



**Department of Energy**  
**National Nuclear Security Administration**  
Washington, DC 20585

JUN 23 2003

OFFICE OF THE ADMINISTRATOR

The Honorable John T. Conway  
Chairman  
Defense Nuclear Facilities Safety Board  
625 Indiana Avenue, NW, Suite 700  
Washington, DC 20004-2901

Dear Mr. Chairman:

Your letter of April 10, 2003, requested a report within 60 days that addresses how the Department will resolve your concerns in the current safety bases for some of the Lawrence Livermore National Laboratory's defense nuclear facilities. A response, developed by the National Nuclear Security Administration's Livermore Site Office and Lawrence Livermore National Laboratory is enclosed. I think it represents a reasonable approach to address the issues raised in your letter. Livermore Site Office and Lawrence Livermore National Laboratory management would like to brief the Board in October on the progress of addressing your concerns. Ms. Camille Yuan-Soo Hoo, Manager of the Livermore Site Office, is responsible for ensuring resolution of these issues. If you have any questions, please contact her at 510-637-1800.

Sincerely,

A handwritten signature in black ink, appearing to read "L. F. Brooks".

Linton F. Brooks  
Administrator

Enclosure  
cc: M. Whitaker, DR-1

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NATIONAL NUCLEAR SECURITY ADMINISTRATION  
LIVERMORE SITE OFFICE

FACSIMILE TRANSMITTAL SHEET

TO:	FROM:
MIKE THOMPSON	RALPH KOPENHAUER
COMPANY:	DATE:
	6/5/03
FAX NUMBER:	TOTAL NO. OF PAGES INCLUDING COVER:
301-903-8056	14
PHONE NUMBER:	SENDER'S PHONE NUMBER:
301-903-5648	925-422-3126
RE:	YOUR REFERENCE NUMBER:
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NOTES/COMMENTS:

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**Department of Energy**  
National Nuclear Security Administration  
Livermore Site Office  
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7000 East Avenue  
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DNFSB SAFETY BOARD

MEMORANDUM FOR DR. EVERETT H. BECKNER  
DEPUTY DIRECTOR FOR DEFENSE PROGRAMS

FROM:

*Dr. Phil Hill*

CAMILLE YUAN-SOO HOO  
MANAGER

SUBJECT:

Defense Nuclear Facilities Safety Board (DNFSB)  
Letter of April 10, 2003 (Doc. # LSONST:030040)

Attachments:

- (1) Letter from D. K. Fisher to C. Yuan-Soo Hoo, dated May 16, 2003, Lawrence Livermore national Laboratory (LLNL) responses to Defense Nuclear Facilities Safety Board (DNFSB) Letter dated April 10, 2003
- (2) LSO Response Regarding DNFSB April 10, 2003 Letter and associated Staff Issue Report

In the Board's letter of April 10, 2003 to the Administrator, they expressed concerns about the safety bases for some of LLNL defense nuclear facilities and NNSA's oversight of these safety bases. The Board requested a report documenting how NNSA will resolve the issues they identified.

The Livermore Site Office (LSO) has worked with LLNL to respond to these issues. Attachment 1 details the actions that LLNL will take to resolve the issues regarding their Authorization Basis program. LSO has reviewed and concurs that these actions will address the issues raised by the Board. Attachment 2 specifies the actions that will be taken by LSO to improve its oversight of issues affecting the safety bases of defense nuclear facilities.

In regard to the Building 231 Vault (B231V) issue, LLNL has performed a systematic evaluation of the B231V conditions of approval specified in the LSO April 2002 Safety Evaluation Report. The conditions of approval have been dispositioned as either: 1) no longer applicable as the facility radiological inventory has been to a radiological level, 2) now included in the B231V Hazard Analysis Report (HAR) consistent with other radiological facilities, 3) no longer applicable as the safety basis document is no longer the Safety Analysis Report,

Dr. E. Beckner

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or 4) condition completed by LLNL. The basis for these conclusions have been discussed with LSO. LLNL has assured and LSO has verified that the facility inventory is below Hazard Category 3 threshold quantities (STD-1027) and effective means of inventory control is in place. LLNL/LSO will formally track conditions of approval in SERs as described in the LSO response.

