

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

January 5, 2007

MEMORANDUM FOR: J. Kent Fortenberry, Technical Director
FROM: B. Broderick and C. H. Keilers, Jr.
SUBJECT: Los Alamos Report for Week Ending January 5, 2007

Federal Oversight: An NNSA Chief Defense Nuclear Safety (CDNS) team is on site next week to examine the NNSA Site Office oversight pilot and the Contractor Assurance System (CAS) interface.

Pajarito Laboratory (TA-18): This Spring, LANL plans to propose downgrading TA-18 from a Hazard Category 2 (HC-2) nuclear facility to a radiological facility, based on segmentation of the remaining radioactive inventory. Specifically, 3 transportainers will be used to store large pieces of natural and depleted uranium that are packaged for shipment to the Nevada Test Site; they would constitute 3 segments; the remainder of TA-18 would constitute a fourth segment. TA-18 would then be managed in a surveillance and maintenance mode until disposition plans are finalized.

Chemistry and Metallurgy Research Facility Replacement (CMRR) Project: The LANL subcontractor responsible for the design and construction of the Radiological Laboratory and Utility Office Building (RLUOB) submitted the final design to LANL on January 2nd; LANL intends to complete its review of the package this month and expects to approve it, following comment resolution, by mid-March. The RLUOB, a radiological facility limited to about 0.5 Ci inventory, is expected to have about 19,500 ft² of laboratory space, provide offices for 350 personnel, and contain a consolidated training facility and incident response center. Project management is briefing NNSA headquarters next week on the status and direction for the separate CMRR HC-2 nuclear facility.

Transuranic (TRU) Waste Operations: Area G currently has about 20,000 TRU waste containers with 131 kCi above ground (including ~15 kCi OSRP sources); there is a comparable inventory below ground, plus TA-55 waste receipts, that are currently all within the scope of the Area G closure effort.

The 2003 Area G safety basis identifies about 3 dozen postulated accident scenarios with unmitigated off-site consequences ranging from 1 to 1,800 Rem CEDE. A third of these scenarios involve small numbers of high-activity drums that currently have no approved disposition path (site rep weekly 12/8/06). The remainder involve large numbers of drums of average activity; the average activity has been increasing with time and now stands at about 6 Ci/drum. LANL expects to reassess the risks and submit an updated Area G safety basis to NNSA in the coming months.

Area G has few creditable engineered safety features; therefore, to reduce risk, NNSA advocated in 2003 expeditiously shipping higher-activity drums to WIPP. Since then, LANL has shipped about 5,300 drums (22 kCi), predominately with average activity; about 3,000 drums (18 kCi) were shipped last year; Area G has also continued to receive 300 or more drums per year from TA-55. The rate-limiting steps are repackaging drums to remove WIPP prohibited items and shipping drums; both are running at roughly 200 drums per month. There were short periods during the last year, when LANL was able to repack and ship waste at rates twice or more the average; however, these were not sustainable.

At current rates, these risks will persist for many years. Assuming the drum rejection, certification, and shipping rates experienced during the last 15 months, it will take roughly 8 years to certify and ship the current aboveground inventory (i.e., 2015) and another 8 years to address the belowground and TA-55 waste inventories (i.e., 2023). Improving on the rates will require a shared understanding of the risks, more appropriate prioritization, and a more concerted effort by the principal parties – NNSA, DOE-Environmental Management, LANL, and the WIPP contractor – than applied in the past.