Department of Energy
National Nuclear Security Administration
Washington, DC 20585

September 9, 2010

The Honorable Peter S. Winokur
Chairman
Defense Nuclear Facilities Safety Board
625 Indiana Avenue, N.W., Suite 700
Washington, D.C. 20004

Dear Mr. Chairman:

This is in response to your June 14, 2010 letter including a Staff Issues Report to address work planning and control deficiencies at the Lawrence Livermore National Laboratory (LLNL). The Lawrence Livermore National Security, LLC (LLNS), Livermore Site Office (LSO) and National Nuclear Security Administration (NNSA) have evaluated the process issues identified by your staff.

NNSA is committed to ensure an appropriate amount of rigor to the work planning processes and their implementation, given the complexity and hazards of the work involved. As a result, our respective organizations have completed some initial actions and established future actions to improve work planning and control in response to the Board's concerns at LLNL. Enclosures are provided to clearly communicate our actions and accountable organizations.

Specifically, LLNS key efforts towards improving work control will be through a more integrated and comprehensive work control process with additional work planner instructions and hazard control training that (1) clarifies expectations and requirements for work scope definition in work control documents, (2) clarifies expectations and requirements for when detailed work instructions are needed to perform laboratory activities, (3) integrates task-based hazard and control tables in Operational Safety Plans using a prioritized schedule, and (4) revises the Superblock Work Control Manual accordingly. See Enclosure 1 for more detail.

In addition, LSO has specifically directed LLNS to take immediate actions to (1) ensure currently performed work using current LLNS work control processes have adequate work scope definitions and controls, (2) institute an interim work control review and approval process until LLNS work control processes have been appropriately revised and implemented, and (3) incorporate lessons learned from an analysis of recent site events. See Enclosure 2 for more detail.

LSO improvements will focus on implementing an integrated oversight approach that involves an overall technical lead with day-to-day support at the activity level from facility representative, safety system oversight staff, and subject matter experts. LSO will institutionalize the criteria, review, and approach documents (CRADS) found in the NNSA guidance document on activity level work planning and control, and provide additional staff training on oversight of work planning and control. See Enclosure 3 for more detail.

As discussed in a March 29, 2010, letter to you on activity-level work planning and work control at Los Alamos National Laboratory, the Office of Defense Programs (NA-10) remains committed to an established partnership with the Energy Facilities Contractors Group and the Office of Environmental Management to pursue long-term improvements in work planning and work control within the National Security Enterprise.

If you have any questions concerning this matter, please contact me or have your staff contact Mr. James McConnell at (202) 586-4379. I look forward to open and frank discussions on ways NNSA can improve the safety of its operations through proper work planning and control.

Sincerely,

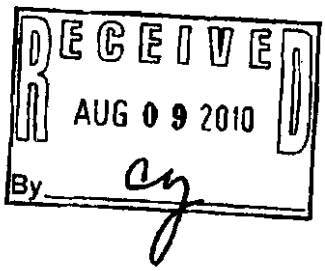
DONALD L. COOK
Deputy Administrator
for Defense Programs

Enclosures

cc w/enclosures:
T. D'Agostino, NA-1
M. Campagnone, HS-1.1
A. Williams, LSO
G. Miller, LLNL

Lawrence Livermore National Laboratory

August 9, 2010
NMTP10-069



Ms. Alice C. Williams
Manager, Livermore Site Office
National Nuclear Security Administration
U.S. Department of Energy
P.O. Box 808, L-293
Livermore, CA 94551

Subject: Lawrence Livermore National Laboratory Response to issues identified in the Defense Nuclear Facilities Safety Board Letter on Activity Level Work Planning at LLNL as directed by LSO

References:
1) A. C. Williams letter to B. Goodwin, *Response to Defense Nuclear Facilities Safety Board Letter on Activity-Level Planning at the Lawrence Livermore National Laboratory*, COR-NSI-6/18/2010-262085, dated June 30, 2010
2) COR-MO-6/14/2010-261119 (P. Winokur/T. D'Agostino), Activity Level Work Planning, Lawrence Livermore National Laboratory, dated June 14, 2010
3) LLNL Institution-Wide Work Control Process Requirements Document, dated July 30, 2008