I would appreciate you forwarding this response to the Board.

If you have any questions on this matter, please contact Ralph Kopenhaver at (925) 422-3126.

cc (w/ attachments):

J. Felty, NA-117

R. Peterson, NA-117

K. Davis, DR-1

T. Wyka, DR-1

M. Thompson, NA-117

J. Mangeno, NA-1

D. Crandall, NA-11

D. Fisher, LLNL, L-668

J. Sefcik, LLNL, L-359

H. Wong, LLNL, L-375

R. Failor, LLNL, L-383

G. Campbell, LLNL, L-668



# Lawrence Livermore National Laboratory

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DNF SAFETY BOARD



*Safety, Security and  
Environmental Protection Directorate*

May 16, 2003

Ms. Camille Yuan-Soo Hoo  
Manager, Livermore Site Office  
National Nuclear Security Administration  
U.S. Department of Energy  
Livermore Site Office  
P. O. Box 808, L-293  
Livermore, CA 94551-0808

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Subject: **Lawrence Livermore National Laboratory (LLNL) Responses to Defense Nuclear Facilities Safety Board (DNFSB) Letter dated April 10, 2003.**

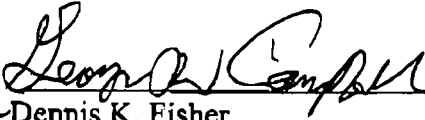
Dear Ms. Yuan-Soo Hoo:

The Defense Nuclear Facilities Safety Board (DNFSB) letter from J. Conway, April 10, 2003, with associated Staff Issue Report described deficiencies in versions of documented safety analyses (DSAs) for some Lawrence Livermore National Laboratory (LLNL) facilities reviewed by DNFSB staff. The DNFSB letter acknowledges that many of the deficiencies had been previously identified. The DNFSB letter indicated that further attention was needed for complete and timely resolution of these weaknesses. LLNL has reviewed the letter and Staff Issue Report and takes the input seriously. The attached report acknowledges and discusses the specific areas in those DSAs that can be improved. We have submitted 10CFR830, Subpart B compliant DSAs for most of the LLNL facilities and are working within our schedule exemptions for the remaining DSAs. Any outstanding compliance issues have been or will be addressed in the final submission.

Significant improvements in the Authorization Basis (AB) development process have been taken based on an LLNL root cause assessment done in 2000. The corrective actions taken included; strengthening institutional AB guidance, development of AB training and procedures, performance of an AB baseline review, and working closely with the NNSA/Livermore Site Office. LLNL reassures that it is committed to continue on the AB documented process improvement path forward. The potential inadequacies discussed in the Staff Issue Report were taken seriously by LLNL and our specific responses to each are provided in the attached report. We believe that these responses adequately address the concerns regarding LLNL actions described in the DNFSB letter.

Should you have questions related to this letter or attachment, please contact me at (925) 422-3343, Joe Sefcik (925) 423-0671 or Becky Failor (925) 422-5316.

Sincerely,

  
Sr Dennis K. Fisher  
Associate Director  
Safety, Security and Environmental Protection

**Attachment:**

LLNL Response to NNSA/LSO Regarding DNFSB April 10, 2003 Letter and Associated Staff Issue Report

**Distribution:**

D. R. Beach, LLNL, L-668  
G. W. Campbell, LLNL, L-668  
S. L. Carr, LLNL, L-382  
A. A. DiSabatino, LLNL, L-378  
R. A. Failor, LLNL, L-383  
A. A. Garcia, LLNL, L-352  
S. S. Goodwin, LLNL, L-623  
W. M. Greenbaum, LLNL, L-338  
B. T. Goodwin, L-160  
S. P. Harris, LLNL, L-621  
P. E. Hill, LSO, L-293  
G. S. Holman, LLNL, L-352  
R. R. Kopenhaver, LSO, L-293  
S. LaSalle, LSO, L-293  
J. P. Mahler, LLNL, L-151  
G. L. Mara, LLNL, L-005  
R. W. Mortensen, LSO, L-293  
K. E. Perkins, LLNL, L-358  
J. A. Sefcik, LLNL, L-359  
M. K. Sheaffer, LLNL, L-347  
J. A. Sloan, LLNL, L-358  
C. L. Sohn, LSO, L-293  
S. E. Spagnolo, LSO, L-293  
D. E. Wechsler, LSO, L-293  
H. J. Wong, LLNL, L-375

