DEFENSE NUCLEAR FACILITIES SAFETY BOARD

August 4, 2006

MEMORANDUM FOR: J. Kent Fortenberry, Technical Director
FROM: C. H. Keilers, Jr.
SUBJECT: Los Alamos Report for Week Ending August 4, 2006

Broderick, Elliott, and Plaue were here this week reviewing criticality safety and TA-55 upgrade plans.

Authorization Basis: NNSA has approved LANSCE operating under its current safety basis until August 2007 and the TRUPACT shipping facility, RANT, operating under its older technical safety requirements (TSRs) through this month. For TA-55, LANL has declared a potential inadequacy in safety analysis on the interim TSR issues and plans to request NNSA approval of interim TSR changes.

Institutional Safety Programs: LANL management has acknowledged a $200M shortfall in its FY-07 budget (i.e., ~10 %); the impact on necessary improvements to safety programs is uncertain. For example, the Operational Efficiency (OE) Project, which ends Oct 1st, identified that $7.4M over 3 to 5 years is required to execute the OE-generated plan for technical baseline reconstitution of vital safety systems in nuclear facilities; FY-06 funding for this was $0.2M. Similarly, the OE-related plan to systematically address about 600 institutional training issues identified during the last 3 years is estimated to cost $44M and take 4 years; resolving these training issues appears fundamental to LANL improving other safety programs, such as work control, conduct of operations, and criticality safety. Currently, neither LANL's priorities for these improvements nor NNSA's intentions to contractually incentivize the improvements is clear; their overall priority may be decreasing.

Criticality Safety: Criticality safety is one of the LANL safety programs for which NNSA and LANL's intentions are unclear and the priority may be falling. The DOE Facility Safety Order 420.1 requires that nuclear operations satisfy the requirements of the ANSI/ANS nuclear criticality safety consensus standards, unless otherwise approved by DOE. NNSA's on-site review last Oct reported that the program was not demonstrably compliant with these standards (site rep weekly 12/16/05).

While LANL has completed high and moderate priority walk-downs of fissile material operations, LANL is falling behind on its criticality safety improvement plan, intended to bring the LANL program into compliance with the standards; the schedule is undefined now due to budget issues. For example, it's unlikely that LANL has sufficient criticality safety staff to complete the walk-downs, resolve issues, and implement the other ANSI/ANS program elements, including conducting annual oversight reviews of several hundred fissile material operations; on-site criticality staff is about half that estimated just to sustain the status quo and a quarter of that estimated to drive the improvement plan to completion in FY-07. The NNSA Site Office still lacks full-time federal expertise to provide oversight of the program. While these issues persist, NNSA and LANL are accepting higher risk than would be accepted in nuclear industry practice (site rep weeklies 3/31/06, 3/10/06, 2/17/06, 1/13/06).

Tritium Operations: LANL is moving out TA-21's remaining tritium operations and preparing to start up some higher-activity tritium operations in a TA-16 radiological facility. While the total inventory is less than a tenth of the Hazard Category (HC-)3 threshold, it seems more appropriate from a safety perspective to transfer the operations to the new radiologically-vacant WETF wing (Bldg 450), which has better safety features and has been maintained to HC-2 standards. In 2004, NNSA withheld approval of Bldg 450 startup due to WETF configuration management issues, since shown to exist at all the LANL nuclear facilities. These lab-wide issues motivated the conduct of engineering initiative and the technical baseline reconstitution discussed above (site rep weeklies 9/2/05, 7/9/04).