DEFENSE NUCLEAR FACILITIES SAFETY BOARD

June 1, 2007

MEMORANDUM FOR: J. Kent Fortenberry, Technical Director
FROM: B. Broderick and C. H. Keilers, Jr.
SUBJECT: Los Alamos Report for Week Ending June 1, 2007

Broderick was off-site this week.

Contaminated Injury Investigation: This week, LANL released the corrective action plan for the CMR and TA-55 contaminated wound incidents that occurred in January; exposures to personnel are still being determined (site rep weeklies 4/13/07, 3/9/07, 1/19/07, 1/12/07). Key elements include:

- June - institutional plan for improving human performance
- July - facility-specific models for nuclear facility oversight coverage; institutional process to ensure consistency of management roles and responsibilities; management training plan, including human performance, integrated work management, performance-based leadership
- August – institutional glove-box safety program, capturing best practices, trending breaches
- September – activity-level oversight in nuclear facilities, distinct from work supervision
- October – new first-line leadership positions with technical and operational responsibilities
- January 2008 – human performance training completed by all current managers.

Plutonium-238 Operations: LANL has removed all Pu-238 residues from the TA-55 storeroom contaminated in Aug 2003; the room has been down-posted from an airborne radioactivity area to normal access. The safe recovery of this storeroom and disposition of these residues are significant and commendable accomplishments that eliminated hazards to the public and the workers.

Four years ago, this room had 238 residue packages, containing 800 grams of Pu-238 residues, radiologically equivalent to about a quarter metric ton of weapons-grade plutonium. Some residues were a decade old; some were intermixed with combustibles in poor containers within degrading plastic bags; conditions paralleled those assumed going into TA-55's worst case accident scenarios.

Last November, LANL informed the Board that these residues also posed about a quarter of the worker-related risk due to TA-55 packaged materials. In August 2003, two workers received Pu-238 uptakes in this room when an internally corroded package failed; the simple act of handling the package was sufficient to dislodge corrosion and release contamination into the room.

In 2004, little progress was made decontaminating the room due to safety basis issues and the LANL stand-down. By mid-2005, the room was largely decontaminated; emphasis shifted to the residues. By late 2005, LANL had disposed of the lean residues and 40 % of the packages. High-activity containers were problematic because of the handling risk during contents-splitting and the large projected waste volume, comparable to a decades's worth of TA-55's transuranic waste. By late 2006, LANL and WIPP had agreed on a way to decrease waste volume by an order of magnitude. In 2007, LANL loaded the highest-activity containers into pipe over-pack containers, minimizing handling risk.