DEFENSE NUCLEAR FACILITIES SAFETY BOARD

January 21, 2011

MEMORANDUM FOR: T. J. Dwyer, Technical Director
FROM: B.P. Broderick and R.T. Davis
SUBJECT: Los Alamos Report for Week Ending January 21, 2011

Plutonium Facility - PISA: Several months ago, the Plutonium Facility received a shipment of Pu-238 in two containers from Lawrence Livermore National Laboratory. The material was packaged in nested inner and outer welded containers that met the specifications of DOE-STD-3013, but the Pu-238 inside was not stabilized in the manner required by the standard. The Plutonium Facility safety basis does not explicitly analyze the hazards associated with Pu-238 stored in this type of welded container configuration. As a result, Plutonium Facility management declared a potential inadequacy of the safety analysis (PISA).

In response, Plutonium Facility personnel are evaluating the two containers to determine whether they are appropriate for multi-year storage of Pu-238 until the material is needed to support programmatic activities. Also, personnel are assessing ways to strengthen the process used to review incoming shipments to ensure that received material meets Plutonium Facility requirements.

Weapons Engineering Tritium Facility (WETF): This week, the site office approved the inputs, methods and assumptions that will be used for the Documented Safety Analysis (DSA) update planned for WETF. Notably, LANL plans to reduce the material-at-risk limit for WETF to less than 250 g versus the current limit of 400 g. In September 2010, LANL submitted a resource loaded schedule for the DSA update that identifies a May 2012 target date for completion of this update.

Plutonium Facility – Safety Basis: This week, LANL submitted a revision to the Technical Safety Requirements (TSR) associated with the 2008 DSA to resolve site office comments on the limiting conditions for operation for the fire suppression system. This revision of the TSR requires that both the electric and diesel fire pumps be operable. LANL has committed to implement the TSRs associated with the 2008 DSA within 90 days of site office approval.

Next week, Plutonium Facility personnel plan to take an outage to install seismic shutdown switches that will isolate power to non-safety-related laboratory floor circuits on indications of a seismic event. Post modification testing will either occur as a part of this outage or during a subsequent outage. LANL plans to have this system operational by the end of February. Safety basis credit for this system will be included in the May 2011 safety basis update.

Plutonium Facility – Seismic Safety: The site office forwarded the conceptual design for the fire suppression system upgrades required to meet performance category-3 (PC-3) seismic requirements to NNSA Headquarters this week. This design is identified as a deliverable for Recommendation 2009-2 and, when implemented, will help improve facility safety for the challenging post-seismic fire accident scenario. The LANL analysis concludes that the following system upgrades are required to meet PC-3 requirements: for the main floor, a lateral support is required two-thirds down each branch line and an end support is needed; for the basement, axial supports are required for standpipes and lateral supports are needed for some piping sections and; for the pump houses, additional supports are required for supply lines.