

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

May 30, 2003

MEMORANDUM FOR: J. Kent Fortenberry, Technical Director
FROM: C. H. Keilers, Jr.
SUBJECT: Los Alamos Report for Week Ending May 30, 2003

Nichols, Martin, and Von Holle were on site this week reviewing LANL processes for developing weapons response data, which are vital inputs to Pantex safety analyses.

Plutonium Facility (TA-55): On Tuesday, LANL submitted to NNSA a revised process hazard analysis (PrHA) for the Pu-238 scrap recovery line. Changes were made to incorporate recent NNSA informal comments. On Thursday, NNSA approved with comments the revised PrHA. NNSA and LANL will have a schedule for readiness assessments and startup in about a week.

Substantive changes from the LANL January submittal are: (1) one of the five analyzed accidents had higher consequences (ball mill jar ejection), and the predicted dissolver deflagration energy increased; (2) the dissolver pot is safety significant; and (3) explicit proposed Technical Safety Requirements (TSRs) were withdrawn, although there are descriptions of what is considered to be TSR-level controls.

NNSA and LANL assert that public safety is assured by the existing building structure and confinement, and glovebox seismic integrity (i.e., safety class). They also assert that worker safety is assured by new features: unique ion exchange (IX) resin type, IX rupture disk, ball mill containers, ball mill steel lid and latch (i.e., safety significant). There are also new administrative controls: glovebox Pu-238 and combustible inventory limits, monthly IX liquid level inspection, resin replacement requirements (dose, dryness, age), and dissolver argon flow and pre-op test requirements. The ball mill lid interlock, IX exterior steel mesh, and IX auto-elution system are defense-in-depth.

Recommendation 2000-2: NNSA has completed the Phase II assessment of the site wide fire alarm system, including the partial system upgrade currently in design. This is the last Phase II assessment at LANL. The report is imminent. The assessment team observed that the system has about 22,000 alarm points and 250 fire control panels of numerous brands. About 80% of the panels need to be replaced or modified to resolve major signal delay issues (site rep weekly 1/17/03). The team made several suggestions including standardizing on one or two panel designs, as well as considering an additional project to upgrade 75-100 buildings not in the current project. Fewer panel designs should simplify maintenance and reduce life-cycle costs, since it reduces requirements for training, vendor services, and spare parts. LANL needs on-site expertise in these systems since fire alarm vendor support in many cases is 100 miles away.

The team also observed that many facilities are not scheduling fire system maintenance on time, resulting in only part of the required maintenance being accomplished. NNSA and LANL recognize that this is unsatisfactory. Improving maintenance priorities and efficiency is one of the main drivers for the LANL facility management realignment now underway (site rep weekly 2/14/03).

Radiochemistry Laboratory (TA-48): NNSA has downgraded TA-48 from Hazard Category 3 to a moderate hazard radiological facility, based on a LANL analysis, an NNSA facility walk-down, and a LANL demonstration of inventory controls. TA-48 is also in the process of restarting two facility areas that had higher inventories earlier in the year (site rep weeklies 1/31/03, 4/25/03).