Dear Ms. Williams:

The above referenced letter, *Response to Defense Nuclear Facilities Safety Board Letter on Activity-Level Planning at the Lawrence Livermore National Laboratory*, COR-NSI-6/18/2010-262085, dated June 30, 2010 (Reference 1) transmitted concerns identified by the Defense Nuclear Facilities Safety Board letter and report (Reference 2) regarding activity-level work planning by the Nuclear Materials Technology Program (NMTP) at Lawrence Livermore National Laboratory (LLNL). Reference 1 directed LLNL to conduct a gap analysis between Reference 3 of this letter and the NMTP work planning and control process. In addition, LLNL was directed to provide the Livermore Site Office (LSO) a response to concerns quoted in Reference 1 and specific issues from the DNFSB staff report listed in a table entitled *Table of DNFSB Observations of Activity-Level Work Planning at LLNL*.

A gap analysis was conducted as directed and a summary is provided in the attachment to this letter. Also included are LLNL's responses to the concerns quoted in Reference 1 along with the

specific issues from the DNFSB staff report. Additionally, the attachment includes a plan and schedule for actions pertaining to each issue.

Should you or your staff have any questions or concerns regarding the issues addressed in this letter, please contact Roger Rocha at (925) 423-1743.

Sincerely,

Bruce T. Goodwin
Principal Associate Director
Weapons and Complex Integration

Attachment:
NMTP response to NNSA letter (COR-NSI-6/18/2010-262085)

cc:
J. Plaue, DNFSB
J. Anson
J. Bowers
M. Bronson
S. Browning
K. Cadwell
W. Egbert
K. Foote
H. Holloway
C. Holm
L. Lisle
C. Ma
D. Mailhot
M. Martinez
M. Merritt
M. Mintz
K. Monica
C. Moser
B. Perkins
D. Pinkston
R. Rocha
P. Schafer
J. Sloan
D. Squire
R. Thomas
A. Warner
R. Warner
NMTP AB File

NMTP response to NNSA letter (COR-NSI-6/18/2010-262085)

Concerns Quoted in Reference 1		
NNSA Identified Issue	**NMTP Assessment**	**NMTP Plan and Schedule**
1. "That the activity-level work planning by the NMTP at LLNL is not being used effectively to ensure worker safety. Work packages lack specificity and fail to link work tasks to specific hazards and necessary controls. These deficiencies result in vulnerabilities in ensuring worker safety and potential vulnerabilities in adequately complying with the safety basis at LLNL defense nuclear facilities"	The activities conducted under a full NMTP work permit identify each task and link associated hazards and controls. However, some activities are authorized by OSPs which do not currently have each task and associated hazards and controls specifically linked.	Task-based hazard and control tables are being developed for each of the OSPs. This table will tie specific controls for each hazard in specific tasks. This development effort is supported by the RIs, the ES&H Team and NMTP Management. OSPs will be prioritized for update by programs and facility management on the basis of hazards and usage. A schedule for the transition will be developed on the basis of the OSP priority. December 2011 is the projected date for completion of the task table conversion in all the OSPs.
2. "Work packages reviewed by the board's staff did not reflect the guidance in the document, particularly in the areas of defining the scope of work and performing hazard analysis."	Consistent with the *LLNL Institution-Wide Work Control Process Requirements Document*, dated July 30, 2008, a graded approach is used in NMTP to break down the scope of work activities to facilitate an analysis of potential safety issues. Task level work scope descriptions are less detailed than a procedure. However, minimum standards to the level of detail required should be applied to the work packages and specified in the *Superblock Work Control Manual.* The activities conducted under a full NMTP work permit analyze the hazards and controls consistent with the task - based approach in the *LLNL Institution-Wide Work Control Process Requirements Document,* however, in performing hazard analysis in OSPs, hazards and controls are not currently directly linked with specific tasks.	NMTP will provide instructions to work planners in the *Superblock Work Control Manual* consistent with the *LLNL Institution-Wide Work Control Process Requirements Document* and provide the minimim requirements of defining the scope of work in work packages. Approval of the revised SBK Work Control Manual is planned by December 31, 2010. Task-based hazard and control tables are being developed for each of the OSPs. This table will tie specific controls for each hazard in specific tasks. This development effort is supported by the RIs, the ES&H Team and NMTP Management. OSPs will be prioritized for update by programs and facility management on the basis of hazards and usage. A schedule for the transition will be developed on the basis of the OSP priority. December 2011 is the projected date for completion of the task table conversion in all the OSPs.

