

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

December 31, 2004

MEMORANDUM FOR: J. Kent Fortenberry, Technical Director
FROM: T. D. Burns Jr. and C. H. Keilers, Jr.
SUBJECT: Los Alamos Report for Week Ending December 31, 2004

LANL was closed this week, providing an opportunity for reflection on the year.

On July 16th, the LANL Director suspended all but essential operations, and LANL began a self-examination and resumption process. As of last week, the Director had approved resuming 77 % of the moderate and higher risk activity groups. Nuclear operations not yet approved to resume include TA-50/54 waste operations, the site services contractor, on-site transportation, TA-18 critical experiments facility, and TA-21 tritium facility (TSFF). LANL reports they have examined more than 3,000 operations and identified more than 2,000 safety-related corrective actions from this process.

A major challenge for LANL in the coming year will be to ensure that these corrective actions are consistent, complete, sustainable, and effective. Over the years, LANL has often identified valid issues, prepared corrective action plans that appeared credible, and then failed to execute. A recent example is the stalled TA-55 Type B corrective action plan, which began early this year. LANL studies of corrective actions from reportable occurrences illustrate the problem: most corrective actions are reactive, one-time, facility-specific responses; most target procedural changes or equivalent; few eliminate or substitute for the hazard; few specify new or modified engineered barriers; and few opt for institutional solutions. The level of sustained management commitment required to reverse this trend should not be underestimated.

Worker safety and work control issues contributed to the decision to suspend operations. In September, LANL issued a Conduct of Operations Manual, an updated integrated work management process, and a schedule to implement the latter by June 2005. In October, LANL corrected span-of-control problems by splitting the Operations Directorate and increased visibility and independence of key institutional functions including engineering, fire protection, and emergency management; however, NNSA and LANL continue to be reactive on emergent safety issues, such as TA-18's operational issues during the last year.

While the resumption reviews provided a shot-in-time perspective, the conditions that led to suspension could recur unless NNSA and LANL improve their assessment processes – including improving management's timely and accurate awareness of emergent operational issues. LANL assessment processes are not robust. The LANL Director has stated that he suspended operations because of a pattern of near misses in safety and security that created a fundamental lack of confidence in the lab's ability to conduct work without a major mishap. At the time of suspension, NNSA had an effective operational oversight process, but its effectiveness has sharply eroded due to resumption demands on staffing and to shifts in assignments and responsibilities. Most NNSA Site Office reporting of emergent safety issues now is informal and not amenable to systematic review. NNSA is currently attempting to rebuild its oversight processes, as well as verify corrective action closures. This will likely require increased staffing.

Regarding safety bases, within the last 2 weeks, NNSA has approved a LANL strategy for determining which proposed activities constitute a major modification requiring a Preliminary Documented Safety Analysis (PDSA). NNSA also clarified that interim safety bases employing safe harbor methodologies may be appropriate when the unreviewed safety question process is insufficient but a PDSA would be excessive. These are the most positive steps regarding safety bases taken this year. In most other areas, the safety basis issues discussed in the Board's letter of May 27th persist. Little progress is apparent on centralizing the safety basis function, improving quality of NNSA and LANL work, capturing a verified list of the safety bases, and updating aging safety bases (e.g., for plutonium operations – TA-55, CMR).