## **LLNL Response to NNSA/LSO Regarding DNFSB April 10, 2003 Letter and associated Staff Issue Report**

### **Background**

LLNL is committed to continued improvement of its Authorization Basis (AB) process and documents. In 2000, LLNL performed a root cause assessment of various AB issues that occurred since 1997. Several corrective actions were identified. These actions consisted of: consolidation of nuclear facilities, creation of a nuclear facility AB support group, institutional concurrence on AB submittals, development of AB process training, development and updating of AB Sections in the ES&H Manual, appointment a nuclear facility safety subject matter expert, development of performance metrics, performance of a baseline review of AB documents, defining a graded approach methodology, strengthening quality assurance, enhancement of LLNL oversight, implementation of an issues and commitment tracking system, and development of DOE/LLNL joint efforts. Most actions have been completed and improvement is continuing in all these areas. The implementation of these efforts has improved the overall quality of LLNL AB documents and strengthened the interface between the AB documents and facility management. The AB documents LLNL submitted for compliance with 10CFR830, Subpart B reflect the current improvements in our process.

There are still areas for improvement in our AB system. Ongoing efforts will improve work scope, hazard, and control descriptions, making them more clear, consistent, and complete. We are focused also on development of a balanced set of controls based on the identified hazards.

LLNL has been successful in developing safety analyses with appropriate controls that maintain facility, worker, and public safety. LLNL is committed to continue on the AB document and AB process improvement path forward, to continue to refine its AB procedures and training, and develop meaningful program assessment tools. Senior LLNL management continues its support of these improvements in the AB process.

### **Facility Specific Issues: B332**

The Board's staff reviewed the current facility SAR and TSRs, dated August 10 2002, and noted a number of inadequacies and weaknesses. The issues raised in the DNFSB staff report had been previously identified through various self-assessments and reviews. LLNL is currently producing a 10CFR830 compliant DSA, which will address each of these.

#### **Waste Drum Fire**

**DNFSB Issue:** The hazard analysis in the current SAR for the unmitigated rupture and subsequent fire of a waste drum in the Building 332 Waste Accumulation Area (WAA) exceeds the off-site evaluation guideline by a factor of 20, and no safety class or safety significant controls have been identified for this scenario.

**LLNL Response:** The section of the B332 SAR that describes the "unmitigated" event makes reference to the fact that the unmitigated analysis is performed in an extremely conservative fashion. The Airborne Release Fraction (ARF) used in the assessment is the ARF for

unpacked material whereas the ARF that should have been used is the one for packaged material. The correct ARF is two orders of magnitude smaller than the one used and therefore, the off-site doses are much smaller than the evaluation guideline of 25 Rem. The Material at Risk (MAR) is listed at 60 alpha curies, but the facility usually packages such drums at or below 8 alpha curies since Radioactive and Hazardous Waste Management (RHWM) can only handle drums below 8 alpha curies. (There are exceptions to this but they will be addressed separately for WIPP shipments.) This reduces the off-site doses by nearly another order of magnitude. These issues are scheduled to be addressed in the 10CFR830-compliant DSA.

### Fire Suppression Water Supply

**DNFSB Issue:** The fire suppression system for Building 332 is functionally classified as safety class, but steps have not been taken to understand, justify, and ensure the reliability and availability of the water supply.

**LLNL Response:** The Building 332 fire detection and suppression system can receive water from three independent sources; Hetch-Hetchy, Zone 7, and Livermore City. These water lines enter the LLNL site at three different locations and enter the Superblock at two different locations. Pressure to the B332 firewater riser is continuously monitored to assure that an adequate head exists at all times. If the head does not exist, the facility enters a limiting condition of operation (LCO) and goes into standby or subsequent maintenance mode. This LCO is also required if the standby water tanks in the basement are not operable. The tanks in the basement are a backup system that is driven by LLNL site compressed air. If that fails, the Building 332 air compressor takes over. If it fails, the compressed nitrogen tanks in the basement are automatically engaged to drive the water. The only accident scenario that would be a concern in this case would be a beyond design basis earthquake that would simultaneously rupture all water supply systems and cause a fire in the facility involving plutonium. The response time of the fire department is under five minutes and this has been verified by a series of performance tests over the last several years. LLNL firefighters are trained to fight fires without water, particularly in the plutonium building where the use of water may be restricted in certain cases for criticality concerns. We will characterize the backup storage tanks in the basement as appropriate and we will elaborate on the accident scenarios and the "system boundaries" in the compliant DSA. We will also appropriately consider each system and classify it as required.

