DEFENSE NUCLEAR FACILITIES SAFETY BOARD

February 21, 2003

MEMORANDUM FOR: J. Kent Fortenberry, Technical Director
FROM: C. H. Keilers, Jr.
SUBJECT: Los Alamos Report for Week Ending February 21, 2003

Martin, Stevenson (OE), and Von Holle were on site this week observing a LANL design review for a dynamic experiment confinement system.

Plutonium Facility (TA-55): Last Saturday, TA-55 shut down ventilation in a controlled manner for 6 hours due to an emergent need to secure instrument air. This was a planned shutdown. After restoring ventilation and completing confirmatory surveys, the facility resumed normal operations. On Wednesday, TA-55 determined that a large number of weekly fixed head airborne samples were reading high, based on preliminary counts. At this time, there are not any other indications of a significant contamination release (e.g., no continuous airborne alarms after ventilation restored, no elevated airborne monitor readings, no elevated contamination readings from daily radcon surveys, no trend of contamination found on personnel exiting rooms). LANL is investigating this event.

Instrument air reliability and its impact on confinement ventilation is a recurring issue. LANL is replacing the instrument air compressors to improve reliability. As previously discussed, alternatives are available that could improve confinement ventilation reliability, such as using process air or nitrogen as a backup to instrument air (site rep weekly 1/31/03).

Recommendation 2000-2: One Phase II assessment remains to be done at LANL. The site rep understands that the design for the partial site-wide fire alarm system replacement has nearly reached the stage where DOE and LANL anticipate conducting this remaining assessment. Timing is open.

Recommendations 94-1/2000-1: LANL has begun to systematically sort and package unneeded lower-risk residues for disposal at WIPP. This will reduce inventory and handling risks, improving safety, as well as lower costs, permit more efficient storage, and free up vault space, improving LANL's ability to support high-priority national security missions (site rep weekly 5/3/02).

Quality Assurance (QA): While much remains to be done, progress is being made in institutional quality assurance (site rep weekly 10/18/02). In January, NNSA agreed that LANL had resolved earlier comments on the institutional quality management implementation plan. NNSA still has concerns on the current QA reporting structure and is closely monitoring progress. This plan has been in development for awhile and appears to be a starting point. LANL has also completed a current program description, has nearly completed a gap analysis, and is refining planning and cost estimates. There continues to be a pressing need to achieve these improvements. For example, an NNSA facility rep recently reported an ejected connection during a non-radioactive vessel test, due in part to weaknesses in quality assurance.

Backfit Analysis: University of California has suggested that the LLNL backfit analysis methodology be considered here to decide if hardware modifications, procedure changes, or compensatory measures are warranted when a new standard is invoked. LLNL has a formal process that involves establishing an assessment team knowledgeable of a nuclear facility's safety systems, performing a gap analysis and a more detailed alternatives analysis, and submitting recommendations to the responsible Associate Director for approval and to the NNSA Site Office for concurrence. This could lead to improvements in LANL engineering processes and in achieving compliance with DOE criteria on explosive and nonreactor nuclear facility safety (DOE G 420.1-1).