drilling by the New Mexico Environment Department (NMED) Consent Order (NMED 2004). Section XI of that Order requires the Laboratory and DOE to conduct, and report the results of, prescribed investigation activities in accordance with a negotiated schedule (Section)CII). The activities include the characterization of the nature and extent of surface and subsurface contaminants at most NES because they are wholly or in part units regulated under hazardous waste regulations. Drilling at waste disposal areas like the NES is the only characterization method that facilitates direct evaluation of subsurface contaminant migration. In order to evaluate the hazards associated with these activities LANL concluded that the barrier analysis methodology is the most appropriate hazard analysis methodology for the type of work that is planned and for the configuration of the NES.

In this barrier analysis, disposal sites were reviewed qualitatively to identify potential hazards to workers, the public, or the environment from the activities and tasks described in the preceding chapter and from external forces that could impact the isolation of the waste. Qualitative analysis was performed to identify physical and administrative barriers that either prevent or mitigate these hazards. The results of the hazards analysis are the barriers, which define the control sets that are implemented through the TSRs. For each barrier, qualitative analyses of potential consequences are evaluated and then specific engineered or administrative controls are established. These results then form the basis for the development of implementing programs and procedures, which will specifically define the acceptance criteria for each of the controls. These acceptance criteria will be incorporated into the NES Surveillance and Maintenance Program described below. The result of the hazards analysis was the development of two barriers to control against adverse consequences associated with the nuclear material inventory. The first control is a TSR Design Feature, known as the Inventory Isolation System, and provides the primary barrier to the release of nuclear material to the environment. The second barrier is a comprehensive set of administrative controls specifically designed to ensure that the Inventory Isolation System meets the functional requirements and that this barrier does not degrade over time. It should be noted that Barrier Analyses are not required to address frequencies of scenario occurrence.

5.0 *Design Features*

The Design Feature evaluated in the DSA and incorporated into the TSRs is the Inventory Isolation System. The Inventory Isolation System at each NES is to be visually inspected annually for signs of degradation, damage, access control and other issues important to the long-

term integrity of the system. The Inventory Isolation System is a composite system that uses various combinations of primary containers/vessels, configuration of burial (e.g., tunnel/shaft, pit/trench), burial depth, inventory distribution, and thickness and characteristics of cover materials and caps to provide buried wastes with passive protection against effects from external forces, including those associated with activities planned for the NES.

Technical Safety Requirements (TSRs)

The TSRs include both design features, discussed above, and Administrative Controls. Safety limits and/or Limiting Conditions of Operation were not specifically derived in the hazards analysis and these are not explicitly stated in the TSRs. The results of the barrier analysis, based on evaluation of the specific activities allowed in this DSA, show that the hazards are effectively mitigated or prevented using the above referenced DF and the identified administrative controls.

The TSRs were reviewed and found to have a number of issues related to the identification controls specified in the DSA that were not fully incorporated into the TSRs. To address these specific issues NNSA met with and negotiated specific changes to the TSRs. The revised TSRs are attached to this SER and constitute the formal approved TSRs. Formal delineation of the changes and bases for the changes to the TSRs are provided below and in the revised TSRs attached to this SER.

/ TSR ISSUES:

Section 5.3.3 'Violation of TSR' of the TSRs item 4 states: "...Failing to comply with an AC statement. (Note: This is the only applicable circumstance for these TSRs)..."

The addition of the Note in effect attempts to change the manner in which TSR violations are interpreted. By stating that the item 4 is the only applicable situation in the TSRs essentially attempts to turn off the requirements of meeting the surveillance requirements, actions and intents of bases statements and other controls either explicit or implicit in the TSRs. The note has been deleted in the revised TSRs attached to this SER.

The NES DSA on page 51 states: "...To maintain depth of burial and to prevent the degradation of covers and caps from their current condition, programs need to ensure that material is not removed from the tops or sides of the disposal units and that the caps, covers, and the general disposal area are examined and evaluated periodically..."