### Fire Analysis

**DNFSB Issue:** The fire analysis had not developed an appropriate unmitigated analysis for a postulated fire in a certain area of Building 332 where the material at risk could far exceed that assumed in the generic unmitigated room fire scenario.

**LLNL Response:** This issue is addressed by facility level controls on the fire loading in those rooms. Currently, the loading is insufficient to support anything exceeding a two-minute fire. Such a fire (making the extreme assumption that all the combustible material in the room is piled in one place) would not challenge any containers that exist in the facility. An "appropriate unmitigated analysis" will be included in the compliant DSA.

The staff issues related to the waste drum fire, the fire suppression water supply, and the fire analysis relate to the methodology used for the "unmitigated" analysis portion of the DSA. These analyses are used to identify the selection of safety class and safety significant controls. The mitigated analyses (with controls in place) for these accident scenarios show reductions in



the off-site doses from such events to be well below the evaluation guideline. Therefore, the concerns expressed with regards to the unmitigated analyses do not represent a significant safety concern since all of these scenarios are effectively mitigated. We are striving to improve the documentation related to these issues.

An additional implicit conservatism occurs in all our DSAs because our doses are calculated using the recommendations published by the International Commission on Radiological Protection (ICRP) in standard ICRP 30 as required by NNSA/LSO. This is an old document and has been updated by the Commission. The more recent documents show that we are overestimating the plutonium consequences by at least a factor of two relative to modern accepted values. Other DOE sites are using the new ICRP values.

### Historical Issues

**DNFSB Issue:** Many of the general concerns articulated by the DNFSB staff had been identified by NNSA as weak or problematic areas as far back as January 1995 but continue to exist in the 2002 SAR.

**LLNL Response:** LLNL originally planned to address these issues in the 2002 SAR, however, the schedule and requirements of 10CFR830 drove us to complete the 2002 SAR as quickly as possible so that we could turn our attention to work on the compliant DSA to meet the deadlines. LLNL has redone the hazard analysis and we have not identified any new or unusual hazards that had not already been considered and no accident sequences have been identified that change our understanding of the safety of the facility or are not bounded by the current safety analysis for current operations. As a result, no new compensatory measures are required.

### **Facility Specific Issues: B334**

**DNFSB Issue:** The contractor committed to formally preclude the use of thermal testing chambers while special nuclear material was present in the facility by instituting a TSR-controlled lockout-tagout administrative control in the forth coming DSA.

**LLNL Response:** The 10CFR830 compliant DSA submittal for B334, recently submitted to NNSA/LSO, describes in Section 2.5 that the thermal testing chambers are locked out and tagged when SNM is present in the Engineering Test Bay.

### **Facility Specific Issues: B231 Vault**

**DNFSB Issue:** In its April 2002 SER, NNSA had approved the facility's SAR with 10 conditions of approval, one of which directed the contractor to functionally classify the building's structure, vault ventilation system, and vault continuous air monitors as safety-significant SSCs. In May 2002, the facility submitted and subsequently withdrew a nominally rule-compliant DSA that did not address the important NNSA conditions of approval.

**LLNL Response:** NNSA/LSO's designation in the Safety Evaluation Report (SER) of safety-significant systems, structures, and components (SSCs) that were not identified as such in the B231V Safety Analysis Report resulted in some ambiguity. NNSA/LSO and LLNL communication shortcomings resulted in no defined functional criteria or performance requirements being established. Based on this experience, in the future if such issues are not

resolved prior to approval of the SER, LLNL will formally respond to NNSA/LSO for clarification.

