DEFENSE NUCLEAR FACILITIES SAFETY BOARD

September 21, 2007

MEMORANDUM FOR: J. Kent Fortenberry, Technical Director
FROM: B. Broderick and C. H. Keilers, Jr.
SUBJECT: Los Alamos Report for Week Ending September 21, 2007

Plutonium Facility (TA-55): LANL has removed the safeguarded trailers from the pad at TA-55 and is evaluating the pad's future use, possibly in support of waste operations (site rep weekly 10/28/05).

Criticality Safety: On Thursday, TA-55 paused all fissile material movements except those involving waste, shipping and receiving, and Pu-238; workers are placing operations in a safe condition for an extended period. This was a prudent response after LANL determined on Wednesday that the margin of safety for four vault rooms with extensive neutron shielding is less than previously believed under normal conditions and is incompletely understood under credible upsets, independent of the presence of neutron poison (boron). New criticality safety evaluations are being prepared for the vault. LANL will resume each unit operation after screening and confirming adequate margin exists (site rep weeklies 9/7/07, 8/31/07).

Safety Basis: At present, LANL anticipates insufficient funding in FY-08 to fully implement updated safety bases, to assess facility-specific impacts of the updated seismic spectrum, and to develop a new CMR safety basis supporting post-2010 operations. LANL nuclear facilities are now operating under a set of safety bases ranging up to 12 years old. LANL has proposed interim technical safety requirements as a stop-gap measure for CMR and intends to propose several safety bases to NNSA within the next two weeks, including TA-55, Area G, and WETF (site rep weeklies 8/3/07, 6/29/07).

Plutonium-238 Operations: TA-55 has resumed Pu-238 pyrolysis of combustible residues, which generates a safer, more chemically inert ash; however, the ash is classified as homogenous waste and lacks an approved WIPP disposal pathway; this is a long-standing problem. TA-55 also continues to successfully run bench-scale aqueous scrap recovery, in the absence of the full-scale line; this is a high-dose operation, resulting in some operators being work-restricted (site rep weekly 6/23/06).

Transuranic Waste Operations: LANL has declared a potential inadequacy in safety analysis related to Area G's lack of drum venting capability. Last Thursday, workers opened an unvented low-activity drum, counter to procedure, after removing the drum from a vented over-pack. The event was discovered on Friday when the same crew encountered another unvented drum but properly responded by stopping work. Area G has 43 unvented drums that were found and segregated last October because LANL has no approved means to vent these drums (site rep weekly 5/25/07).

LANL has made about 110 shipments to WIPP to date in FY-07, shipping about 2,600 drums and nearly 14 kCi. However, the Area G aboveground inventory (about 130 kCi now) has remained relatively static due to receipts, primarily from TA-55 and the Off-Site Source Recovery Program. Disposal of newly generated waste could be expedited by establishing waste certification capability within TA-55; this has been discussed often, but there has been little progress (site rep weekly 3/2/07).

Radioactive Liquid Waste Treatment Facility (RLWTF): RLWTF acid and caustic transuranic waste receipt tanks are 85% and 31% full, respectively; processing is expected to resume in February 2008. To support the schedule, LANL has elected to delay removing sludge from a sludge treatment tank that constitutes the facility's largest source-term until after a new drum tumbling unit is installed; this increases this effort's complexity and risk.