

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

June 11, 2004

MEMORANDUM FOR: J. Kent Fortenberry, Technical Director
FROM: C. H. Keilers, Jr.
SUBJECT: Los Alamos Report for Week Ending June 11, 2004

Martin, Nichols, Von Holle, and White were here this week reviewing LANL support for Pantex.

Critical Experiments Facility (TA-18): The Board has identified issues that need to be addressed in the near term to ensure continued safe operations in TA-18 (Board letter 5/21/04). Most of these issues focus on ensuring adequate controls for critical experiments with plutonium (Pu) metal.

This week, NNSA concurred in a LANL path-forward for these issues. Specifically, LANL identified three high-priority experiments involving kg-quantities of plutonium that need to be conducted before operations transfer to DAF. Two of these require Pu metal. LANL will request NNSA approval of a set of safety basis controls for the 3 experiments. Beyond these experiments, LANL intends to avoid challenging the evaluation guidelines by proposing a 10 gm Pu metal limit. These are positive steps.

Plutonium Facility (TA-55): NNSA and LANL need to assign higher priority to completing the cleanup and recovery of the room contaminated with Pu-238 last August, as well as addressing the inadequate storage configuration for Pu-238 residues now in this room. Significant systematic progress was made early in the year, but decontamination efforts have slowed – particularly in the vicinity of containers of residues that are on the floor or in cages – because there is no approved path-forward yet for these containers. LANL has started to bag the containers in place and is close to conducting a management self-assessment for resuming residue pyrolysis operations. To make progress, they need a technically sound and approved set of safety basis controls for packaging, handling, and storage of the residues and for temporary storage of outer drums that would provide a secondary barrier to release for some packages. NNSA and LANL need to expedite the hazard analysis preparation, review, and approval cycle started more than 3 months ago for these operations.

Waste Operations: NNSA has approved the safety basis for using the TA-54 Decontamination and Volume Reduction System (DVRS) for 5 months for visual examination and repackaging transuranic waste containers. This will require verification and approval to start up DVRS as a Hazard Category 2 nuclear facility. The approved engineered controls are as discussed last week, plus lightning protection and a roll-up door restraint as safety-significant. NNSA imposed 3 conditions of approval (i.e., 5-month duration, inventory limit, and readiness verification) and 8 Technical Safety Requirement (TSR) changes. NNSA also questioned whether the structure meets Performance Category 2 seismic requirements. A LANL May 28th report indicates that DVRS is built on fill over old waste pits and needs site-response characterization; the internal enclosure is susceptible to seismic anchor motion; and the building lateral load path relies on tension-bracing, which does not meet current LANL detailing requirements. LANL is evaluating future use of DVRS beyond this campaign.

Annual Emergency Exercise: On Wednesday, LANL conducted a full exercise centered around TA-54. The scenario involved a simulated car accident with injuries; an unrelated hostage and bomb threat; and a simulated explosive attached to chlorine cylinders on a truck bed, leading to activation of the Emergency Operations Center (EOC). NNSA and LANL evaluators identified several areas for improvement, such as: EOC internal communications; response to victims; use of checklists, aids, and logs; and on-scene command-and-control. LANL is still adapting to the new EOC.