

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

January 28, 2011

MEMORANDUM FOR: T. J. Dwyer, Technical Director
FROM: B.P. Broderick and R.T. Davis
SUBJECT: Los Alamos Report for Week Ending January 28, 2011

Electrical Safety: This week, Plutonium Facility management declared a near miss based on work performed in close proximity to 13,200 volt energized electrical lines without appropriate work control documentation or applicable hazardous energy controls. As a part of the Nuclear Materials Safeguards and Security Upgrades Project (NMSSUP), work was planned to install conduit, pull lines and tie into this 13,200 line. Two Integrated Work Documents (IWDs) were developed for these activities. The first IWD hazard analysis did not include work on or near energized electrical lines. In December, workers performed core drilling as part of the conduit installation within a few inches of the energized line using the first IWD. This activity was conducted successfully with no injury to workers or damage to the electrical line. A pre-job brief was conducted; however, workers noted that the IWD requirements were not discussed during this brief. In preparation for conducting the additional work under the second IWD, LANL personnel recognized that the drilling had occurred and notified Plutonium Facility management.

As a result of this near miss, LANL suspended NMSSUP construction activities while the requirements for conduct of pre-job briefs and actions needed if hazards and work controls are not appropriately included in IWDs were clearly communicated to project personnel and subcontractors. LANL is releasing specific construction activities following a review of work scope and work control documents. LANL also continues to investigate this event to develop lessons learned and to determine whether additional corrective actions are needed.

Transuranic Waste Operations: Transuranic waste drums in general waste storage arrays at Area G are restricted to less than 200 fissile gram equivalents by criticality safety limits. Drums that exceed this limit are segregated and stored in special arrays whose geometry is controlled to ensure criticality safety. Generator facility data is used to determine a drum's fissile gram equivalents until a valid assay is obtained by Central Characterization Project (CCP) personnel at Area G. Based on a 2007 technical study, the fissile gram equivalents value used for criticality safety purposes is the CCP assay result plus two times the uncertainty from counting statistics. This differs from the assay result plus the total measurement uncertainty used to determine whether a drum's fissile gram equivalents comply with the Waste Isolation Pilot Plant (WIPP) waste acceptance criteria. When a drum's fissile gram equivalents using the total measurement uncertainty exceed 200 g but its value using two times counting uncertainty does not, a Non-Conformance Report tag is applied to the drum and it is returned to a general waste array rather than a specially controlled array. As a result of these practices, there are currently about 200 drums in general waste storage arrays with NCR tags that identify them as drums with high fissile gram equivalents. Last week, the NNSA site office issued a letter to the contractor questioning the treatment of these drums.

This week, Area G personnel discovered that the configuration of a segregated array of high fissile gram equivalent drums violated the geometry restrictions specified by criticality safety limits. In response, facility management restricted access to the area and entered the criticality safety infraction process. Operations personnel and criticality safety engineers are coordinating to develop a recovery plan to address the infraction.