The TSRs on page states: "...The frequency for maintenance and inspection requirements is defined in applicable implementing procedures. Exceeding the required interval for maintenance and inspection requirements is considered a procedural deficiency of the respective safety management program and is not considered a TSR VIOLATION unless deemed a pervasive failure of the program itself..."

And further states in Table 1 on page 15 that:

"...The Inventory Isolation System at each NES is to be visually inspected for signs of degradation, damage, access control and other issues important to the long-term integrity of the system..." and then specifies a frequency of "Annual"

These sections are contradictory in that a specific inspection frequency must be delineated as in Table 1 of Section 6 of the TSRs and violation of the specified annual frequency will constitute a TSR violation.

The following text has been deleted in the revised TSRs attached to this SER:

"...Exceeding the required interval for maintenance and inspection requirements is considered a procedural deficiency of the respective safety management program and is not considered a TSR VIOLATION unless deemed a pervasive failure of the program itself..."

The following changes were made to the sentence "The **frees** criteria for maintenance and inspection requirements is SHALL be defined in applicable implementing procedures."

In addition the following text was added to Section 6 'Design Features' of the TSRs:

"The Visual inspections criteria, to ensure that the Inventory Isolation System of a waste disposal unit remains intact, SHALL be developed and established in approved implementing documents."

Note: This control is a "directive-language AC" and does not fall under the provisions regarding program intent and invalidation of the barrier analysis summary as described in section 5.3.3, Violation of TSR. Moreover, any noncompliance with this AC results in immediate TSR VIOLATION."

3. The NES DSA states: "...With the exception of drilling, the activities under this DSA that do disturb the surface are limited to actions such as placing pin flags, driving small area-location stakes, surface sampling and shallow hand-augering, and putting in fence posts (as needed for access control).. Limitations on potentially ground-disturbing activities are intended to ensure that material is not removed from the tops or sides of the disposal units..."

This statement in the DSA implies that there is a specific control on the NES activities prohibiting other than those specified in the above statement. However, this control was not carried forward to the TSRs as either a specific AC or other **type of prohibition**.

The following text, from the DSA Barrier Analysis, was added to TSRs Section 5.6.1 'Nuclear Environmental Site Surveillance & Maintenance Program':

"The intent of this TSR is to limit the potential for breaching the Inventory Isolation System and to ensure that material is not removed from the tops or sides of the disposal units."

4. Section 3.4.2 'Barrier 2 — LANL Safety Management Programs' provides significant details and important controls that have not been fully incorporated into the TSRs. The DSA states on page 56:

"...Drilling controls — Drilling activities at the NES will be conducted using approved procedures. Several key elements ensure that drilling does not intrude into disposal units, mitigate the consequences if an intrusion occurs inadvertently, and ensure that the entire drilling program is well controlled and run safely..."

Drilling into the radioactive inventory at any of the ER sites is **prohibited and needs to be** emphasized that even an inadvertent intrusion is considered outside the analyzed space within the DSA.

The following text has been added to the TSRs Section 5.6.1 'Nuclear Environmental Site Surveillance & Maintenance Program' item 5 'Drilling SHALL be controlled to minimize the potential to disturb buried inventory in waste disposal units. This control is implemented with the following elements:'

"Breach of a disposal unit by drilling is an Authorization Basis Violation and constitutes an immediate Unreviewed Safety Question and requires immediate notification of the Los Alamos Site Office (LASO), Senior Authorization Basis Manager (SABM). This constitutes a condition that is outside of the Safety Envelope established in the Documented Safety Analysis (DSA)."

The DSA States on page 57:

"...If the disposal unit boundaries cannot be determined with a high degree of certainty, the distance between drilling and disposal units may need to be greater than if the unit boundaries are very well defined and well characterized..."

This statement implies a significant administrative control necessary to ensure that the waste inventory will not be disturbed (i.e., no intrusion) and yet this control was not carried forward to the TSRs for development of criteria and specific procedures.

