

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

September 13, 2013

MEMORANDUM FOR: S.A. Stokes, Acting Technical Director

FROM: R.T. Davis and R.K. Verhaagen

SUBJECT: Los Alamos Report for Week Ending September 13, 2013

Criticality Safety: LANL continues to work on resumption activities for the paused fissile material operations in the Plutonium Facility. A war-room has been set up to manage and track the resumption activities, and a senior LANL manager has been temporarily assigned to manage this effort. The resumption process continues to evolve, and as such, a revision to the Notice, *Resumption Release Process for Programmatic Activities at PF-4*, was recently issued. This notice was released to update the requirements for the resumption process and to identify compensatory actions being taken to address material management issues.

During reviews of objective evidence packages for resumption of programmatic operations, the site reps identified multiple issues with the proposed procedures, Criticality Safety Evaluations (CSE), and Criticality Safety Limit Approvals (CSLA). These issues included: 1) a procedure did not specify any criticality controls and did not reference the CSLA; 2) a CSE and its associated CSLA specified different controls; and 3) a CSLA was developed without an evaluation. Additionally, recent assessments and reviews have identified issues with the quality of existing CSEs. All of these issues are being addressed and the resumption process is being refined to ensure evaluations are of sufficient quality and that the controls from the CSEs adequately flow down into the CSLAs, postings, and procedures.

Area G – Safety Basis: Area G personnel are scheduled to implement the new Basis for Interim Operation and associated Technical Safety Requirements (TSRs) by the end of this month. As part of the implementation, inventory tracking was recently transitioned from a locally maintained database to the LANL Waste Compliance and Tracking System. This system will be used to perform material at risk surveillances as required by the TSRs. Area G personnel have completed training on the new safety basis. Field implementation of defined areas, liquid berms, and markings has also been completed in accordance with the TSRs. LANL will perform an Implementation Verification Review prior to declaring the new safety basis implemented. Area G management will review and release individual work activities following safety basis implementation.

Plutonium Facility – Safety Basis: LANL recently submitted an Evaluation of the Safety of the Situation (ESS) to address General Purpose Heat Source (GPHS) items that were found to be bulging. In April, Plutonium Facility workers identified two bulging GPHS items and subsequently identified five additional bulging items. The encapsulated GPHS items are credited in the safety basis as safety-class (damage ratio of zero) for heat source-plutonium. When discovered, facility management declared the safety-class feature inoperable and fully counted the materials against facility material at risk limits (damage ratio of one). LANL subsequently concluded the issue represented an Unreviewed Safety Question. LANL testing and evaluation referenced in the ESS concludes that the bulging is likely caused by helium release during storage and will not result in rupture of the items. The ESS also identifies compensatory measures to 1) continue to apply a damage ratio of one for degraded GPHS items, 2) use safety class containers to overpack these items when outside a glovebox, and 3) store no more than two GPHS items together. Additional testing and analysis is planned to better characterize the bulging mechanism.