DEFENSE NUCLEAR FACILITIES SAFETY BOARD

July 4, 2008

MEMORANDUM FOR: T. Dwyer, Technical Director
FROM: B. Broderick and R.T. Davis
SUBJECT: Los Alamos Report for Week Ending July 4, 2008

Plutonium Facility: While attempting to open a taped slip-lid container using a screwdriver, an operator inadvertently punctured the glove-box glove and an interior glove. The screwdriver did not lacerate the operator's hand but resulted in 15,000 dpm alpha contamination on his innermost cotton glove liner. Subsequent discussions with the operator indicated that the taped container did not have tabs (as expected) to facilitate removing the tape nor was the screwdriver the appropriate tool for tape removal. The operator was also not aware of previous similar incidents (e.g., the January 2007 contaminated puncture wounds) or the associated corrective actions. Based on this information, facility management met with first line managers to discuss methods of ensuring that lessons learned and corrective actions are adequately disseminated down to the worker level. In addition, the facility is using this event to re-emphasize the use of appropriate tools and the need to pause work when unexpected conditions are identified (site rep weeklies 1/19/07, 1/12/07).

Last week, LANL submitted to NNSA an updated path forward on Board Recommendation 2004-2. The proposed approach is supported by an external independent review performed by URS. The submitted plan identifies a series of analyses and upgrades intended to be executed over the next 5 years to achieve safety class active confinement ventilation, safety class fire suppression (credited for operational vice seismically-induced fires), and inerted environments for high-risk glove-boxes. LANL asserts that these collective upgrades should effectively reduce mitigated off-site doses to well below the DOE evaluation guideline. This would represent a significant improvement in the safety posture of the Plutonium Facility; however, the funding sources for many key upgrades are currently identified as 'to be determined.' The ultimate recommended end state in the external URS report is the addition of robust safety class sand filters. The current submittal defers a decision on sand filters and does not specify the time frame for a decision on whether they will be pursued.

Chemistry and Metallurgy Research Building (CMR): Last Friday, CMR management declared a Potential Inadequacy in the Safety Analysis based on a newly identified failure mode for the facility vault during a seismic event. The current safety basis credits the vault structure to prevent the release of nuclear material during bounding accidents, including a seismic event. Hence, material in the vault is excluded from counting against the facility material-at-risk (MAR) limit. During development of the new Documented Safety Analysis, safety basis analysts identified that failure of one of the CMR wings could potentially collapse the vault roof structure. In response, CMR management issued a standing order requiring the vault inventory be included as part of the overall facility MAR limit. This week, CMR management declared this issue an Unreviewed Safety Question and is developing a Justification for Continued Operations (JCO) for NNSA approval. The JCO will likely formalize vault inventory inclusion in facility MAR calculations.

Federal Oversight: As a part of the corrective actions from the Chief of Defense Nuclear Safety review in 2007, site office personnel held the first series of Operational Awareness briefings this week. These briefings, which will be held quarterly, provide management with a status of key on-going initiatives (e.g. Formality of Operations) and nuclear facility conditions. They also provide field personnel with an additional forum to surface issues that warrant management attention.