The DSA further states:

"...Exhumed material (including cuttings and core) is evaluated for radioactive and hazardous chemicals and to determine the nature **of the material matrix** immediately after the material is brought to the surface. The general process for core evaluation is that the core is laid on a flat surface where a survey is performed for chemicals of concern and radioactive materials before the barrel is opened.

Radioactive and hazardous material limits will be established for exhumed material. If these limits are exceeded, if the matrix is not tuff, native soils, or sediments, or if unexpected conditions develop, drilling will be stopped in a safe condition and the situation will be stabilized. Evaluation will be initiated to determine the appropriate actions that need to be taken. Evaluation to determine if

the inventory in a disposal unit has been breached will include an evaluation of the radioactive and hazardous material content and an analysis of the matrix material to determine if its form is consistent with original waste or, instead, the matrix is contaminated soil, rock, fractures, or voids. If the matrix is consistent with disposed waste, it is a positive indication that a waste disposal unit has been breached.

If evaluation concludes that inventory in a disposal unit was not breached, drilling can continue and exhumed material will be managed commensurate with the levels of radioactive or hazardous constituents.

If a disposal unit has been breached, drilling in that hole will be terminated permanently and the hole will be stabilized. Exhumed material will be handled according to the Radioactive and Hazardous Waste Management Program (described below under the Safety Management Programs) and a thorough evaluation will be conducted to determine why a disposal unit was breached..."

In addition the DSA states:

"...The size of the borehole and rate of drilling will be controlled to ensure that material will be removed at such a rate as to allow continuous or near continuous evaluation of exhumed material and to minimize the amount of contaminated material that could potentially reach the surface..."

There are essential controls imbedded in this analysis that need to be included or strengthened in the TSRs. These include material limits, survey and measurement requirements, stop work, and corrective actions that need to be developed and established through the TSRs as enforceable controls. The elements of the 'drilling controls' relied upon in the Barrier analysis of the DSA were not carried forward in sufficient detail to the TSRs.

The TSRs were revised to provide a one-to-one correspondence between the elements relied upon in the DSA and the TSRs and for each of the elements of the drilling controls directive language was added. The directive language now requires as a TSR control that specific criteria must be established in approved implementing documents. In addition, directive language was added to item 8 'Visual inspections' the surveillance and inspections control for overall aspects of the maintenance of the NES at LANL. The revised language for the issues associated with the TSRs is provided in the revised TSRs attached to this SER.

7.0 *Administrative Controls*

The NES adequately identified in the TSRs the appropriate institutional administrative control programs that ensure safe operation for the specified Surveillance and Maintenance activities associated with the Nuclear Environmental Sites. Each of these programs is required by the TSRs to be adapted to the specific activities and operations described in the DSA. Failure to meet the programmatic intent constitutes a condition that is outside the

safety envelope as established in the DSA. Administrative programs required for TSR compliance are:

Integrated Work Management Program — This program defines requirements and processes for doing work in a safe, secure, environmentally responsible manner.

Unreviewed Safety Question Program — The USQ process facilitates the ability to make changes to support day-to-day operations. It also provides a mechanism for keeping the safety basis current by reviewing potential USQs, reporting USQs to DOE, and obtaining approval from DOE prior to taking any action that involves a USQ.

Nuclear Criticality Program — Worker health and safety at the NES is assured for S&M activities with a potential for nuclear criticality by addressing activities which may involve significant quantities of fissile materials to provide protection from the occurrence and consequences of a nuclear criticality accident.

Radiation Protection Program — The NES Radiation Protection program ensures that employees, contractors, subcontractors (for example, maintenance subcontractors), visiting scientists, DOE or Department of Defense personnel, members of the public, and any other personnel who perform work at the NES sites conduct their work such that radiation doses resulting from their work are kept as low as reasonably achievable (ALARA).

Quality Assurance Program — LANL's Institutional Quality Management Program (IQMP) assigns roles, responsibilities, authorities and accountabilities; defines policies and requirements; provides for the performance and assessment of work; and the identification and application of improvement initiatives.

