

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

February 7, 2003

MEMORANDUM FOR: J. Kent Fortenberry, Technical Director
FROM: C. H. Keilers, Jr.
SUBJECT: Los Alamos Report for Week Ending February 7, 2003

Facility Operations and Maintenance: LANL completed transition this week to the new support services contractor, KSL (site rep weekly 8/9/02). The site rep has met the KSL senior management. They bring fresh perspective on facility maintenance practices and appear dedicated to worker safety.

Radiochemistry Laboratory (TA-48): NNSA has directed LANL to operate TA-48 using the safety basis approved last August, subject to two conditions: only operations necessary to reduce the radioactive inventory to below Hazard Category 3 (HC-3) levels are permitted in the Alpha Wing and the Basement Vault; and normal operations are permitted in other areas provided the inventory is below HC-3 levels. TA-48 is receiving help in strengthening the inventory control program from the new LANL Operations Support Group, OSG (site rep weekly 11/15/02). The OSG is thinly manned but making a difference here and in other facilities at LANL.

Critical Experiments Facility (TA-18): This week, LANL restarted the Solution High Energy Burst Assembly (SHEBA), which has been down since August 2000 due to a flammable gas generation question (site rep weeklies 5/10/02, 9/13/02). SHEBA is operating under Technical Safety Requirements (TSRs) approved last summer and verified to be in place by a LANL readiness assessment last November. The TSRs include two limiting conditions of operation that control flammable gas. One is an integrated power limit (i.e., total fissions in one day). The other requires the nitrogen cover gas system to have a specified flow, based on daily measurements. The accident analysis indicates that the power limit is sufficient to prevent conditions conducive to a detonation or deflagration. The TSRs also require periodically verifying that cover gas flow is sufficient to limit oxygen and hydrogen gas concentrations to less than 1 % by volume.

Design Criteria: Last week, NNSA directed LANL to prepare a corrective action plan for addressing issues identified in a crosswalk of LANL engineering processes to DOE criteria on explosive and nonreactor nuclear facility safety (DOE G 420.1-1). The focus is mainly on improving institution requirements for construction project management, including requirements for systems engineering, fire hazard analyses, defense-in-depth, and software quality assurance.

Decommissioning Activities: LANL and the Omega West Reactor D&D subcontractor have agreed to stricter hold-point and communication controls as a result of the event 2 weeks ago when work proceeded after radiation levels were found that were greater than expected (site rep weekly 1/24/03). This job involved removing interlaced graphite bricks in a confined area that had radiation levels up to 20 R/hr. Based on review of the event with LANL and the subcontractor, it does not appear that a less man-rem intensive approach would have worked that didn't generate other challenging hazards (e.g., profuse airborne graphite dust with activation products). LANL is receiving advanced notice of planned radiological work, hold points, and projected doses. Hold points and reevaluation occur now when an activity's radiological conditions exceed those expected by 20% or more. Within a few days, the subcontractor expects to complete removal of reactor internals and begin biological shield removal and radioactive waste shipments. The latter will continue until mid-March when the Be reflector will be shipped to TA-54. Decommissioning is expected to be done this summer. Overall, the project appears to be well-managed and to be using appropriate radiological controls.