DEFENSE NUCLEAR FACILITIES SAFETY BOARD

November 28, 2003

MEMORANDUM FOR: J. Kent Fortenberry, Technical Director
FROM: C. H. Keilers, Jr.
SUBJECT: Los Alamos Report for Week Ending November 28, 2003

Waste Operations: LANL is moving forward on a plan to resume WIPP shipments, which LANL suspended in October (site rep weekly 10/3/03). Resuming safe, properly certified shipments is key to DOE and LANL meeting the commitment to ship about 2,000 drums of higher-wattage TRU waste from TA-54 to WIPP by the end of FY04 (currently: 7 % done). The plan involves compliance analyses, retraining, conduct of operations assessments, and management self-assessments for 30 activities – followed by readiness assessments (RAs) for 6 activities. The NNSA Site Office Manager is the startup authority for the final activity, expected to be completed in December.

On November 5th, LANL submitted a corrective action plan for the disapproved safety basis for the TA-50 Waste Characterization, Reduction, and Repackaging Facility (WCRRF - site rep weekly 10/24/03). WCRRF is primarily used for visual examination and repackaging activities to support WIPP shipments. Key elements of the plan are a fire hazard analysis update, seismic upgrade feasibility study, criticality safety update, natural gas removal study, comment resolution meetings with NNSA – all leading up to a resubmitted safety basis in April 2004. In the meantime, LANL is complying with restrictive inventory limits in the current safety basis (i.e., HC-3 inside the building, HC-2 storage outside the building). Success requires close NNSA and LANL management attention.

Engineered Controls: The site rep continues to believe that uncertainty exists on whether some designated engineering controls in LANL nuclear facilities will perform their intended safety function (site rep weekly 7/3/03). There appears to be little site-wide guidance on how to evaluate newly designated safety systems, such as requirements to conduct independent design adequacy reviews, ensure appropriate standards are selected, perform gap analyses, follow up with cost-benefit analyses for upgrades, and define meaningful operational inspection criteria. LANL has a solid effort underway to develop institutional requirements and recently established the position of Facilities Chief Engineer. This person is expected to provide technical leadership and be the authority having jurisdiction on LANL engineering standards, except those assigned elsewhere (i.e., fire protection, electrical safety). These initiatives are still in early stages, will take time to implement, and are limited to facility work – even though LANL programmatic divisions have responsibilities for many safety systems.

Weapons Engineering Tritium Facility (WETF): WETF is undergoing a readiness assessment (RA) focused on preparation for Building 450 startup and verification of Technical Safety Requirement (TSR) implementation. This includes examining closure of 67 pre-start findings from the LANL Operational Readiness Review (ORR) from a year ago (site rep weeklies 11/22/02, 12/20/02). The RA should conclude in early December. The DOE ORR is tentatively scheduled for late January but may slip due to the site-wide priority on implementing the interim work control improvements.

This week, WETF declared a positive unreviewed safety question based on new information indicating a 10 % increase in the frequency of the bounding, lightning-initiated tritium release. The new information came from a custom site analysis during the 2nd expert's lightning protection review: particularly, predicted flash probability is 46 times higher than the previous. Among the 2nd expert's conclusions are (1) a scenario that results in breach of one or more tritium storage containers is incredible; (2) the facility and lightning protection system designs cannot prevent arcing, but either the system or facility will provide the lightning attachment point, reducing total current; and (3) the dominant lightning-related contributor to overall risk is breach of thin-walled tritium system tubing.