

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

April 13, 2012

MEMORANDUM FOR: T. J. Dwyer, Technical Director
FROM: B.P. Broderick and R.T. Davis
SUBJECT: Los Alamos Report for Week Ending April 13, 2012

Staff member R. Verhaagen was onsite this week.

Plutonium Facility – Fire Suppression System: This week, LANL began construction on upgrades to a portion of the fire suppression system sprinkler piping to meet Performance Category-3 (PC-3) seismic requirements. In response to Board Recommendation 2009-2, NNSA developed a Project Execution Plan (PEP) to complete a set of Plutonium Facility upgrades that ensure mitigated offsite dose consequences do not challenge the DOE Evaluation Guideline. The fire suppression system upgrades are a key component of this effort and are scheduled to be complete in Fiscal Year 2013. The initial upgrades that have started will help LANL validate cost estimates while designs to upgrade other portions of the system continue development. LANL is also developing design packages and upgrade plans for electrical components that will be used to support the safety class/PC-3 active confinement ventilation capability consistent with the PEP submitted to the Board.

Plutonium Facility – Safety Basis: As reported last week, Plutonium Facility personnel recently discovered a material storage safe equipped with rolling casters that was required by its Criticality Safety Limit Approval to remain upright and in position during a seismic event. In accordance with DOE-STD-3007, the safety function of the safe to remain upright in a seismic event has been deemed sufficiently important to criticality safety to be elevated to the TSR-level in the next annual update of the Plutonium Facility safety basis. Facility personnel have identified three other safes that are currently in-service and storing material that have similarly important seismic requirements that are not yet implemented. This week, Plutonium Facility personnel determined that the situation represented by these safes is not explicitly covered under existing supplementary safety basis documents that address known seismic vulnerabilities for safety class and safety significant controls. In response, Plutonium Facility management declared a Potential Inadequacy of the Safety Analysis and implemented compensatory measures to physically restrain the movement of one safe and to prohibit metal storage in the other safes to limit the reactivity of any configuration that could be caused by physical rearrangement of stored materials due to seismic upsets.

Chemistry and Metallurgy Research (CMR) Building: LANL identified a potential criticality safety over-mass condition for a transuranic waste drum at CMR this week. The waste drum was loaded and stored at the facility several years ago with plutonium content recorded by the generator that exceeds the criticality safety limit. During preparations to ship drums to Area G for disposition, facility personnel noted that the generator data for the drum in question identified a plutonium content that exceeded the WIPP waste acceptance criteria but did not initially recognize the potential criticality safety concern. Non-Destructive Assay (NDA) at CMR to evaluate the drum contents indicated significantly lower plutonium content than the generator data. A CMR criticality safety engineer subsequently recognized the potential over-mass condition during a review and appropriate actions were taken to isolate the drum and evaluate the situation. Other corrective actions include the development of a recovery plan to examine and repackage the drum contents and to reconcile the difference in generator data and NDA results.