

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

April 27, 2007

MEMORANDUM FOR: J. Kent Fortenberry, Technical Director
FROM: B. Broderick and C. H. Keilers, Jr.
SUBJECT: Los Alamos Report for Week Ending April 27, 2007

Criticality Safety: In response to the issues reported last week, the Plutonium Facility (TA-55) intends to work with the LANL criticality safety group and reconcile known discrepancies between operations and their criticality safety postings before the criticality safety evaluations are updated, which is scheduled during the next three years; this is positive (site rep weekly 12/22/06).

Radioactive and Nondestructive Testing (RANT) Facility: Current material inventory restrictions limit the capacity and packing efficiency of TRUPACT container loading operations at RANT (see site rep weeklies 7/21/06 and 3/18/05). To ease these restrictions and expedite the high activity transuranic waste disposition campaign, the laboratory has proposed a strategy to increase inventory limits inside the building almost 8 fold, up to 1840 Pu-239 equivalent curies. Short term, the strategy calls for development and NNSA approval of page changes to the existing safety basis that re-analyze accidents using new assumptions and credit new administrative controls, including combustible loading limits and vehicle restrictions. Longer term (i.e. by end FY07), the lab plans to use the new analysis to develop a safety basis that is fully compliant with the Nuclear Safety Management Rule. No major modifications or upgrades to existing engineered controls are proposed by this strategy.

Seismic Criteria: The updated LANL Probabilistic Seismic Hazards Analysis (PSHA) is due out in May and is expected to conclude that seismic hazards at the site are higher than previously believed; e.g. roughly 50% increase in PC-3 seismic criteria (see site rep weekly 12/22/06). Prior to PSHA issuance, LANL plans to submit a site-wide justification for continued operations (JCO) to keep running until prioritized facility-specific structural analyses can be prepared to identify vulnerabilities and aid development of JCOs for individual facilities, as needed. Impacts to new design and construction projects in various phases of development have yet to be determined.

Chemistry and Metallurgical Research Building Replacement Project (CMRR): The CMRR safety basis subcontractor has submitted to LANL an initial draft of the CMRR preliminary documented safety analysis (PDSA) that is largely reflective of the current design. The draft PDSA analyzes 11 design basis accidents and provides the preliminary basis for functional classifications and requirements for credited safety controls. The project asserts that it is committed to maintaining close integration between the design and safety analysis efforts. This will be key to ensuring controls are designed with appropriate functional attributes and pedigree, thus preventing costly retrofits.

Nuclear Material Stabilization: Last Friday, LANL management approved a comprehensive nuclear material packaging and storage plan for TA-55 that is intended to address a series of related corrective actions dating from the December 2005 vault contamination and the August 2003 Pu-238 uptakes. The objective is to repackage all non-standard items by the end of 2010, eliminating associated risks. The plan describes the progress made, such as: • the number of non-standard containers has been reduced by a third over 5 years; • the risk to workers due to non-standard containers was reduced by a third between May 2004 and Sep 2006; • 951 items have entered the WIPP-disposal pipeline since FY03. The plan retains a high dependence on Area G receiving about 7.5 kCi/yr during the next four years. It addresses most but not all of LANL's nuclear material (e.g., CMR has ~1,000 containers that are out of scope). LANL expects to establish a site-wide standard in conjunction with DOE actions in response to Board Recommendation 05-1 (site rep weekly 12/29/06).