DEFENSE NUCLEAR FACILITIES SAFETY BOARD

November 24, 2006

MEMORANDUM FOR: J. Kent Fortenberry, Technical Director
FROM: B. Broderick and C. H. Keilers, Jr.
SUBJECT: Los Alamos Report for Week Ending November 24, 2006

Andersen was here this week attending a CMRR design status meeting.

Fire Protection: Most of the postulated highest-consequence nuclear accidents at LANL involve fire. LANL may not have adequate fire-fighting capability to respond to a nuclear facility fire, particularly if fire fighters are simultaneously responding to a fire elsewhere at the laboratory or the town-site.

The DOE Facility Safety order (DOE O 420.1B) requires DOE sites to implement an acceptable fire protection program with specified features; these include preparing a baseline needs assessment (BNA) that establishes the minimum required site fire-fighting capabilities and updating the BNA at least every 3 years. NNSA and LANL completed a BNA in 2004 that has languished and likely no longer reflects current conditions, such as the expanding TA-55 mission and the new National Security Science Building. The 2004 BNA also did not clearly set the minimum required site fire-fighting capabilities since LANL – possibly uniquely among DOE sites – relies on county fire-fighting resources and the 2004 BNA focuses on mixed needs. NNSA and LANL ought to expeditiously update the BNA and thereby clearly establish LANL's current and future fire-fighting needs (ref: Board letter 5/31/05).

Radioactive Liquid Waste Treatment Facility (RLWTF): Last weekend, LANL smoothly replaced the leaking caustic waste receipt tank and moved it to TA-54 Area G; system restoration has started. The tank developed the leak in September 2003, and its material condition has resulted in numerous safety and programmatic issues (e.g., site rep weeklies 9/19/03, 11/19/04, 4/29/05, 6/10/05, 3/24/06).

After removal, LANL determined that the tank was lighter and more heavily contaminated with Am-241 than expected; this has led to questions on disposition and on adequacy of the transportation procedures used. Other than that, this operation appears to have been well planned and well executed due to increased formality of operations and management attention applied during the last 18 months.

Plutonium Facility (TA-55): On Tuesday (11/21), a new spring-loaded sample holder ejected a small piece of plutonium metal from a hood that then bounced off a worker's anti-Cs and fell to the floor; the three workers in the room evacuated; the continuous airborne monitor alarmed; one worker had positive nasal smears, indicating a potential uptake; bioassay of affected workers is underway.

It appears that the new sample holder did not receive adequate scrutiny as a new potential hazard before being placed in use, which raises questions about work planning, authorization, and readiness determination. This operation is also incompletely described in the applicable safety basis process hazard analysis. TA-55 plans to conduct cold testing of the new sample holder before resuming the operation.

Quality Assurance: The NNSA Site Office discovered this week that LANL has issued and is implementing a new Quality Assurance Plan (QAP) in advance of NNSA approval. The Nuclear Safety Management rule (10 CFR 830) requires the QAP receive federal approval; NNSA Site Office review is underway. The proposed QAP, submitted on Sep 8th, reflects the LANS organization and is intended to incorporate requirements from the latest DOE Quality Assurance order (DOE O 414.1C).