Department of Energy
National Nuclear Security Administration
Washington, DC 20585

March 25, 2008

OFFICE OF THE ADMINISTRATOR

The Honorable A. J. Eggenberger
Chairman
Defense Nuclear Facilities Safety Board
625 Indiana Avenue, NW, Suite 700
Washington, D.C. 20004-2901

Dear Mr. Chairman:

On December 21, 2007, I requested a 90-day extension to respond to your October 23, 2007, letter that included a 60-day reporting requirement to provide a safety rationale for continuing the operation of the Chemistry and Metallurgy Research (CMR) Building at the Los Alamos National Laboratory (LANL), as well as a detailed schedule of the National Nuclear Security Administration (NNSA) actions to assure safe operation of this facility. This letter provides a summary of actions to date and planned actions that support the safe operation of the CMR Building. The enclosure to this letter provides further details on the completed and planned actions.

The safety rationale for continued operation of the CMR Building will be included in the new CMR Documented Safety Analysis (DSA), currently planned to be submitted to the NNSA Los Alamos Site Office (LASO) for approval in February 2009. In the interim, LASO has completed an assessment of the location, quantity, and condition of all special nuclear material (SNM) within the CMR Building with the objective of validating the reduced SNM levels in the facility. LASO formally requested LANL to address the recommendations from the assessment report. Also, LANL submitted revised Interim Technical Safety Requirements (ITSRs) for the CMR Building in February 2008. Following LASO approval and implementation by LANL, LASO will validate the implementation of these ITSRs. LANL has also started several initiatives reviewing the condition of CMR safety systems that will provide input to the CMR Life Extension Program.

With regard to the schedule for NNSA actions to assure safe operation, LASO is planning on approval of the ITSRs by April 2008. As stated previously, the CMR DSA will be submitted to LASO in February 2009. LANL will conduct safety system assessments for safety class systems identified in the ITSRs in 2008 with completion in 2010 of the assessments for all safety systems identified in the CMR DSA. LASO is developing an

oversight plan for CMR that will include oversight of ITSR implementation and LANL safety system assessments, as well as LASO safety system reviews. This LASO CMR oversight plan will be issued shortly after the development by LANL of the validation schedule for the ITSRs. As described in my March 11, 2008, letter to you about the safety of nuclear operations at LANL, NNSA Headquarters will conduct an on-site assessment of LANL safety systems as part of its Fiscal Year 2009 oversight plan, including a sample of safety systems at CMR.

In May 2008, LASO and LANL will hold an Integrated Nuclear Planning (INP) Workshop to discuss programmatic needs, associated material at risk, and operations and alternative analyses for the CMR Building. Information from ongoing LANL activities and assessments and the results of the INP Workshop will enable NNSA to better address the concerns of the Defense Nuclear Facilities Safety Board (DNFSB). NNSA will provide to the DNFSB by September 1, 2008, a long-term schedule of actions related to the continued operation of the CMR Building, including submittal of the DSA for the CMR Building, which will complete NNSA's response to the DNFSB on this subject.

As requested in your letter, a briefing on the issues associated with the continued operation of the CMR Building has been scheduled for April 10, 2008. If you have any questions, please contact me or Michael Thompson at (202) 586-6058.

Sincerely,

Thomas P. D'Agostino
Administrator

Enclosure

cc: M. Whitaker, HS-1.1

SEPARATION

PAGE

UNITED STATES GOVERNMENT DEPARTMENT OF ENERGY

memorandum

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

DATE: MAR 11 2008
REPLY TO ATTN OF: 4700 NSM:8JG-003
SUBJECT: Updated Response to Defense Nuclear Facilities Safety Board (DNFSB) Letter Dated October 23, 2007 - Continued Operation of the Chemistry and Metallurgy Research (CMR) Building

TO: Robert L. Smolen, Deputy Administrator for Defense Programs, NA-10, HQ/FORS

This memorandum transmits updated information from the Los Alamos Site Office (LASO) and Los Alamos National Laboratory (LANL) regarding continued operation of the CMR Building beyond 2010. Previous input was provided by LASO on December 21, 2007, at which time the Administrator requested a 90-day extension for submittal of the National Nuclear Security Administration (NNSA) response to the original October 23, 2007 DNSFB letter.

On January 22-23, 2008, meetings were held with NNSA Headquarters elements to discuss a series of related topics including: 1) understanding current CMR facility operational risks; 2) potential future missions and operations in CMR Wing 9; 3) CMR Replacement (CMRR) project activities and funding requirements; and 4) identification of actions to continue further refinement of response to the DNSFB. In addition to these topics, LASO and LANL outlined a planned Integrated Nuclear Planning (INP) workshop currently scheduled for May 21-22, 2008, to facilitate discussions of programmatic need, associated Material-at-Risk (MAR) and operational risks, and alternative analyses for the CMR Facility. Completion of on-going activities and the May INP workshop will enable NNSA/LANL decisions regarding programmatic baseline capabilities, operational locations and durations, risk mitigation and acceptance, and required resources that will ultimately be needed to fully address DNFSB concerns. This memorandum provides interim status updates on ongoing actions to meet the 90-day schedule extension.

