

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

December 24, 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 24, 2004

Plutonium Facility (TA-55): Both the current (1996) and proposed (2002) authorization bases for TA-55 specify a safety-class passive ventilation confinement strategy, which is the subject of Board Recommendation 04-2. In April, the staff questioned the TA-55 analyses. Last Friday, LANL submitted to NNSA a re-analysis and concluded that the building leak path factor is 10 to 50 times higher than previously asserted and that neither passive nor active confinement modes can mitigate the potential off-site consequences to below evaluation guidelines. On Monday, NNSA directed LANL to immediately analyze other controls that can reduce the predicted consequences and to propose compensatory measures by January 7th. Timely resolution is needed to support continued operation.

There are number of other issues with the TA-55 1996-era authorization basis besides leak path factor, such as incomplete functional classification and no requirements for in-service inspections, storage container pedigree, and material-at-risk limits. Because of LANL resumption efforts and leak path factor re-analysis, the safety basis upgrade has been delayed another 6 to 8 months. A totally integrated upgrade with full resolution of leak path factor issues is preferred, but if not achievable in short order, a partial upgrade including compensatory measures for known weaknesses may be a better option.

Solid Waste Operations (TA-54): Risk reduction in TA-54 relies on shipping transuranic waste to WIPP, which stopped in October 2003 and is now not expected to resume until May 2005. The new safety basis, which is still being implemented, includes a material-at-risk (MAR) limit that is about 5.5 % above current inventory. It also requires that LANL ship the roughly 2,000 drums with the highest, most-dispersible inventory to WIPP by September 2004, which was missed. This is the Quick-to-WIPP Program. Earlier this year, LANL proposed October 2005 as the new Quick-to-WIPP completion target.

NNSA now believes that LANL and the WIPP contractor can realistically achieve only about 40 % of the intended WIPP shipments in FY-05 (i.e., 40 instead of 96 shipments). Furthermore, since May 2002 when the Quick-to-WIPP initiative began, TA-54 has received more waste, and the number of drums meeting the Quick-to-WIPP criteria has increased by about 800 to about 2,800 drums.

Further receipts by TA-54 will likely be constrained by the MAR limit until shipment rate improves. This has mission and safety impacts. NNSA is considering (1) allowing TA-55 to ship roughly 300 drums next month to TA-54 so that TA-55 can continue to operate, and then (2) constraining TA-55 direct-discard efforts that are underway in response to the Board's Recommendations 94-1/00-1 so that TA-54 can continue to operate. This course could adversely impact commitments made by the Secretary of Energy to the Board. The risk trade-offs of such a decision have not been evaluated.

High Efficiency Particulate Air (HEPA) Filters: TA-55 secured programmatic work in one room for about a week while investigating elevated fixed-head air samples. The likely cause is an infrequently used glove-box vent HEPA filter. On Monday, a transfer of transuranic caustic liquid waste from TA-55 to TA-50 RLWTF was stopped when a continuous air monitor alarmed in the TA-50 treatment room. No contamination was found, and nasal swipes of the four people in the room were negative. The alarm was attributed to a tank vent HEPA filter, which is being replaced. TA-50 and TA-55 are taking independent actions to address these issues. LANL would be well-served to pursue unified institutional action using guidance in the DOE nuclear air cleaning handbook (DOE-HDBK-1169-2003).