DEFENSE NUCLEAR FACILITIES SAFETY BOARD

November 14, 2003

MEMORANDUM FOR: J. Kent Fortenberry, Technical Director
FROM: C. H. Keilers, Jr.
SUBJECT: Los Alamos Report for Week Ending November 14, 2003

On Friday, the site rep attended a meeting in Albuquerque on lab support for Pantex operations.

Integrated Safety Management (ISM): LANL is assigning high priority to implementing an interim work control process intended to improve worker safety (site rep weekly 10/31/03). This is part of a longer term effort to systematically improve and integrate the current programmatic, facility, and sub-contractor work management systems into one system. By Friday, LANL senior management is expected to have identified Responsible Division Leaders for all facilities, assigned delegations, and developed a risk-based schedule for implementing the interim process during the next few months.

Plutonium Facility (TA-55): LANL has prepared and NNSA has agreed to a plan for assessing and recovering the Pu-238 contaminated room that is the subject of the recent NNSA Type B investigation (site rep weekly 8/8/03). The plan has 4 phases: (1) assess radiological conditions and residue inventory; (2) reconfigure residue items and interim storage; (3) decontaminate the room; (4) repackage and store residue items until disposition.

The assessment phase (phase 1) is expected to begin next week and involves contamination and radiation surveys, work area decontamination, and assessment of the room's inventory and packaging. Information from this phase will be used in planning and establishing safety controls for the later phases. Room entries are to be made using full-face respirators with appropriate continuous air monitor alarm set-points. During the reconfiguration phase (phase 2), items will be over-packed in plastic filtered bags and placed in either TA-55 standard cans or 55-gal WIPP type filtered drums (min: 6 packages per drum). During the final repackaging (phase 4), most of the inventory will go through pyrolysis to ash and be packaged in a "stainless steel can - plastic bag - TA-55 standard outer can" configuration. LANL is pursuing whether these materials can ultimately be disposed of at WIPP.

Critical Experiments Facility (TA-18): TA-18 has nearly completed installing the Safety Class temperature scram systems in SHEBA and Planet. In a July 9th letter, the Board raised questions about the ability of these systems to perform their intended function, how their designs were reviewed, and how they will be verified when installed. NNSA owes the Board a response prior to LANL removing interim safety controls. NNSA is planning to conduct an independent design review of these systems, patterned after a similar NNSA review done in 2002 on a Sandia reactor control system upgrade. This effort could help resolve some issues and focus those remaining.

Weapons Engineering Tritium Facility (WETF): NNSA owes the Board a rapid response on the functionality of the WETF NFPA 780 lightning protection system, which NNSA has designated Safety Class. This designation resulted from a postulated accident scenario involving lightning-induced failure of multiple tritium storage containers with a fire. This week, the second lightning protection expert issued his report (site rep weekly 9/5/03). While some conclusions differ (e.g., higher flash probability), both experts have concluded that (a) lightning-induced rupture of multiple containers is incredible and (b) the much lower consequence scenario involving burn-through of thin-wall system tubing is the dominant lightning-related risk. For perspective, the system inventory limit is the same as that in a single container, and systems are only loaded to this level about 10 % of the time or less. This scenario's consequences would not normally merit Safety Class controls. NNSA addresses the fire risk via other controls, such as fire suppression, robust containers, and combustible limits. The second expert's report included 11 options to consider if further lightning risk reduction is desired.