

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

January 14, 2005

MEMORANDUM FOR: J. Kent Fortenberry, Technical Director
FROM: T. D. Burns Jr. and C. H. Keilers, Jr.
SUBJECT: Los Alamos Report for Week Ending January 14, 2005

Management: LANL has committed to resuming all operations by January 31st; a few operations are likely to remain to be resumed. In particular, LANL now expects to pursue a DARHT hydrotest in March as an essential activity. LANL is also under intense pressure to complete the TA-18 Early Move Project by September. Increased resources and emphasis on these activities may decrease both federal and contractor attention and oversight of nuclear operations.

Plutonium Facility (TA-55): TA-55 appears to be under increasing operational stress as a result of vault space limitations, waste-pathway constraints, the expected influx from TA-18 to support the Early Move Project, the current 1996-era inadequate safety basis, and now the emergent leak path factor issue (site rep weekly 12/24/04). The situation will be aggravated if, in the interest of time, TA-18 ships material to TA-55 in packaging that does not meet TA-55 packaging standards.

Last Friday, LANL proposed and NNSA approved a set of interim compensatory measures to address the leak path factor issue and directed LANL to aggressively begin identifying potential solutions using a cost-benefit approach. The risks associated with continued operation, however, need to be better understood. The approved compensatory measures focus on mitigating the consequences of a Pu-238 lab room fire, which was the single accident that LANL evaluated. While this addressed one accident scenario, it did not address other known scenarios with potentially significant consequences (e.g., basement waste fire, vault fire). Consequently, the approved controls are probably necessary but may be insufficient to address the full spectrum of potential accidents that could occur in TA-55.

NNSA and LANL have options that could aggressively reduce those risks. For example, the poorly containerized Pu-238 combustible residues in the room that was contaminated in August 2003 may now constitute a more significant risk than NNSA and LANL previously recognized; in fact, they may dominate the risk among main-floor operations. Deliberately but expeditiously cleaning up this room, packaging the residues, and pyrolyzing them would reduce risk. On the current course, starting up additional pyrolysis capability and disposing of these residues could be a year away (site rep weekly 12/3/04). Similarly, TA-55 is nearly waste-logged (site rep weeklies 12/17/04, 12/24/04). Addressing the obstacles to TA-55 transferring waste, including resuming WIPP shipments from TA-54, would also reduce risk.

Finally, TA-55 continues to operate under a safety basis that has been increasingly shown to be outdated. The safety basis support for TA-18 Early Move and for TA-55 resuming pyrolysis operations will compete for resources required to fully update the TA-55 safety basis. It may be advisable for NNSA and LANL to consider a partial update, together with an interim safety basis that specifically addresses the leak path factor issue.

Readiness Assessments: LANL needs to improve its management self-assessment (MSA) process. The lab readiness assessment (LRA) of TA-54 Area G safety basis implementation started and prematurely stopped this week, indicating a weak MSA; preliminary estimates are that it will be several more months before this safety basis is implemented and verified. An LRA for the Radiography Facility (TA-8-23) was completed this week, but the findings indicate another weak MSA.