

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

June 3, 2011

MEMORANDUM FOR: T. J. Dwyer, Technical Director
FROM: B.P. Broderick and R.T. Davis
SUBJECT: Los Alamos Report for Week Ending June 3, 2011

Plutonium Facility – Safety Basis: Today, Plutonium Facility management declared the set of Technical Safety Requirements associated with the 2008 DSA to be fully implemented. This declaration concludes a two and a half year effort to implement the new modern control set and to perform a series of independent assessments to verify the adequacy of implementation.

Plutonium Facility – Seismic Safety: This week, LANL personnel issued final seismic analyses performed as part of the SAFER project that describe the performance of the Plutonium Facility structure and key safety systems under the increased seismic loading associated with the site's updated Probabilistic Seismic Hazards Analysis (PSHA). Results from these analyses are critically important to understanding the Plutonium Facility's seismic vulnerabilities and in defining the scope of upgrades necessary to address these vulnerabilities.

LANL management declared a Potential Inadequacy of the Safety Analysis (PISA) in late-April based on preliminary SAFER results for the facility structure that indicated the failure of some structural components is more likely than previously understood. A Justification for Continued Operations (JCO) covering these issues with the facility structure is scheduled to be submitted on June 6th. Newly completed analysis focused on the seismic performance of facility safety systems indicates that some credited systems may also fail more frequently in seismic events than previously thought. These results are being evaluated using LANL's New Information process to determine whether an additional PISA or PISAs are necessary.

Weapons Engineering Tritium Facility (WETF): On Friday, WETF management declared a PISA based on the lack of updated seismic analyses for the two exhaust stacks associated with the facility. In 2007, LANL completed the 10 year update of the PSHA that identified higher ground motions for laboratory facilities. A positive unreviewed safety question was declared for multiple facilities including WETF and a JCO was approved by NNSA. The SAFER project was initiated to review facility performance against the updated PSHA. In 2010, LANL completed the SAFER analysis and exited the JCO for all facilities except the Plutonium Facility. During recent development of the Hazard Analysis to support an updated DSA for WETF, questions about stack seismic performance were raised. Upon investigation, WETF management discovered that the stacks were not evaluated via SAFER even though seismically-induced collapse could damage the safety-credited building. WETF is currently not processing tritium pending implementation of controls identified in the JCO associated with the hot inlet system (site rep weekly 5/13/11). An evaluation of the safety of the situation for the stack issue will be completed prior to resuming tritium processing activities.

Radioactive Liquid Waste Treatment Facility Upgrade Project: Last week, LANL provided their recommendation to the NNSA site office on the path forward for the Radioactive Liquid Waste Treatment Facility Upgrade Project. The recommended path forward includes separating the transuranic and low level waste processes into individual structures with use of the previous design details to the extent possible. LANL also recommends that the project scope include low level daily influent storage by upgrading and using the WMRM tanks. The site office is reviewing the proposed path forward for the upgrade project.