In accordance with LLNL's Authorization Basis Corrective Action Plan to reduce the number of Directorates responsible for nuclear facilities, the inventory of B231V has now been reduced to a level substantially below the Hazard Category 3 threshold. A new authorization basis document has been developed and approved supporting a classification as a radiological facility, in accordance with LLNL's ES&H Manual Document 3.1, Safety Analysis Process. LLNL submitted, on May 14, 2003, a letter to NNSA/LSO declaring B231V as a radiological facility.

### **Inventory Control in Non-Nuclear Facilities**

**DNFSB Issue:** Control of inventories of hazardous materials in non-nuclear facilities require increased vigilance to ensure that consequences associated with an accident in one of these facilities would not exceed the expected severity and invalidate carefully developed emergency preparedness plans and procedures aimed at mitigating such adverse effects, including impacts on nuclear facilities.

**LLNL Response:** Background - Requirements for non-nuclear safety analysis at LLNL have been promulgated through DOE Order 5481.1B, March 19, 1987 (later cancelled by DOE N 251.4 September 29, 1995) and local field office supplemental management directive SAN MD 5481.1A, September 20, 1989. The purpose as stated in the SAN MD is to "assure that the risk to the health and safety of the public and employees are acceptably low and will adequately protect property and the environment." Through the Work Smart Standards (WSS) process NNSA/LSO and LLNL determined that these cancelled and outdated directives for non-nuclear safety analysis were insufficient and a local NNSA/LLNL consensus standard, UCRL-ID-150214, Rev. 1, February 2003, was developed and entered into Contract 48 replacing the SAN MD. This new non-nuclear safety analysis standard will significantly improve the analysis, control selection, change control and inter-facility communication requirements, in part by moving to a human health effects based process. However, the new standard has not yet been implemented. Therefore, all currently approved non-nuclear facility classification and safety basis documents are based upon the requirements from SAN MD 5481.1A and LLNL ES&H Manual Document 3.1.

LLNL has funded select improvements to the ChemTrack software related to the Authorization Basis (AB) enhancements for this fiscal year and will propose funding for related work in FY04 to support full implementation of the new non-nuclear safety analysis standard.

**Actions -** The LLNL proposes both a short-term verification of inventories of hazardous and radiological materials that if accidentally released could result in consequences more severe than currently included in LLNL emergency response plans and procedures, as well as long-term fixes to improve the tools and methods for control of such inventories as well as requirements for communication between facilities when there is the potential for inter-facility impacts.

The ChemTrack system provides an extremely useful function in meeting environmental regulatory reporting requirements. It currently tracks over 20,000 separately identified chemicals and 170,000 chemical containers on over 2,200 separate storage locations. As pointed out in the Staff Issue Report, the LLNL ChemTrack system was not designed as a

chemical inventory control and management system and there could be safety benefits to revising or replacing the system for this purpose. LLNL will undertake a root cause analysis of the applicable occurrence reports combined with the needs analysis for an inventory control and management system and current improvements to ChemTrack to determine if ChemTrack should be further upgraded or a new system put in place. This analysis should also identify if there are any other issues related to the use or management of an inventory control and management system. This analysis will be completed by September 30, 2003. Following the analysis corrective actions and/or system improvements will be identified and scheduled.

In addition, the new non-nuclear safety basis standard contains a requirement for notification when a hazard from one facility has the potential to seriously impact either the personnel or equipment of nearby facilities. This requirement will be implemented as each new safety basis document written under the new standard. The implementation schedule for the new standard is under discussion with NNSA/LSO.

In the interim, LLNL will take steps to increase vigilance to ensure the analyzed hazards are not exceeded. This will include the following actions:

- Identify from the safety basis documents the analyzed and authorized amount of hazardous materials for each of the seven non-nuclear facilities at S-200 for which Emergency Preparedness Hazard Assessments (EPHAs) and associated emergency plans and procedures for consequence mitigation have been prepared.
- Walk down the facilities and verify that the actual inventory of hazardous materials in these facilities are 1) within the limits (facility, room or other) established in the facility safety basis document and 2) bounded by the amount of material used as input to the source term for the EPHAs. The inventory verification will focus on radiological material and priority 1 and 2 chemicals, as defined in ChemTrack. If any hazards exceed the analyzed condition in the safety basis document the facility management will follow the requirements in ES&H Manual Document 3.1 for change control. Facility management also will notify the Hazard Control AB Section Leader who will assure the potential impact on nuclear facilities is analyzed and that all impacted facilities are notified. Where necessary, the facility management will file appropriate Occurrence Reports.
- Meetings of all facility managers will be held to emphasize the importance of inventory control and notification of nuclear facilities of changes that may have impacts to them. We will also solicit recommendations for improving inventory control processes and tools.