NMTP response to NNSA letter (COR-NSI-6/18/2010-262085)

Table of Issues Concerning Activity-Level Work Planning at LLNL		
NNSA Identified Issue	**NMTP Assessment**	**NMTP Plan and Schedule**
1 – "While the *Superblock Work Control Manual* states that OSPs are not procedures, it does not specify, or provide criteria with which to determine, when a work package requires a detailed work instruction or procedure. As a result, NMTP uses OSPs in lieu of written instructions even when the hazards are significant enough to warrant work instructions or procedures. These weaknesses translate into work packages with inadequate written direction to ensure the safe performance of work" (DNFSB Staff Issue Report, dated April 27, 2010, pages 1-2).	The need for detailed work instructions or procedures are determined by the RI, ES&H Team and NMTP management per the guidance given in the ES&H Manual 2.2 section 2.3.1.2, the NMTP Conduct of Operations Manual sections 16.1 and 16.7 but are not explicitly specified in the Superblock (SBK) Work Control Manual. OSPs may reference procedures or contain detailed work instructions as deemed necessary by the criteria listed above. The Change Request, Work Permit, and OSP review processes are mechanisms to evaluate the need for procedures or detailed work instructions. While proceduralizing more actions will reduce reliance on expert-based performance, NMTP believes, and experience has proven, that OSPs are adequate to safely support current operations. Nevertheless, NMTP embraces continuous improvement.	NMTP will reflect the listed instructions and guidance from the ES&H Manual and the NMTP Conduct of Operations Manual in the SBK Work Control Manual pertaining to the need for a procedure and/or work instructions. NMTP will also incorporate into the Change Request, Work Permit, and OSP review processes an explicit evaluation of the need for procedures or detailed work instructions. Approval of the revised SBK Work Control Manual is planned by December 31, 2010.
2 – A Superblock OSP "contained only a broad description of what work could be performed at each workstation, did not include or reference any work instructions/procedures, and did not tie specific hazard controls to specific tasks. It did not specify which chemicals were to be used for a given wet chemistry activity or restrict any combination of these chemicals from use in any workstation" (DNFSB Staff Issue Report, dated April 27, 2010 page 2).	The NMTP-PMP-0102 OSP Development and Implementation Guide list an example of a Task Hazard Analysis Table that is being implemented in the OSPs. Operational tasks should be identified with associated hazards and controls. Chemicals used for an operational task should be identified for associated tasks and their chemical compatibility be captured within the OSP. NMTP considers the OSPs adequate for safe operations, but recognizes the opportunity for improvement.	Task-based hazard and control tables are being developed for each of the OSPs. This table will tie specific controls for each hazard in specific tasks. This development effort is supported by the RIs, the ES&H Team and NMTP Management. The SBK Work Control Manual, expected to be approved by December 31, 2010, will reflect the need to have the task table implemented in the OSP development. Chemicals will be identified for operational tasks and their chemical compatibility defined in the OSP.
3 – "NMTP recently upgraded the OSP process to include a task table that links hazards to general tasks. While this table represents an improvement, it is only being implemented when revising existing or developing new OSPs, and there is still no clear process for analyzing and controlling hazards specific to an individual task. NMTP intends to transition the OSPs to the institutional task-based Integration Work Sheet; however, a precise plan and schedule for this transition has not been formalized" (DNFSB Staff Issue Report, dated April 27, 2010 page 3).	NMTP has 85 OSPs. Since January 2010 NMTP has converted 20 OSPs to contain the task table. The remaining 65 OSPs are projected to take another 18 months to convert to the task table. NMTP work control is positioned to allow the use of Integration Work Sheet (IWS) for the various NMTP facilities per the Facility Manager's discretion.	OSPs will be prioritized for update by programs and facility management on the basis of hazards and usage. A schedule for the transition will be developed on the basis of the OSP priority. December 2011 is the projected date for completion of the task table conversion on the OSPs.

