

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

October 24, 2003

MEMORANDUM FOR: J. Kent Fortenberry, Technical Director

FROM: C. H. Keilers, Jr.

SUBJECT: Los Alamos Report for Week Ending October 24, 2003

Blackman and Stevenson were on site this week participating in a dynamic experiments design review.

Authorization Basis: The TA-55 safety basis needs updating. Safety basis updates are expected to be proposed and approved once per year, but this has not occurred for LANL nuclear facilities. The current TA-55 safety analysis report and technical safety requirements (TSRs) were approved in 1996 and 1999, respectively. NNSA has yet to act on an update proposed by LANL in April 2002. NNSA has made resolution of several issues raised by the Board and its staff over several years contingent on this update (e.g., continued acceptability of the passive ventilation mode, adequacy of fire suppression in hydraulically remote locations). Recently, NNSA informed the staff that action would be taken before year's end. However, the update proposed in April 2002 itself now likely needs updating.

This delay may impact safety. Example - the controls proposed in the April 2002 update may not reflect the latest DOE requirements on worker safety (DOE STD-3009, CN 2, also dated April 2002). Example - the current TSRs do not specify periodic in-service inspection of design features to ensure they perform their safety function (site rep weekly 9/12/03). Example - a set of experiments to characterize long term performance of 3013 containers in support of Board Recommendation 94-1 has been waiting safety basis approval for about 10 months. Example - a 3 year delay has occurred in resuming robotic calorimetry after upgrades (1998-2000). The delay appears due in part to lack of closure on safety basis issues. TA-55 has a large inventory that needs to be periodically assayed via calorimetry to meet safeguard requirements. During this hiatus, these assays have been performed manually, increasing worker dose and ergonomic and handling risks. Last Friday, NNSA approved page changes to the 1999 TSRs that (a) reflect the as-built robotic calorimetry room fire rating is not as high as previously approved (1 vs 2 hr) and (b) compensate by reducing the transient combustible load limit, an administrative control. While an engineered control is preferred, this is a positive step. There are likely other examples. Overall, expedited reevaluation of the TA-55 safety basis is warranted.

Solid Waste Operations: On October 2nd, NNSA disapproved the proposed safety basis update for the TA-50 Waste Characterization, Reduction, and Repackaging Facility (WCRRF) because of comments on natural phenomena hazards (seismic, wind), natural gas hazard, fire protection, ventilation, and TSR operability. NNSA requested that LANL submit a corrective action plan within 30 days that addresses the issues. WCRRF is primarily used for visual examination and repackaging activities to support transuranic shipments to WIPP, a high priority for TA-54 risk reduction. LANL has stated that WCRRF has limited remaining service life (i.e., 5 years). It may be worthwhile to promptly consider interim controls that ensure safe operation while the benefits of upgrades are studied. Long-term site-wide risk reduction may warrant accepting a short-term increased risk from WCRRF operation with well-justified interim controls. Expediting alternatives to WCRRF (i.e., modular units) may also be worthwhile.

Liquid Waste Operations: LANL has proposed and NNSA appears poised to approve a path forward on the leaking caustic waste receipt tank in the TA-50 Radioactive Liquid Waste Treatment Facility (site rep weekly 9/19/03). The leak site is at the 42 % level. The short-term plan is to resume operations by transferring receipts from TA-55 through the TA-50 leaking receipt tank directly to the processing system (i.e., the neutralization tank). Transfers are expected to occur weekly and have a maximum volume of about 76 gal, including flush water (equivalent to about 7 % of tank volume if it were held up in the tank). The tank is within a concrete vault that would contain any release. LANL plans to replace the tank and associated piping during the next 6 to 12 months.