DEFENSE NUCLEAR FACILITIES SAFETY BOARD

May 2, 2008

MEMORANDUM FOR: J. Kent Fortenberry, Technical Director
FROM: B. Broderick
SUBJECT: Los Alamos Report for Week Ending May 2, 2008

Plutonium Facility: During furnace operations this week, the facility experienced another glove-box thermal alarm. After assessing the situation, personnel re-entered the room and de-energized the 2 operating furnaces. The Fire Department responded and swept the area. No material was released and no equipment was damaged during this event (site rep weeklies 4/25/08, 4/4/08, 3/28/08).

The alarm occurred in the same glove-box line as the over-temperature event on March 27th. At the time of the alarm, only two of three in-line furnaces were running and they appeared to be properly configured and operating as expected. There was no obvious cause for the glove-box temperature to rise above the 190° F alarm set point. The facility has not yet determined if the alarm was valid.

In response to this event, furnace operations in this glove-box line have been suspended. New thermal detectors will be installed in this line and the removed detectors will be function tested to determine whether malfunction or drift could have caused a spurious alarm. Prior to reintroducing material, the glove-box line will be instrumented with temperature sensors and controlled diagnostic runs will be performed to better characterize the temperature profile inside the line during furnace operations.

Federal Oversight: The NNSA site office has developed and continues to refine a set of metrics to gauge and trend performance. At a high-level, these measures score performance in field oversight activities, internal issues management, contractual incentive evaluation, personnel training and qualification, and staffing. Overall, the availability of quantified performance data, which is also visible to NNSA HQ, appears to be further focusing management attention into the most critical areas.

The latest data indicates that meeting staffing goals continues to be a challenge, in part due to high turnover. Currently only 50% of required personnel are trained and qualified, although over 90% of unqualified personnel are meeting or exceeding their qualification schedule which should drive steady improvement. Assessment performance appears to represent the area most in need of improvement. Through March, the site office had completed only 8 of the 20 independent assessments that had been scheduled. Additionally, the site office has completed and documented only 36% of its commitments to observe and shadow priority contractor assessments. These shadowing activities are vital for judging the effectiveness and maturity of LANL's Contractor Assurance System and for maintaining an appropriate level of operational awareness. In response to this persistent negative trend, site office management has noticeably increased emphasis on timely completion of assessment activities.

Chemistry and Metallurgy Research Building (CMR): A CMR criticality safety officer (CSO) identified a potential infraction this week involving neptunium stored in a Wing 9 floor hole location. The criticality safety posting for this location did not identify neptunium-specific mass limits and the quantity of neptunium in the floor hole exceeded the posted limits for other isotopes. Eventually, an approved memorandum from the Nuclear Criticality Safety Group was located that provided a neptunium mass limit for this location. The material in the floor hole complied with this limit and a determination was made in consultation with the NCSG that there was no infraction. The CSO has updated the posting to include the neptunium limit and CMR management is conducting an extent of condition review to identify any other areas where postings do not explicitly cover exotic isotopes.