NMTP response to NNSA letter (COR-NSI-6/18/2010-262085)

4 – "The Board's staff found that the *LLNL Institution-Wide Work Control Process Requirements Document* contained many of the requirements in the January 2006 NNSA document. The staff found that the *Superblock Work Control Manual* and the *OSP Development and Implementation Procedure* do not flow down from this document and in some important respects conflict directly with its requirements (DNFSB Staff Issue Report, dated April 27, 2010	A gap analysis was performed between the *LLNL Institution-Wide Work Control Process Requirements* and the *Superblock Work Control Manual (SBK WCM)* dated June 2010. The *OSP Development Procedure* was considered as support to the SBK WCM and not as a self contained work control document. See the following summary of the gap analysis below.	The identified gaps will be addressed in the revised SBK Work Control Manual that will include Superblock and Radiological and Hazardous Waste Management (RHWM) facilities. The approval of the revised SBK Work Control Manual is planned for December 31, 2010.

Summary of the Gap Analysis Between LLNL Institute-Wide Work Control Process Requirements and NMTP Work Control Requirements

Institute-Wide Requirement	Gap Analysis	Gap Closure Plan
1.0 Purpose and Scope	Although NMTP is in general compliance with the LLNL institutional Work Control process, some enhancements have been identified and are under development.	See details in sections below.
2.0 Definitions	Needs enhancements of some definitions including a discussion on Authorization, Approval, and Release of work.	Incorporate discussion into the SBK Work Control Manual scheduled for approval by 12/31/10.
3.1 Define the Scope of Work	All elements of this section are in compliance with the exception of **3.1.7**. **3.1.7** *Any applicable prior work history information, including feedback and lessons learned information from previous or similar work is used during work planning.*	Modifications to the new electronic permit process will allow a database search for feedback and lessons learned information from previous or similar work during work planning. The RI will be expected to review the database during work planning. The database is scheduled for completion by 3/31/11.

NMTP response to NNSA letter (COR-NSI-6/18/2010-262085)

3.2 Identify and Analyze Hazards	All elements of this section are in compliance with the exception of **3.2.2** and **3.2.5.** **3.2.2** *Personnel involved in work planning activities are trained in ISM and the work planning and control process, including the systematic identification and analysis of hazards, and understand how their roles and responsibilities contribute to ensuring the safe and reliable accomplishment of work.* Although all employees are required to take applicable institutional work control training, additional training on hazards analysis has been offered intermittently. Many of the individuals responsible for work planning have had HS8011 or equivalent which addresses hazards analysis but not all work planners have had the opportunity to take the training due to the intermittent scheduling. **3.2.5** *Hazards associated with work activity tasks and the work area/environment are analyzed as appropriate to the risk and complexity of the work. Hazards associated with low hazard tasks and work areas may be addressed at the work activity or categorization level and not each time performed.* In performing hazard analysis in OSPs, hazards and controls are currently not directly linked with specific tasks.	HS8011 - Hazard Analysis Techniques (This class has been updated and is now being offered starting July 29, 2010). Task-based hazard and control tables are being developed for each of the OSPs. This table will tie specific controls for each hazard in specific tasks. This development effort is supported by the RIs, the ES&H Team and NMTP Management. OSPs will be prioritized for update by programs and facility management on the basis of hazards and usage. A schedule for the transition will be developed on the basis of the OSP priority. December 2011 is the projected date for completion of the task table conversion in all the OSPs.
3.3 Select and Implement Controls	All elements in this section are in compliance with the exception of **3.3.4.** **3.3.4** *The hazards and the associated controls are clearly identified in the work package.* Adequate controls are selected through the work permit process. In addition, controls are identified in OSPs however, they are not consistently and clearly linked to each task.	Task-based hazard and control tables are being developed for each of the OSPs. This table will tie specific controls for each hazard in specific tasks. This development effort is supported by the RIs, the ES&H Team and NMTP Management. OSPs will be prioritized for update by programs and facility management on the basis of hazards and usage. A schedule for the transition will be developed on the basis of the OSP priority. December 2011 is the projected date for completion of the task table conversion in all the OSPs.
3.4 Perform Work Safely Within Controls	None.	NA