Abnormal Event Reporting Program — The NES Abnormal Event Reporting program ensures that injuries or illnesses, environmental incidents, radiological incidents, property damage, and any other reportable occurrences are reported according to the required method set forth by LANL.

Qualification and Training Program — The NES Qualification and Training program ensures that LANL's institutional training requirements are met and identifies NES-, job-, and task-specific training necessary for NES workers to complete their work safely and effectively, minimizing the potential for accidents resulting in the release of radiological material.

Record-Keeping Program — The NES Record-Keeping program supports LANL's records management program by ensuring that records created in the normal course of business are maintained and protected from unauthorized destruction or removal. The NES records important to safety during S&M activities include personnel records documenting radiation doses, documentation of identified hazards, and technical baseline documentation.

Configuration Management Program — The NES Configuration Management program ensures that changes to the technical baseline are properly identified, developed, assessed (technically reviewed and validated), approved, scheduled, implemented, and documented through the use of a formal process.

Vehicle and Equipment Maintenance Program – The NES Vehicle and Equipment Maintenance program ensures the proper implementation of maintenance and work control requirements and primarily encompasses the maintenance of vehicles and equipment that may be in use near or on the NES.

Emergency Management Program – The NES Emergency Management program ensures NES personnel and emergency management organizations are ready to respond rapidly and correctly to accident situations such that the effects of the accident can be minimized. The program includes emergency procedures, activation of emergency organizations, assessment and protective actions, worker training to minimize exposure to radiological and hazardous materials, and recovery actions to minimize releases in the unlikely event that the inventory isolation system is breached. As such, this program is credited with minimizing public, worker, and environmental consequences from releases of radioactive or hazardous materials from the NES during an accident.

Fire Protection Program – The NES Fire Protection program ensures fire safety during NES S&M activities. The program has provisions for ensuring the implementation of NES-related fire protection activities such as worker fire prevention and safety training, combustible controls, fire watch, and fire extinguisher inspection, testing, and maintenance. The NES Fire Protection program serves as a preventative barrier to fires initiating at NES and minimizes the potential for a significant fire should one occur, thus serving as a mitigative barrier as well.

Calibration Program –The NES Calibration program ensures the proper control, use, and calibration of tools and equipment necessary for NES S&M activities. The NES Calibration program particularly ensures the safety of workers and the public through the proper calibration of measuring and test equipment used to manage and control radiation doses to minimize personnel exposure and limit inadvertent transfer beyond area boundaries and is a preventative barrier.

Hazardous Materials Protection Program – The NES Hazardous Materials Protection program ensures that workers are educated about the hazardous materials they work with and are properly trained to ensure their safety during NES S&M activities involving hazardous materials. The NES Hazardous Materials Protection program adheres to OSHA requirements.

Radioactive and Hazardous Waste Management Program – The NES Radioactive and Hazardous Waste Management program ensures the implementation of LANL waste management requirements for NES S&M activities. By implementing the waste management requirements, the NES further ensures the health and safety of workers and the public as well as minimal impact to the environment by reducing the potential for a release of radioactive or hazardous material as the result of improper handling, storage, or disposal of radioactive or hazardous waste.

During the review of the basis for using DOE Standard 1120-98 as the Safe Harbor for meeting 10 CFR 830 subpart requirements it was noted that a formal cross-walk between the Safety Management Programs in the TSRs and those applicable and appropriate elements from DOE Order 5480.19 was needed.

