DEFENSE NUCLEAR FACILITIES SAFETY BOARD

May 10, 2002

MEMORANDUM FOR: J. Kent Fortenberry, Technical Director
FROM: C. H. Keilers, Jr.
SUBJECT: Los Alamos Report for Week Ending May 10, 2002

Jordan, Martin, Quirk, and Roarty were on site this week reviewing the critical experiments facility (TA-18) proposed authorization basis, machine modifications, SNM inventory, and operations.

Chlorine Dioxide Event: LANL progress on addressing the January chlorine dioxide explosion in TA-54 West and implementing corrective actions appears to be lagging. The investigation report is not yet issued. When issued, it may have implications on laboratory work control, Safe Work Practices, and Integrated Safety Management (site rep weeklies 1/11/02, 3/1/02, 4/5/02).

Authorization Basis (AB): Due to escalating resource estimates, DOE and LANL are considering broader use of Bases of Interim Operation (BIOs) to bring nuclear facility ABs into compliance with the Nuclear Safety Management rule (10 CFR 830) by April 2003. DOE already planned to use BIOs for the Chemistry and Metallurgical Research building (CMR) and the critical experiments facility (TA-18). New candidates for BIOs include the radiochemistry laboratory (TA-48), the waste characterization and reduction facility, and possibly others.

Critical Experiments Facility (TA-18): The staff is reviewing TA-18 operations, inventory, and proposed AB changes. Overall, TA-18 is making progress on addressing issues reported earlier this year. Godiva and Comet are working well. Planet has been shutdown since November 2001. Control system upgrades are in place and will be tested next week. Flattop has been inoperable since February 2000. Its upgraded control rod drive system and missing interlock are installed. LANL anticipates restart in June. SHEBA has been inoperable since August 2000 due to the flammable gas generation question. LANL has submitted an Unreviewed Safety Question Determination to DOE and anticipates restart in July. The gas generation issue may require modifications to resolve (e.g., instrumentation to confirm head-space flow and inerting).

The upgraded AB proposed by LANL in March is still under review by DOE. Overall, it appears to be an improvement but will require further clarification and supporting equipment upgrades. Regarding the special nuclear material (SNM) inventory, TA-18 appears to have made a good start at identifying materials no longer required and has proposed to DOE an active material management program as an AB administrative control. Some excess uranium material has already been shipped. Progress is being made toward near-term disposition of excess SHEBA uranium solutions, now stored in potentially embrittled plastic containers. In about two months, LANL expects disposition plans for roughly 30 drums of poorly characterized uranium-based material. CMR receipt capability and throughput appears to be the rate-controlling step for disposition of some excess uranium in TA-18.

Decontamination and Volume Reduction System (DVRS): DVRS will require manually intensive radiological operations and will process packages of increasing hazard with time (site rep weekly 3/1/02). DOE and LANL plan to start up DVRS in phases: first as a low-hazard, radiological facility, upgrading later to a Hazard Category 3 and possibly even Hazard Category 2 nuclear facility. The site rep understands that LANL has resubmitted the hazard analysis to DOE and plans to begin its readiness assessment (RA) next week. A DOE RA is scheduled for the end of June.