The January 2008 meetings significantly contributed to development of consensus understanding of issues with continuation of CMR Operations beyond 2010. As a result, LASO believes a better understanding exists regarding the need for some level of continued operations within CMR beyond 2010 and an operational strategy for the facility that allows for mitigation of risk while maintaining mission critical capabilities. Near-term objectives identified included enhancing federal understanding of the MAR and associated operational risk for the facility, and validating future programmatic requirements for CMR. Follow-up actions committed to by LASO with current updated status are provided as follows:

1. LASO Scrub of MAR within CMR Facility:

At the direction of the LASO Technical Deputy Manager, a Federal team completed an assessment of the location, amount, and condition of all special nuclear material (SNM) that is stored, housed, or processed within the CMR Building. The objective of this effort was validation of LANL claims of reduced MAR levels in the CMR facility. Field reviews were completed February 4-8, 2008 and a final report and specific guidance to LANL issued by LASO on March 5, 2008. The report is labeled as Unclassified Controlled Nuclear Information (UCNI) and has been transmitted to Marty Schoenbauer of your staff separately from this transmittal.

Due to limited time allowed for the review, a detailed review of MAR against accountability listings was not feasible; however spot checks were performed. All areas of CMR were observed for the presence of SNM. The report includes twelve recommendations and identifies four noteworthy practices. Significant progress in risk reduction has been made by clearing out materials from wings 2, 3, and 4 in the last year. The team identified concerns with a lack of a single MAR inventory system for all CMR accountable and sub-accountable material. Disposition of legacy materials contained in the facility is also a key recommendation to aid in further MAR reductions. While detailed review of the 9Kg MAR limit was not possible, review of MAR variation driven by current sampling analysis demands and the need for maintaining an operating margin provide reasonable demonstration that the 9 Kg limit mission need remains valid. LASO formally directed LANL on March 7, 2008 to address results of this review and to ensure further improvements are implemented.

As part of continuous actions to remove MAR and reduce operational risk, LASO is seeking NA-10 support is addressing impacts of a $1.3M reduction in FY08 capital equipment funding at LANL. This funding is needed for relocating Pu238 analytical operations out of CMR to PF-4 prior to 2010. The recent funding reduction by the Office of Nuclear Energy (NE-34) precluded anticipated capital funding needed for equipment installation at PF-4. LASO and LANL will be seeking assistance from NA-10 in addressing these funding impacts during the FY10-14 Programming Session to support the endstate objective of removing Pu238 materials from CMR.

2. CMR Documented Safety Analysis (DSA) Development:

On January 29, 2008, LASO approved the LANL Safety Basis Strategy for a compliant CMR DSA reflecting a February 2009 completion date. The current schedule for DSA completion is a five-month acceleration from the original July 2009 schedule originally proposed by LANL. Funding for FY08 has been allocated to support this schedule and the development/review process includes interim interface with LASO to ensure proper development.

3. CMR Interim Technical Safety Requirements (ITSRs):

LANL submitted revised ITSRs for the CMR Facility in February 2008. LASO has completed initial review and requested additional supporting information in order to provide final disposition. Approval of the CMR ITSR package is expected imminently, after which validation of implementation by LANL in FY08 will be a focus area for LASO.

4. CMR Safety Systems Condition Assessment:

LANL has started Safety System Condition Assessments for CMR through initiating detailed review of activities completed as a part of the CMR Upgrades Project completed in 2001. LANL has developed Safety System Health Review procedures to be used by internal CMR Facility systems engineers as well as a Vital Safety System Condition Assessment process to be executed by LANL elements independent of CMR. LASO plans to shadow LANL activities to walk-down and determine material condition assessments of CMR safety systems and is currently working with LANL to improve fidelity on the schedule for system assessment activities in order to schedule NNSA resources for shadowing. This effort will provide direct input to development of the CMR Life Extension Project.

5. CMR Alternatives Study:

LANL has initiated efforts in response to your January 4, 2008 request to review options for program support presently performed in the CMR facility. A review team has been assembled, charter issued and funding provided to complete this action. As briefed to you and your staff on February 27, 2008, LANL will require additional time to assemble backup information and complete analysis needed for understanding cost, schedule, and technical scope associated with alternatives under development given the complexity of the options. This effort is expected to be completed in early May 2008 with results from the Alternatives Analysis forming key inputs to the INP workshop.