NMTP response to NNSA letter (COR-NSI-6/18/2010-262085)

3.5 Feedback and Improvement	All elements of this section are in compliance with the exception of **3.5.2.** **3.5.2** *Feedback and lessons learned information is adequately documented (recorded in logs, databases, etc.), and forwarded to the appropriate individuals/ organizations for analysis and disposition.* Although feedback and lessons learned data are adequately documented, improvement could be made on dissemination of the information for work planning.	Modifications to the new electronic permit process will allow a database search for feedback and lessons learned information from previous or similar work during work planning. The database is scheduled for completion by 3/31/11.
3.6 Training Qualification	All element of this section are in compliance however there is a statement as follows: *Individuals who plan and perform work shall be appropriately trained and qualified.* Although all employees are required to take applicable institutional work control training, additional training on hazards analysis has been offered intermittently. Many of the individuals responsible for work planning have had HS8011 or equivalent which addresses hazards analysis but not all work planners have had the opportunity to take the training due to the intermittent scheduling.	HS8011 - Hazard Analysis Techniques (This class has been updated and is now being offered starting July 29, 2010).
3.7 Scheduling	None.	NA
4.0 Graded Requirements	None.	NA
5.0 Effectiveness of Work Control Processes	None.	NA

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COR-NSI-8/9/2010-273543

Mr. Thomas F. Gioconda
Deputy Director
Lawrence Livermore National Security, LLC
Lawrence Livermore National Laboratory
7000 East Avenue, L-001
Livermore, CA 94551

Subject: Recent Operational Events and Work Control Implications

Reference: NMTP10-069 (B. Goodwin/A. Williams), *Lawrence Livermore National Laboratory Response to issues identified in the Defense Nuclear Facilities Safety Board Letter on Activity Level Work Planning at LLNL, as directed by LSO*, dated August 9, 2010

Dear Mr. Gioconda:

Over the past eight months, the Lawrence Livermore National Laboratory (LLNL) has experienced a number of operational occurrences or events where the overall performance of the individual work activities had either near miss or other associated safety precursor type implications. These events question the overall effectiveness of recent work control improvements and or the activity-level implementation of certain key process elements. Some of the key activities or events of concern include the following:

- Maintenance of the Building (B) 235 Dynamic Transmission Electron Microscope in violation of safety Radiation Generating Device (RGD) controls – August 2010
- Maintenance work on a B391 energized 480 volt electrical panel with improper application of the LLNL lock-out/tag-out controls - July 2010
- Processing of a Uranium-Lithium item in B332 resulting in an unexpected exothermic reaction and need for improved material characterization – July 2010
- A B332 continuous air monitor alarm as a result of opening a plutonium item with ten year old packaging outside of a glovebox – May 2010
- Machining activities in B321A involving a part containing Beryllium material – February 2010
- B391 electrical work resulting in the inadvertent cutting of energized 208 VAC 3 Phase electrical lines – February 2010
- Processing of an unapproved part in B851 – January 2010

In addition, the Livermore Site Office (LSO) has received the reference responding to the Defense Nuclear Facilities Safety Board Letter on Activity Level Work Planning at LLNL, which includes a gap analysis between the *LLNL Institution-Wide Work Control Process Requirements Document* and the Nuclear Materials Technology Program (NMTP) Work Planning and Control Processes. LSO is concerned that NMTP's plan to close these gaps will not be complete until December 2011, and did not include a compensatory measure to ensure the scope and hazards for current operations being performed under Operational Safety Plans (OSPs) are described in sufficient detail and that adequate controls are in place. Also, the Plan did not include sufficient intermediate milestones for LSO to track NMTPs progress on completing the plan.

