Department of Energy
National Nuclear Security Administration
Washington, DC 20585
December 17, 2007

OFFICE OF THE ADMINISTRATOR

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

Dear Chairman Eggenberger:

This is in response to your September 10, 2007, letter requesting a report regarding the National Nuclear Security Administration's (NNSA) utilization of the Materials Accountability and Safeguards System (MASS) at the Los Alamos National Laboratory (LANL).

NNSA Headquarters' review of the LANL criticality safety program raised concerns regarding the potential for improper use of MASS as a criticality safety control system in 2005. During the past year, the Los Alamos Site Office (LASO) identified improper utilization of MASS for criticality safety purposes as a causal factor in a criticality safety infraction involving a mismatch between designated item locations in MASS and posted criticality safety limits on August 15, 2007. The specific issues identified in your letter are addressed below.

1. "Identification of the safety functions that MASS currently performs and upon which management relies, and all new safety functions which will be incorporated into the upgraded system."

The LANL description on the use of MASS is provided as an enclosure. It describes LANL's use of MASS as a Safeguards Nuclear Material Control and Accountability (MC&A) software system that provides a convenient operator aid for tracking fissionable material masses. Operator understanding and compliance with criticality safety limits is a procedural and safety management programmatic requirement implemented independently of the MASS system. MASS is not relied upon to perform a criticality safety function and, therefore, requires no upgrades for criticality safety purposes. LANL is in the process of modifying safety procedures and retraining facility staff to ensure that MASS is used only for its intended purpose.

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2. "Discussion of the process for incorporating these new requirements into an improved MASS, and how lessons learned from previous upgrade attempts, including the need for strong project leadership, have been captured in the upgrade strategy and milestones."

NNSA has no plan to incorporate criticality safety requirements into MASS. MASS cannot be used as an effective tool for criticality safety because criticality safety limits typically depend upon parameters other than fissionable material mass (e.g., shape, form, enrichment, spacing, etc.) that a safeguards MC&A does not, and should not, capture and track.

3. "Compensatory measures to ensure the safety of material movements before the MASS upgrade has been completed."

LANL is in the process of modifying safety procedures and retraining facility staff to ensure that MASS is used only for its intended MC&A purpose. NNSA has no plans to perform criticality safety related upgrades for MASS.

4. "Specific actions the NNSA will take to ensure the success of the MASS upgrade."

As noted above, NNSA has no plans to perform criticality safety-related upgrades for MASS. However, LASO will provide operational oversight coupled with two formal assessments in Fiscal Year 2008 using selected requirements from DOE-STD-1158-2002 to ensure the actions detailed in the enclosure are successful in eliminating any real or apparent reliance on MASS for criticality safety issues.

If you have any questions, please contact me or Dr. Jerry McKamy at 301-903-8031.

Sincerely,

Thomas P. D'Agostino
Administrator

Enclosure

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