DOE-STD-1120-98/Vol. 2, Appendix G states:

"...DOE has decided that certain Environmental Restoration Activities which involve quantities of nuclear materials that meet or exceed the threshold for Category 3 hazard nuclear facilities as determined in accordance with DOE-STD-1027-92, "Hazard Categorization and Accident Analysis Techniques for Compliance with DOE Order 5480.23, Nuclear Safety Analysis Reports," may use alternative requirements in lieu of the safety management requirements of the nuclear safety Orders (SAR, TSR, USQ, Training and Certification, Conduct of Operations, and Maintenance Management). However, the alternative requirements only apply to Environmental Restoration Activities that either (1) do not involve work within permanent structures, or (2) involve decommissioning activities on facilities with only low level residual fixed radioactivity that remains following reasonable removal of radioactive systems, components, and stored materials and which do not require the use of existing, operating, mechanically-driven, safety systems or components designed to prevent or mitigate the accidental release of hazardous radioactive materials.

Provided the activities meet either of the above two criteria, contractors may follow requirements in 29 CFR 1910.120 and 29 CFR 1926.65 to develop and implement a Safety and Health Program and a site-specific Safety and Health Plan which include elements for emergency response plans, conduct of operations, training and qualifications, and maintenance management in lieu of the above mentioned nuclear safety Order requirements (or as superseded by rules). If a contractor chooses this alternative, it must also_ implement:

- (1) the Quality Assurance requirements of 10 CFR 830.120; and
- (2) the Occurrence Reporting and Processing of Operations Management requirements of DOE Order 232.1 (or as superseded by the ORPS rule).

If this alternative is chosen, the documents required under the aforementioned regulations shall be submitted to the Department for review and approval before such work can begin..."

DOE Order 5480.19 "Conduct of Operations" states:

"...The guidance contained in this attachment for the Conduct of Operations at DOE facilities is based on well-developed industrial operations practices. The guidelines are written to be flexible, so that they encompass the range from large, permanent DOE test or production facilities to small research or testing facilities. These guidelines form a compendium of good practices and describe key elements of programs that support operations at DOE facilities. Their implementation should result in a high level of performance and therefore contribute to safe and reliable operation.

Experience has shown that the better operating facilities have well-defined, effectively administered policies and programs to govern the activities of the

operating organization, including the areas described by these guidelines. These guidelines have, therefore, been prepared to assist facilities in the review and development of programs important to operations. Not all activities in the operations area are addressed. Some areas, such as the technical aspects of specific equipment operation, are not included because they involve facility-specific situations requiring unique direction. However, use of these guidelines should support or complement performance in the areas not addressed.

These guidelines have been written to assist facilities in meeting operations performance and safety objectives. It is intended that they be used to review existing or planned programs or facilities and in developing programs where none presently exist. It is expected that facilities may use different approaches or methods than those defined in the guidelines, but facilities are expected to meet the intent of these guidelines..."

There are eighteen specific chapters in DOE Order 5480.19 that may be applicable to the operations conducted under this NES DSA/TSRs. NNSA review of the DSA and the revised TSRs has found that a number but not all of the 18 chapters of DOE Order 5480.19 are addressed to some extent in the Safety Management Programs defined in the TSRs. To ensure that all of the applicable and appropriate elements of the DOE Order 5480.19 are adequately addressed a fourth condition of approval has been established. The intent of this COA is to require the facility to ensure through a rigorous evaluation that the applicable and appropriate elements identified in the eighteen chapters are addressed in the required safety management programs committed to and required in the attached TSRs. It is necessary that the facility develop a thorough and detailed cross-walk that documents the relationship between the TSRs and the applicable and appropriate elements in DOE Order 5480.19.

8.0 List of AB Documents

1. LA-UR-04-7505, ER2004-0606, "Documented Safety Analysis for Surveillance and Maintenance of Nuclear Environmental Sites at Los Alamos National Laboratory," November 2004.
2. LA-UR-04-7504, ER2004-0607, "Technical Safety Requirements (TSRs) for Surveillance and Maintenance of Nuclear Environmental Sites at Los Alamos National Laboratory," November 2004.
3. NNSA Safety Evaluation Report (SER) for the "Documented Safety Analysis and Technical Safety Requirements for Surveillance and Maintenance of Nuclear Environmental Sites at Los Alamos National Laboratory, January XX, 2005.