

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

August 5, 2005

MEMORANDUM FOR: J. Kent Fortenberry, Technical Director
FROM: C. H. Keilers, Jr.
SUBJECT: Los Alamos Report for Week Ending August 5, 2005

Am-241 Contamination Event: In response to the inadvertent contamination release reported last week, LANL has addressed off-site contamination and has implemented adequate radiological controls in the Sigma Complex (TA-3-66). Contamination spread occurred via contact and not airborne suspension; with each contact, the levels transmitted dropped one-to-two orders of magnitude. Contamination beyond secondary-contact is very low and likely non-detectable by standard techniques.

Within Sigma, LANL is controlling access to contaminated areas, which include two offices, a lab room, and a shop. LANL has put in place continuous air monitoring in selected areas, monitoring of personnel upon building exit, and daily surveys of high-traffic areas, all of which indicate the controls are effective. Whole body counts on the primary individual involved indicate a low-level uptake; more definitive bioassay results should be available in a few weeks. LANL is investigating the event.

Waste Operations: LANL's transuranic waste shipments to WIPP are the principal means for LANL to reduce risks associated with the lab's highest consequence nuclear accident postulated in approved safety analyses (site rep weekly 7/15/05). Since April when shipments resumed, LANL has made 17 shipments for a total of 347 drums – of which around 200 (60 %) are from the higher-activity Quick-to-WIPP set – and the shipment rate has doubled from about 1 per 8 days to 1 per 4 days on average.

This has happened in spite of operational issues, such as poor safety basis implementation and inconsistent disciplined operations. For example, the Area G safety basis was suppose to be implemented in Summer 2004; Area G prematurely terminated a verification assessment on safety basis implementation in January 2005, and it has never been completed. There are also indicators of issues in the LANL resumption review report for waste operations, dated 1/10/05 (site rep weekly 1/21/05). In light of LANL reports of new evidence of problems, the LASO Manager has requested the LANL Director to justify continued operation of the TA-50/54 waste facilities by next Thursday (8/11/05).

Plutonium Facility (TA-55): Last Thursday (7/28/05), NNSA approved a set of interim technical safety requirements (ITSRs) for TA-55 that expire in one year. The ITSRS are intended to consolidate controls from: unreviewed safety questions against the currently approved 1996 safety basis, hazard analyses from the proposed 2002 safety basis upgrade, and compensatory measures approved in February to address the passive ventilation confinement vulnerability (site rep weekly 7/15/05). Key controls are to be implemented and verified within 90 days, with the remainder within 11 months. NNSA and LANL expect few TSR changes will be required when the full safety basis upgrade is finished in about a year.

LASO is reviewing the cost-benefit analysis for ventilation upgrades and remains skeptical of the cost effectiveness of the currently understood full upgrade to safety-class. LASO questions whether the system, as-is, even meets safety-significant requirements and has directed LANL this month to recommend prioritized low-cost upgrades that will improve ventilation reliability and reasonably reduce risk. LASO also tasked LANL to propose improvements to fire suppression and to high-risk glove-boxes within the next few months and to replace Pu-238 glove-box HEPA filters within the next year.

Authorization Basis: LANL is no longer pursuing the use of the TA-55-185 shed to store mixed-oxide fuel shipping containers and the temporary use of the TA-54 Decontamination and Volume Reduction System (DVRS) to repackage transuranic waste drums (site rep reports 6/24/05, 5/27/05, 6/11/04).