

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

July 21, 2006

MEMORANDUM FOR: J. Kent Fortenberry, Technical Director

FROM: C. H. Keilers, Jr.

SUBJECT: Los Alamos Report for Week Ending July 21, 2006

Chemistry and Metallurgy Research Facility Replacement Project (CMRR): The project intends to use an interim seismic ground motion spectrum to support structure and component design for the next few months while the site-wide probabilistic seismic hazard analysis (PSHA) is finalized. Last month's staff review found that the PSHA and CMRR site characterization efforts were using different inputs (e.g., shear wave velocities, damping curves). While the project believes that the interim spectrum is conservative, timely resolution of differences would reduce programmatic risk.

Plutonium Facility (TA-55): TA-55 has concluded that they need to improve their glove-box glove program, based on the rate of glove failures and the informality of current glove change-out criteria.

TA-55 is also close to full implementation of the interim technical safety requirements (iTSRs), with a few exceptions that will require NNSA approval; lab verification is scheduled for early August. The key exceptions involve longstanding issues: (1) highly loaded cans of Pu-238 non-hydrogenous residues are still in the room that was contaminated in Aug 2003; (2) non-robust containers are still in use in the vault. TA-55 recently moved their higher-loaded cans of Pu-238 hydrogenous residues into a glove-box line and is still requiring respirators for vault work. Full resolution warrants priority.

Waste Operations: This week, LANL resumed characterization of transuranic debris waste and made two shipments to WIPP, consisting of non-debris waste (i.e., OSRP sources). Separately, LANL has withdrawn the proposed RLWTF safety basis submitted last September because of concerns with the submittal's adequacy; RLWTF operates now under a 1995 safety basis and 1999 iTSRs.

LANL is struggling with many issues involving transuranic waste storage, repackaging, and shipment: the fabric on safety-class storage domes is ripped; the strength of safety-class banding is questionable; some of the +20,000 safety-class drums above ground have excessive weight (i.e., greater than 1,000 lb); many of the drums will need to be repackaged, but the single repackaging facility – WCRRF – is several miles from the drums and is not authorized to repackage the roughly 300 drums that exceed 56 Ci because of seismic concerns; the single shipping facility – RANT – is not authorized to load a TRUPACT above about one-fifth of the TRUPACT radioactivity limit, also because of seismic issues.

At this point, neither NNSA nor LANL seems to understand and to be considering the relative risks of alternatives to address these issues – particularly, whether it is appropriate to take actions to address a seismic vulnerability that may also slow shipments. The risk picture is complicated because the half-dozen relevant safety bases used assumptions that differ, sometimes by an order of magnitude or more; however, they all seem to indicate that the risk is high until most drums are shipped. With a concerted effort, it ought to be possible to safely and compliantly ship the drums within a few years.

Radiological Facilities: LANL has determined that a small Pu source was brought into a radiological facility, in conflict with NNSA conditions of approval for that facility, and that the facility had lost configuration control of its material-at-risk tracking system. It's positive that these issues are being found, but they are not likely limited to this facility; as evident from last year's two Type B investigations, such facilities receive little oversight (site rep weekly 2/3/06, 10/14/05, 8/12/05).