

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

November 19, 2010

MEMORANDUM FOR: T. J. Dwyer, Technical Director
FROM: B.P. Broderick and R.T. Davis
SUBJECT: Los Alamos Report for Week Ending November 19, 2010

Plutonium Facility: This week, Plutonium Facility management declared a potential inadequacy of the safety analysis (PISA) related to ^{238}Pu -enriched heat source plutonium (HS-Pu) items. This PISA involved the discovery of issues with several different classes of sealed HS-Pu items in the facility.

In mid-October, the Plutonium Facility cognizant system engineer for container systems identified a family of sealed HS-Pu items used as calibration standards that presented a potential over-pressurization concern. Although subsequent analysis demonstrated that pressures inside these standards would not exceed acceptable limits, an extent of condition review identified roughly 100 other sealed HS-Pu items that required evaluation for over-pressurization hazards. By this week, walkdown evaluations had discovered several sealed items that presented potential over-pressurization hazards, including one item that appeared to be slightly bulged. These discoveries prompted the PISA and immediate actions to place affected items in a safe configuration either by overpacking them in credited containers with a filtered vent or by introducing them into gloveboxes. LANL personnel are also taking action to evaluate the safety of several sealed HS-Pu calibration sources located at Area G and CMR.

In parallel with the walkdown evaluations of the roughly 100 suspect items, the cognizant system engineer was performing additional analysis on a type of encapsulated heat source that is credited as safety class in the Plutonium Facility DSA. This safety class encapsulated heat source is required to maintain confinement when subjected to the thermal insults associated with an evaluation basis facility fire. The new analysis indicates that units passed a certain age would not meet this performance criterion due to internal pressure increases associated with helium buildup from years of alpha decay. In response to this new information that is also covered under the PISA, facility personnel are locating units older than the threshold and ensuring they are appropriately overpacked (site rep weekly 10/15/10).

Readiness: Last week, the site office concurred with a revision to LANL procedure P115.0, *Verification of Readiness to Start Up or Restart LANL Nuclear Facilities, Activities, and Operations*. This revision incorporates the changes included in DOE Order 425.1D, which was added to the contract earlier this year. The site office provided six specific comments that will be incorporated into the procedure during the next update (within the next year). The NNSA site office plans to revise its startup procedure in the near future to align with the revised LANL procedure. Implementation of DOE Order 425.1D at LANL is required to be complete (including the revised site office procedure) by January 15, 2011. This week, representatives from NNSA Headquarters and the DOE Office of Health, Safety and Security were onsite to discuss LANL readiness and startup activities. Because of issues identified in this area (notably, the 2009 CDNS biennial review), compensatory measures were identified by NNSA Headquarters that require NA-17 to review and comment on readiness and startup decisions until a successful independent review is completed, either during the next CDNS biennial review or an independent follow-up review.

Chemistry and Metallurgy Research Building (CMR): The review team is finalizing the report documenting completion of the Implementation Verification Review for the new set of TSR controls that support post-2010 operation of CMR. The review identified eight pre-implementation findings and one post-implementation finding. Facility personnel have closed all but one pre-implementation finding.