

## DEFENSE NUCLEAR FACILITIES SAFETY BOARD

January 7, 2011

**MEMORANDUM FOR:** T. J. Dwyer, Technical Director  
**FROM:** B.P. Broderick and R.T. Davis  
**SUBJECT:** Los Alamos Report for Week Ending January 7, 2011

**Plutonium Facility – Safety Basis:** LANL continues to pursue implementation of Technical Safety Requirements (TSRs) associated with the Documented Safety Analysis (DSA) that was approved in December 2008. This safety basis represented the first major update to the Plutonium Facility safety basis in a decade. While most TSR controls have been implemented, upgrades and improvements to the fire suppression system and implementation of material-at-risk (MAR) controls have extended the implementation of this safety basis. Fire suppression system upgrades were completed last year, including installation of additional fire water risers and relocation/installation of sprinklers to resolve coverage issues. LANL also continues efforts to implement a new MAR tracking software system that will support TSR MAR controls. The Plutonium Facility is the first facility to implement this software. LANL plans to use this software at other nuclear facilities.

In early-November, LANL submitted a revision to the 2008 DSA to resolve site office comments on the fire suppression system limiting conditions for operation and to accommodate MAR associated with legacy confinement vessels stored on an asphalt pad outside the Plutonium Facility. LANL committed to complete implementation within 90 days of site office approval of this revision. The site office continues to review this document.

In December 2010, LANL submitted an annual update to the Plutonium Facility DSA. The 2010 DSA incorporates routine corrections/additions and inclusion of facility improvements and Unreviewed Safety Questions that have been identified since the DSA that was submitted in 2009. No site office action was taken on the 2009 DSA. In the submittal, LANL notes that a significant revision to the safety basis is planned for May 2011 to reanalyze seismic accident scenarios by “performing more thorough, realistic analyses.”

**Plutonium Facility – PISA:** This week, Plutonium Facility management declared a PISA related to two types of safety class controls used to contain <sup>238</sup>Pu-enriched Heat Source Plutonium (HS-Pu). Certain completed heat source assemblies and robust containers for storing bulk HS-Pu oxide are credited in the Plutonium Facility DSA to survive the most severe accident scenarios postulated for the facility. Because these safety class assemblies and containers are credited to survive bounding accident conditions without releasing their contents, the HS-Pu they contain does not count toward facility MAR limits.

Facility personnel recently discovered that analyzed temperatures for glovebox fires exceed the temperatures that the safety class assemblies and containers are credited to survive. This discovery resulted in the PISA declaration. In response, facility management instituted a compensatory measure to begin counting the HS-Pu material inside the safety class assemblies and containers against glovebox MAR limits and to ensure all affected gloveboxes contained less than their allowed limits. Longer term, facility personnel intend to reevaluate the safety basis approach for analyzing and crediting these safety class controls.