These compensatory steps, once initiated, are expected to be completed by September 30, 2003. However, changes to these steps may impact this schedule.

### **Integration of Hazard Assessments**

**DNFSB Issue:** A lack of coordination, communication and integration between those performing hazard assessments could result in undesirable consequences if a new hazard were introduced.

**LLNL Response:** The integration of LLNL hazard assessments has been a continuing process. We have briefed the DNFSB Staff twice on our progress. Early in the integration process existing interfaces were strengthened through a working group consisting of LLNL supervisors responsible for the various areas impacted in the integration process, Authorization Basis, Emergency Preparedness, National Environmental Policy Act, and Fire Hazard Analysis. This working group has been developing overall policy and guidance information for Lab-wide implementation. The strengthening of interfaces included using personnel in the Authorization Basis Section in the development of facility hazard assessments for both Authorization Basis and Emergency Preparedness purposes.

LLNL has implemented several improvements. Procedures have been developed that incorporate the integration of common activities. Strengthening communications is a vital part of the overall integration process. Steps that have been taken include communications of Lessons Learned of onsite hazards (use of cranes and propane hazards near nuclear facilities). LLNL efforts are continuing. Overall these efforts have resulted in an increased usage of common analyses and assessments leading to improved consistency and efficiency. LLNL recognizes that the focused efforts on 10CFR830, Subpart B compliance has delayed completing documentation and final development of the LLNL integration process. The process will be finalized and presentations, recommending implementation of the process, will be given to LLNL Senior Management by September 30, 2003.

In the area of external (off-site) hazard assessment specifically highlighted in the DNFSB report, LLNL recognizes that effective communications did not occur when there was a reduction of the potential off-site chlorine release accident. LLNL is aware that this facility (Zone 7 water treatment facility) also contains 500 gallons of anhydrous ammonia. LLNL has evaluated this condition and has determined that the family of hazards (chemical release, man-made external accident initiators) is bounded by the chlorine release accident and therefore LLNL nuclear facilities remain bounded by the previous evaluation. Of note is that LLNL is notified of off-site hazardous release events by local government and emergency response organizations through its mutual aid agreement with local emergency response organizations. Beyond this there has been ongoing discussions between LLNL and local response organizations to develop formalized guidance that includes off-site event reporting to LLNL, agreement on a common sector designation system outside LLNL and agreement on notification of significant hazards in nearby facilities which could impact LLNL. We will formalize these agreements by August 29, 2003.

Site wide, LLNL continues to conduct emergency response training and exercises to test and demonstrate the ability to appropriately respond to on-site hazardous material release events. These actions are similar to those LLNL would take should an off-site hazardous material release event impact LLNL. Further, LLNL has committed funds to develop a site-wide generic documented safety analysis that has the potential to deal with site-wide issues, such as off-site hazards and changes in those hazards, more effectively and efficiently. This effort has started and plans are to complete this effort in FY 2004. Our goal is to assure there is a formal mechanism for the communication and identification of off-site hazard and any significant changes and that LLNL can effectively deal with an event involving off-site or on-site hazardous material.

## **LSO Response Regarding DNFSB April 10, 2003 Letter and associated Staff Issue Report**

### **Background:**

The Defense Nuclear Facilities Safety Board (DNFSB) letter indicates that LSO had previously identified many of the weaknesses the DNFSB identified and had directed LLNL to correct them. In some cases, however, the DNFSB believed that lack of vigorous LSO oversight had allowed these deficiencies to exist for years. The DNFSB recommended that increased vigilance and assertiveness was warranted on the part of LSO to ensure that these weaknesses were corrected in a timely manner or that appropriate compensatory measures were established.