6. Wing 9 Future Operations/Missions:

LASO continues with efforts to increase fidelity in understanding projected/anticipated missions for CMR Wing 9 as committed to during the January 2008 meetings and discussions with NA-2. Potential missions/activities for Wing 9 currently under consideration include:

- Bolas Grande Confinement Vessel Disposition: LASO is working to formalize consensus agreement within NNSA along with program direction to allow LANL to proceed with this campaign-level effort in CMR Wing 9. Current planning basis for this activity targets completion in 2012 assuming a 2009 start date. LANL has prepared safety basis documentation to modify the current CMR Authorization Basis (Basis for Interim Operations [BIO]) allowing for installation of equipment in Wing 9 commencing later in FY08. The CMR DSA

currently under development will include this activity as part of the operational baseline for the facility. Current schedules call for completing requisite safety analysis through the CMR DSA prior to start of actual operations in Wing 9. LASO will continue efforts with relevant NA-10 elements in formalizing program direction to LANL regarding this activity.

- Remote-Handled 33 Shafts Transuranic (TRU) Waste Project: Technical and regulatory risks/uncertainties with this activity were described in the Disposition Options for Remote-Handled 33 Shafts TRU Waste at LANL Issue Paper. The subject Issue Paper has been prepared and vetted with NA-50 elements as well as NA-2. LASO continues dialogue with relevant NNSA Headquarters elements to further develop/refine technical and regulatory strategies in determining feasible disposition paths.

- Global Nuclear Energy Partnership (GNEP) activities: LASO has received briefings and engaged with senior LANL Managers involved with the GNEP program to obtain factual data regarding status of program development and clearer understanding of the potential operational and safety risks associated with GNEP. It is apparent that continuous engagement with DOE Nuclear Energy elements will be needed to determine level of maturity for this future mission and investigate other sites as alternatives. Beyond pilot or demonstration-scale activities, introducing significant new MAR in CMR to meet engineering-scale operations for GNEP is not consistent with current NNSA safety/operational philosophy for the facility. Again, LASO plans to maintain dialogue with NA-10 elements on this issue to increase fidelity in potential mission need for this activity in CMR Wing 9.

These future programs and implications to the CMR facility will be reviewed in more detail and are expected to be a major focus element for the May 21-22, 2008 INP Workshop as described in the attached correspondence from LANL. The May INP workshop will facilitate discussions of programmatic need, associated MAR and operational risks, and alternative analyses to support consensus decisions on programmatic baseline capabilities, operational location and durations, risk mitigation and acceptance and required resources. In the interim, LASO will continue to work with LANL and NNSA Headquarters elements to maintain regular and frequent communications to ensure all are apprised of status.

Since the issuance of the 1999 CMR Risk Management Strategy and implementation of the BIO, a significant reduction in MAR, improved safety controls, and reduction in programmatic operations has been achieved within the facility. LASO endorses and supports LANL efforts to implement a number of operational and funding strategies to further reduce operational footprint and reduce hazards within the CMR Building. As identified in our previous December 21, 2007 transmittal, LASO continues with the following recommended operational and safety strategy associated with maintaining minimum essential CMR capabilities at LANL:

- Replacement of existing CMR capabilities at LANL needed for core NNSA mission support through the design and construction of the CMRR project as soon as possible;
- Continuation of on-going risk reduction activities within the CMR Facility involving further reductions in MAR and consolidation of operational footprint to the minimum needed for critical NNSA and DOE missions;
- Updating CMR facility authorization basis through completion of a rule-compliant Documented Safety Analysis (DSA) by February 2009;
- Improved Oversight of the implementation of Formality of Operations at CMR through development of a specific oversight plan, to include review and approval and implementation of updated ITSRs in 2008;
- Continuation of CMR facility consolidation and authorization basis activities through a formalized CMR Life Extension Program with the main objective of achieving appropriate balance between safety, security, and programmatic risk.

The above strategy for CMR continued operations is analogous to the "Limited-in-Depth" (LID) approach utilized by the U.S. Navy for submarines that exceed their operational design life. In this LID approach, "material assessments" are completed on a submarine's major systems (analogous to safety-related systems in CMR) which when evaluated, provide for set operational restrictions, i.e. limited-depth operations, in a safe manner, despite the fact that the age has exceeded its design life. As CMR has exceeded its design life and it is not practical to modify/upgrade the facility to current codes and standards, the operational strategy must be continuous risk reduction through reduction of MAR, consolidation of operations to the smallest footprint possible, and ensuring reliability of safety-related systems until the CMRR is completed and available.

