

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

October 2, 2009

MEMORANDUM FOR: T. J. Dwyer, Technical Director
FROM: B. Broderick and R.T. Davis
SUBJECT: Los Alamos Report for Week Ending October 2, 2009

Plutonium Facility: On Wednesday, facility management declared the fire suppression system inoperable based on recent hydraulic calculations that conclude the system does not achieve the water density coverage required in the safety basis (0.19 gpm/ft^2). Facility activities were placed in a safe and stable condition to support a transition to standby mode, which was accomplished Wednesday afternoon, consistent with the Technical Safety Requirements (TSRs). To support upgrading the classification of the fire suppression system from safety significant to safety class, LANL performed a system adequacy analysis (backfit analysis) in 2008. This analysis noted that limited portions of the fire suppression system may not achieve the density coverage required by NFPA 13 for Ordinary Hazard Group II (the group designation for the Plutonium Facility) and recommended that an evaluation be performed. The hydraulic calculation recently completed for the system identifies that 13 of approximately 100 hydraulic areas do not meet the density requirement. LANL has identified this deficiency as a Potential Inadequacy in the Safety Analysis and plans to pursue safety basis changes including compensatory measures (e.g. additional combustible control/fire watches in affected areas) until the system can be upgraded.

Also this week, personnel found a surface-contaminated legacy item in an unposted area outside of the Plutonium Facility proper (i.e. PF-4) during an extent of condition walkdown performed in response to a recent contamination event and worker uptake at CMR (site rep weekly 9/18/09). Plutonium Facility management established a systematic and thorough inspection plan for uncontrolled auxiliary areas that could contain contaminated legacy items that are not appropriately marked or labeled. This inspection process included opening locked drawers that have not been accessed for many years. In one locked drawer, personnel found legacy radiation sources in an unmarked container. One of these radiation sources was found to have removable americium contamination. Upon discovery of the contamination, appropriate actions were taken to exit the room, post the area and develop a recovery plan with support from radiation protection personnel. The management decision to undertake a broad extent of condition review to identify problematic legacy items in unexpected locations led to the isolation and elimination of this previously unknown and uncontrolled hazard.

Weapons Engineering Tritium Facility (WETF): Last month, as a part of the ongoing extent of condition reviews for pressure safety issues at WETF, LANL declared a TSR violation for the Containerization Program because many containment vessels do not meet the TSRs (drop test, temperature rating, leak rate testing and maximum allowable working pressure). This week, LANL submitted safety basis changes to address this issue. The submittal recommends the following compensatory measures for legacy containers that do not meet the TSRs: labels to indicate specific vulnerabilities; storage in a restricted access area; and storage of containers that do not meet drop test requirements within 1 foot of the floor. WETF continues implementation of previous safety basis changes and other readiness activities in preparation for facility restart.