The Livermore Site Office (LSO) is committed to technically sound, safe, and cost-effective operations supported by management systems that ensure protection of the public, the worker and the environment. To achieve this goal, LSO maintains sufficient knowledge of LLNL program, project, operational and administrative performance to make informed decisions on resources and program/operational direction. LSO maintains this knowledge through its oversight program, which:

- Ensures the adequacy of contractor assurance system;
- Ensures contractor compliance with requirements; and
- Evaluates contractor performance.

To improve this oversight program, LSO will take the short term and long term actions below.

### **Actions:**

#### **Short Term Measures:**

- 1) LSO will review all current Safety Evaluation Reports (SER), identify all conditions of approvals in these SERs, and coordinate responsibilities (assigning appropriate Safety Analysts, Program Managers, Facility Representatives, or Subject Matter Experts) within LSO for determining the status of each of the conditions of approval. Those conditions of approval that are not being appropriately addressed or resolved will be formally identified to LLNL and actions taken to resolve. For new SERs, the Review Team Lead will brief Operations Teams (Safety Analysts, Program Managers, Facility Representatives, and Subject Matter Experts for specific facilities) on any conditions of approval and coordinate responsibility (assigning appropriate Safety Analysts, Program Managers,

Facility Representatives, or Subject Matter Experts) within LSO for tracking each condition of approval to completion.

Deliverables: SER Review and Reporting Status/Evaluation Results for  
Conditions of approval  
Completion Date: July 31, 2003

- 2) LSO Facility Representatives will review a sample of their currently assigned facilities to determine how administrative controls and limits (e.g., hazardous material limits for non-nuclear facilities) are established, what mechanisms are used to ensure the administrative controls and limits are met, and field check some of the actual administrative controls and limits within the facility. Those facilities that do not have adequate mechanisms to ensure administrative controls and limits are met or are failing to meet administrative controls or limits will be formally identified to LLNL and corrective actions tracked to completion. If a trend is identified specific to any one area of administrative controls or limits, the sampling for that area will be expanded as appropriate.

Deliverables: Reporting Status/Evaluation Results of Hazardous Material  
Inventory Control Methods  
Completion Date: July 31, 2003

- 3) LSO will verify that the B334 thermal chambers lock-out/tag-out status is consistent with Section 2.5 of the DSA text.

Deliverables: Report of verification activities;  
Completion Date: Completed

#### Long Term Measures:

- 4) The workload of the LSO Nuclear Safety Team (NST) continues to remain high. LSO has removed several time consuming responsibilities (lead for DNFSB interface and lead for the Federal Vital Safety System Engineering Program) from the NST which will allow the organization to focus more on their primary mission. NST has also requested additional safety analyst support from the Core Technical Group and the NNSA Service Center through Service Level Agreements to assist in managing the workload.

Deliverables: Reduce NST Collateral Assignments and Request Additional  
Safety Analyst Support.  
Completion Date: Action Complete

- 5) LSO has worked with LLNL to develop an improved review and approval process for LLNL Safety Basis documents. This process includes

implementing a 0-30-60-90 percent review process, clear communication of conditions of approval and revising the LSO review document. While the review and approval process provides for an "Acceptance Review" it is clear that LSO needs to clarify and provide LLNL with specific acceptance review criteria.

**Deliverables: Provide LLNL with specific Acceptance Review Criteria**  
**Completion Date: December 30, 2003**

- 6) LSO will review current Roles and Responsibilities associated with management systems that ensure protection of the public, the worker, and the environment. This review will be performed during the development of a revised LSO Functions, Responsibilities and Authorities Manual (FRAM) by the LSO Senior Safety Advisor.

**Deliverables: Revised FRAM**  
**Completion Date: December 30, 2003**

- 7) LSO is working with LLNL to determine a path forward for resolving the ongoing inventory control issues. The LSO Manager has met with Senior LLNL Management indicating agreement with the path forward by LLNL and noting that LSO will be involved with the root cause and needs analysis. The LSO Manager has also indicated expanded delegation of authority for non-nuclear facilities is contingent upon resolution of the inventory control issue.

**Deliverables: Participation on Root Cause and Needs Analysis**  
**Completion Date: September 30, 2003**

- 8) LSO will review and revise the existing issues management system to ensure that it provides for vigilance in follow-up of corrective actions to identified LLNL weaknesses.

**Deliverables: Revise Issues Management System as Necessary**  
**Completion Date: December 30, 2003**