Recognizing development of the various actions/activities listed will not be complete until after the May INP Workshop, LASO is prepared to provide interim status information to the DNFSB as necessary. In the interim, LASO will continue to work with LANL and NNSA Headquarters elements to maintain regular and frequent communications to ensure all are apprised of status. My staff is available to support development of interim NNSA responses to DNFSB as well as preparation and conduct of briefings. Please contact Dan Glenn, Technical Deputy at (505) 665-6798, or Juan Griego, Acting Assistant Manager for National Security Missions at (505) 665-6439 as needed.

Donald L. Winchell, Jr.
Manager

Attachment:
Letter, PADNWP:08-021, dated 2/22/07

cc:
B. Ostendorff, NA-2, HQ/FORS
M. Thompson, NA-17, HQ/FORS
M. Schoenbauer, NA-10, HQ/FORS
D. Crandall, NA-11, HQ/FORS
W. Goodrum, NA-12, HQ/FORS
X. Ascanio, NA-13, HQ/FORS
J. McConnell, CDNS, HQ/FORS
J. Edgeworth, NA-118, HQ/FORS
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SEPARATION

PAGE

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Principal Associate Directorate
for Weapons Programs (PADWP)
Post Office Box 1663, MS A107
Los Alamos, New Mexico 87545

Date: February 22, 2008
Refer To: PADWP-08-021

Mr. Don Winchell, Manager
NNSA-Los Alamos Site Office
US Department of Energy
528 35th Street, MS A316
Los Alamos, NM 87545

SUBJECT: UPDATE AND STATUS OF THE LOS ALAMOS NATIONAL LABORATORY (LANL) PLAN TO ADDRESS CONTINUED OPERATION OF THE CHEMISTRY AND METALLURGY RESEARCH (CMR) BUILDING

Dear Mr. Winchell:

This letter updates and provides status of the LANL plan to address continued operation of the CMR Building. This supplements our submission of December 10, 2007, and fulfills your request of November 2, 2007, to support a National Nuclear Security Administration (NNSA) response to Defense Nuclear Facility Safety Board letter on CMR dated October 23, 2007.

A review of our plan was conducted with senior NNSA management on January 23-24, 2008. During this review, NNSA validated our approach and requested several additional actions to further define risk or evaluate alternatives. Our current status with respect to these actions is outlined below.

Completed actions to define and reduce risk at CMR:

- Submitted and received approval on a Safety Basis Strategy for a compliant Documented Safety Analysis (DSA) on January 29, 2008.
- Submitted revised Interim Technical Safety Requirements (ITSRs) to LASO on February 14, 2008.
- Finalized plan to terminate programmatic work in Wing 3 by end of FY08.
- Supported LASO in evaluating the material at risk (MAR) limits and MAR storage requirements at CMR completed February 8, 2008.

Ongoing initiatives to evaluate and support continued operations at CMR:

- Accelerated baseline schedule and continued work on the DSA, to be complete in January 2009 (updated schedule enclosed)
- Initiated Safety System Condition Assessments at CMR
- Initiated detailed review of activities completed as a part of the CMR Upgrades Project.
- Per NNSA direction of January 4, 2008, chartered CMR alternatives team and down-selected to three options for detailed evaluation.
- Initiated study of transitioning Wing 9 to non-Defense Programs (DP) sponsorship.
- Initiated study of Hot Cell capability requirements for DP and non-DP programs.

- Remote-Handled 33 Shaft TRU Waste options summary submitted to LASO on February 15, 2008 (enclosed).
- Initiated Life Extension activities to further enhance the safety posture of the facility.
- Completed detailed cost and schedule estimates for consolidation and nuclear materials disposition activities.
- Received incremental funding of $4.7M to support ongoing consolidation activities.
- Incorporated an appropriate funding request into our FY10-14 planning for the March 13, 2008 DP programming session.

Per our commitment, LANL has scheduled an Integrated Nuclear Planning workshop for May 21-22, 2008, to facilitate discussions of programmatic need, associated MAR and operational risks and alternative analyses. This will enable LANL and NNSA decisions on the capabilities to be included in the programmatic baseline, operational location and durations, risk mitigation and acceptance and required resources. In the interim, LANL, LASO and Headquarters will maintain regular and frequent communications to ensure all are apprised of status. LANL has scheduled a review of current status and this response with NNSA staff on February 26, 2008.

Should you have any questions or require additional information, please contact Joel Leeman at 606-0800 or Chris James, Project Director for CMR Consolidation and Life Extension, at 665-9263.

Sincerely,

Glenn Mara
Principal Associate Director

GM/JL/rfd

Enclosures a/s

Cy: M. Thompson, NA-17/Forrestal Building, US Department of Energy, 1000 Independence Avenue, SW, Washington, DC 20585, w/enclosure
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