As a result of the above, LSO directs the following:

1. Provide LSO an analysis of the events and any performance trends they represent within 30 days of receipt of this letter. Your analysis should not be limited to the above noted events but include other events and occurrences the Laboratory deems appropriate to evaluate the quality of work control processes and their implementation. The analysis should focus on the following:

    - The overall collective significance of the events,
    - Underlying common causes or contributing factors,
    - Potential work control process and/or implementation weaknesses,
    - Human Performance Improvement and Safety-Culture factors, and
    - Any applicable senior laboratory management initiatives to improve performance.

2. Take immediate actions to ensure currently approved work at LLNL, including NMTP nuclear facilities, is being performed under OSPs, Integrated Work Sheets, work permits and other work control documents that include adequate work scope descriptions and controls to ensure protection of the public, worker and environment.

3. Within 30 days, develop an intermediate work planning review and approval process for NMTP work activities as a compensatory measure until the referenced Plan is complete.

4. Within 30 days of this letter, please provide LSO information on NMTP actions and progress to ensure current operations are described in sufficient detail to allow the current NMTP work planning process to identify associated hazards and implement controls.

5. Schedule monthly status meetings with LSO to present the development of work control processes and procedures that will be incorporated into the revised Superblock Work Control Manual and the status of revising the population of OSPs. Feedback acquired from the Item 1 Analysis should be integrated into the above actions and LSO status meetings.

My staff is aware of a recent Lawrence Livermore National Security, LLC, and Contractor Assurance Office initiative to evaluate events involving control of hazardous energy sources. LSO believes it would be appropriate to integrate this review within the context of the above requested analysis. If you should have any questions, please contact Peter Rodrik at (925) 424-5406.

Sincerely,

Alice C. Williams
Manager

cc:
J. Plaue, DNFSB
S. Wuthrich
S. Johnson
D. Boyd
M. Martinez

Response to Defense Nuclear Facilities Safety Board Issues Concerning Livermore Site Office Oversight of Activity – Level Work Planning at Lawrence Livermore National Laboratory

August 2010

Background

The Defense Nuclear Facilities Safety Board (DNFSB) sent the National Nuclear Security Administration (NNSA) a letter (Reference 1) on June 14, 2010 based on a DNFSB staff trip report on activity-level work planning and control at the Lawrence Livermore National Laboratory (LLNL) by the Nuclear Material Technology Program (NMTP). The DNFSB staff evaluated the NMTP work planning and control processes against the NNSA document, *Activity Level Work Planning and Control Processes: Attributes, Best Practices, and Guidance for Effective Incorporation of Integrated Safety Management and Quality Assurance*, dated January 2006 (Reference 2). The DNFSB staff review also included oversight of activity-level work planning and control by the Livermore Site Office (LSO). DNFSB observations and issues concerning LSO include the following:

1. LSO needs to require NMTP to incorporate Integrated Safety Management (ISM) into the work planning and control process by relying on a standards-based approach as outlined in the *LLNL Institution-Wide Work Control Process Requirements Document* (Reference 3) and Reference 2; and to verify implementation of this change.
2. LSO has not institutionalized the Criteria and Review Approach Documents (CRADs) prescribed by Reference 2 and does not conduct focused reviews of activity-level work planning utilizing subject matter experts. As a result LSO oversight has not been effective in identifying the inadequacies in NMTP's activity-level work planning.
    - LSO oversight of work planning and control is performed primarily by facility representatives and would benefit greatly if other subject matter experts became directly involved in oversight of work planning, including more frequent observations in the field.
    - LSO oversight would additionally benefit from adopting Reference 2 and training personnel in how to evaluate work planning and control effectively.
    - LSO initiatives include a stated intent to institutionalize Reference 2, revise the tracking system for issues related to work control by ISM core functions, use the prescribed CRADs to assess work planning and control, and assignment of responsibility for oversight of work planning and control to LSO's Senior Technical Safety Advisor.

