

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

June 13, 2008

MEMORANDUM FOR: T. J. Dwyer, Technical Director
FROM: B. Broderick and R.T. Davis
SUBJECT: Los Alamos Report for Week Ending June 13, 2008

Board members Bader and Winokur and staff members Minnema, Plaue, and Tontodonato were onsite this week.

High Explosive Operations: On Wednesday, programmatic activities at TA-39 caused a wildland fire that required partial activation of the Emergency Operations Center to coordinate a fire fighting response. The fire was controlled and response activities concluded Thursday evening. Approximately 12 acres were burned. No nuclear or radiological facilities were directly threatened.

The fire resulted from performance testing of a powder gun that will ultimately be fielded at the Nevada Test Site to support the dynamic plutonium experiments program. Forensic investigation of the exact cause of the failure that initiated the fire is ongoing. However, preliminary information suggests that an explosively-driven valve was breached during the test. The resultant loss of system containment allowed hot reaction-product gases to vent from the gun assembly, which ignited nearby vegetation. Firing site personnel alerted the Fire Department and attempted to suppress the incipient fire until wind conditions caused the fire to grow beyond their capacity to safely respond.

During the pre-shot review, this gun test was deemed to be 'contained' and was therefore allowed to be performed under conditions that would not have been allowed for an uncontained shot (i.e. high winds, proximate vegetative fuel loading, and lack of pre-staged fire response apparatus). Development of more conservative criteria for what constitute contained shots appears warranted.

Transuranic Waste Operations: LANL management has decided to re-staff and re-perform the recently executed laboratory readiness assessment for remote drum venting operations at Area G. This decision was based on concerns about the adequacy of the initial review and lessons learned from the Plutonium Facility interim radiography readiness review process (site rep weekly 6/6/08).

Weapons Engineering Tritium Facility (WETF): NNSA has approved hazard analysis and TSR changes to support a series of experiments that will expose gram-quantity plutonium coupons to tritium gas at WETF. The plutonium samples will be enclosed in a leak-tight test cell designed to interface with the WETF tritium gas handling system through a filtered manifold. Rupture disks are provided to ensure the test cell does not experience pressures exceeding its capacity. In addition, a protective fixture is provided for the test cell assembly to prevent mechanical failures resulting from drops during transit. New TSR controls to support these experiments include a facility MAR limit of 24 g of weapons-grade plutonium where 8 g are allowed in the process line with the balance staged in robust containers. The test cell assembly and its protective fixture are also credited as design features.