DEFENSE NUCLEAR FACILITIES SAFETY BOARD

October 5, 2007

MEMORANDUM FOR: J. Kent Fortenberry, Technical Director
FROM: B. Broderick and C. H. Keilers, Jr.
SUBJECT: Los Alamos Report for Week Ending October 5, 2007

Plutonium Facility (TA-55): The following are noteworthy: • LANL has proposed a new TA-55 safety basis to replace the 1996 facility safety analysis report and the 2005 interim technical safety requirements; if approved, LANL estimates it will take a year to implement within the current budget. • LANL has issued a report on the June Director's Assessment; the report has about 100 findings and basically concludes that TA-55 is not supported in a manner commensurate with its national importance; that operations are not being performed to modern nuclear standards; and that work is done safely primarily due to the collaboration and experience of personnel. • The TA-55 confinement boundary was systematically extended this week to include the tunnel, which is being modified to support nuclear material radiography. • TA-55 is considering splitting the upcoming outage, with the first phase starting on Oct 14th; this takes advantage of the current pause in fissile material operations and would permit some operations in November (site rep weeklies 9/7/07, 8/24/07, 6/22/07, 6/15/07).

Criticality Safety: TA-55 has piloted the screening process on select aqueous operations and finalized the screening procedure; the pilot included two dozen operations, of which half were found to require some future action, ranging from a minor change to full evaluation. These results are consistent with the 2006 screens; the difference now is increased emphasis on identifying unprotected assumptions, on considering credible upsets more deliberately, and on documenting technical rationale more thoroughly.

TA-55 plans to screen about 500 unit operations before they resume. Near-term priorities are assay equipment, and material management & transfer systems – basically, key capabilities for inventorying and moving material around the facility. Vault operations also are a key capability to be screened early; however, the vault analyses are convoluted, and vault operations are likely to be challenging to demonstrably show to have adequate margin-of-safety with existing analyses (site rep weekly 8/31/07).

Transuranic (TRU) Waste Operations: Unrecognized unvented drums are increasingly problematic here (site rep weekly 9/21/07). On Wednesday, the WCRR repackaging facility suspended operations due to the deflagration hazard from unvented internal containers, which can have volumes up to 30 gallons; the safety basis prohibits unvented internal drums, but a purpose of the facility is to remove such drums and containers. For the interim, LANL has proposed using radiography to confirm that drums coming to WCRR have low hydrogen retention potential and can be safely remediated.

The risks associated with the aboveground TRU inventory at Area G are being reassessed under a new safety basis, expected now in November; the 2003 safety basis identified about three-dozen scenarios with unmitigated consequence between 1 and 1,800 Rem CEDE. In spite of making more than 110 shipments to WIPP in FY-07, this inventory has remained largely unchanged because of receipts of newly generated waste, principally from TA-55 (site rep weeklies 9/21/07, 1/5/07).

Due to funding issues, LANL is beginning to close down the project for a new storage and shipping facility for newly generated TRU waste. It may be appropriate for NNSA and LANL to examine certifying and shipping such waste directly from TA-55 (e.g., using the safeguarded trailer pad); this could reduce the drum handling and opening requirements for drums after they leave TA-55 and thereby reduce the load on the Area G legacy waste project (site rep weeklies 3/2/07, 2/17/06).