Contract Transition and ISMS Verification

In October 2007, Lawrence Livermore National Security, LLC (LLNS) became the operating contractor for LLNL. As part of contract transition, both LSO and LLNS acknowledged the need to improve the Laboratory's ISM System (ISMS) including the site's institutional work control processes. This decision was based largely on past performance deficiencies associated with specific site occurrences and events that occurred prior to and shortly following contract transition. LLNS, as a result, developed and proposed to LSO a more comprehensive approach to improve the site's ISMS and work control processes. LLNL and LSO ISMS recertification was completed in April 2010. The LLNL and LSO ISMS Phase I/II reviews, which included senior Department of Energy (DOE) HSS and NNSA Chief, Defense Nuclear Safety (CDNS) team leaders and staff, were completed in March 2010. The Phase I/II teams reviewed institutional work planning at LLNL, including actions taken by LLNL to improve work planning and control at Radioactive and Hazardous Waste Management and activities involving Beryllium, but did not specifically include the Operational Safety Plans used by NMTP. This was based on the need to address broader institutional concerns as well as poorer performing areas at LLNL like those noted above. The reviews concluded that improvements had been made in LLNL institutional work control processes.

LSO Oversight of Work Planning and Control

LLNL issued the; *LLNL Institution-Wide Work Control Process Requirements Document* on July 30, 2008 (Reference 3). After reviewing this document and comparing it to Reference 2, LSO concluded it can provide a satisfactory base for an activity- level work planning and control process, which invokes the attributes of Reference 2. LSO directed LLNL in Reference 4 to perform a gap analysis between Reference 3 and the NMTP work control process in addition to responding to specific issues identified by DNFSB in Reference 1. LLNL has committed to closing the identified gaps by December 2011. LSO oversight will track the closure of the gaps by LLNL and review their effectiveness.

LSO is in the process of developing and implementing an improved oversight approach for work planning and control. This approach will include integrating Reference 2 into the LSO oversight regime. This will focus on incorporating Appendix B of Reference 2 into LSO assessments of LLNL. In addition, the criteria and guidelines of Appendix B will also be key elements of LSO's annual ISM effectiveness review. LSO will ensure that personnel are trained on these changes. LSO plans to complete this process by January 31, 2011 including the details listed below.

1. Issue a LSO Integrated Management Program Manual, which will establish the roles and responsibilities of LSO staff, including the Senior Technical Safety Advisor, with respect to oversight of activity-level work planning and control at LLNL.

functions as MAP elements in order to facilitate documentation of work control oversight activities and results, and data retrieval, and trend the results of analyses.
4. Revise References 5 and 7 to ensure LSO oversight specifically includes the, *NNSA Activity Level Work Planning and Control Process* Appendix B criteria and guidelines.
5. Revise LSO oversight procedures including References 6 and 8 to ensure that oversight activities by LSO staff include assessments of LLNL work planning and control.
6. Train LSO staff on the LLNL work control processes and how to evaluate work planning and control effectively.
7. LSO will complete an ISM effectiveness review and make a declaration of the status of ISM at LSO and LLNL in Fiscal Year 2011. This review will include activity-level work control processes at LLNL nuclear facilities and be performed in accordance with DOE Manual 450.4-1 and Reference 5.
8. The above actions will be entered into ePEGASUS and tacked as required by Reference 9.

References

1. DNFSB letter and report, *Activity Level Work Planning, Lawrence Livermore National Laboratory*, dated June 14, 2010
2. *Activity Level Work Planning and Control Processes: Attributes, Best Practices, and Guidance for Effective Incorporation of Integrated Safety Management and Quality Assurance*, dated January 2006
3. *LLNL Institution-Wide Work Control Process Requirements Document*, dated July 30, 2008
4. LSO to LLNL letter, *Response to Defense Nuclear Facilities Safety Board Letter on Activity-Level Planning at the Lawrence Livermore National Laboratory*, dated June 30, 2010
5. LSO Work Instruction: WI 450.4.1 *Annual ISM Effectiveness Review and Declaration*
6. LSO Work Instruction: WI 226.1.1, *Writing and Managing Contractor Assessments, Issues, and Corrective Action Plans in Pegasus*
7. LSO Work Instruction: WI 226.1.2, *Oversight Planning*
8. LSO Work Instruction: WI 226.1.3, *Performing Oversight*
9. LSO Work Instruction: WI 414.9.1, *Writing and Managing Assessments of the Livermore Site Office, Issues, and Corrective Action Plans in Pegasus*