

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

July 15, 2011

MEMORANDUM FOR: T. J. Dwyer, Technical Director
FROM: B.P. Broderick and R.T. Davis
SUBJECT: Los Alamos Report for Week Ending July 15, 2011

Transuranic Waste Operations: Recently, LANL submitted updated Documented Safety Analysis (DSA) and Technical Safety Requirements (TSRs) documents for the WCRR Repackaging Facility to the NNSA site office for approval. Notably, the update increases the material-at-risk limit for the WCRR building from 300 combustible equivalent curies to 800 combustible equivalent curies to allow processing higher activity transuranic waste containers. Design basis accident scenarios have been updated, as appropriate, based on the higher material-at-risk limit.

As a part of the WCRR safety improvements that occurred late last year, a fire suppression system was installed in the waste characterization glovebox. The safety basis now credits this system as safety significant. Other significant changes in this submittal include clarification that the electrical distribution system is not a safety significant support system and removal of the transportainers and lightning protection system as safety design features. The specific administrative controls relative to transportainers usage and code requirements for inspection and maintenance of the lightning protection system remain. The site office is currently reviewing this submittal.

Plutonium Facility – Seismic Safety: Plutonium Facility personnel have completed physical installation work on steel support beams in glovebox exhaust ventilation plenum rooms in the facility basement. The newly installed beams address a structural vulnerability that could have caused roof members to fail and crush portions of the HEPA-filtered exhaust plena during a seismic event. Breaching the exhaust plena could have resulted in the creation of an unfiltered release path from the facility. The structural issue that the newly installed support beams are designed to address had one of the highest probabilities of failure of any vulnerability identified by the SAFER project.

Plutonium Facility personnel also plan to install seismic shut-off valves on natural gas lines that service support buildings around the periphery of the Plutonium Facility. Natural gas is not used in or plumbed into the Plutonium Facility itself. Among other buildings, the new seismic shutoff valves will be installed in the two redundant fire water pump houses that perform an important function as part of the safety class fire suppression system. The fire suppression system is currently credited for operational (i.e. non-seismically-induced) fires, but Plutonium Facility management intends to pursue upgrades to credit the system for seismically-induced fire scenarios as well. Adding seismic shutoff valves to natural gas lines in the pump houses will support this approach by reducing the likelihood of common cause earthquake failures rendering the safety class fire suppression system inoperable.

Additionally, this week LANL personnel removed a quantity of dry cement from the Plutonium Facility cement silo appurtenance. This evolution restores compliance with the TSR-level compensatory measure limiting the allowed amount of cement to one-fourth silo capacity. When at or below one-fourth capacity, the cement silo is not expected to fail in a seismic event and adversely impact the confinement boundary provided by the safety class Plutonium Facility building structure.

Radioactive Liquid Waste Treatment Facility: Facility personnel began work this week to install seismic shutoff valves to natural gas lines that service the Radioactive Liquid Waste Treatment Facility and the facility's treated effluent evaporator.