

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

October 31, 2008

MEMORANDUM FOR: T. J. Dwyer, Technical Director
FROM: B. Broderick and R.T. Davis
SUBJECT: Los Alamos Report for Week Ending October 31, 2008

Radioactive Liquid Waste Treatment Facility (RLWTF): On Wednesday, LANL identified an active leak site in a legacy sludge tank (TK-7) associated with liquid transuranic waste processing operations. This tank contains approximately 17 Am-equivalent curies of settled sludge and water. A plastic containment measure, which was recently applied at this location due to visual indications of corrosion, contained the leakage. No external surface or airborne contamination was identified. Initial response actions included providing a more robust plastic containment around the leak site and a larger containment feature beneath the tank to mitigate a more catastrophic failure.

As a part of the restart efforts for transuranic liquid waste operations (Room 60), a newer sludge tank (TK-7A) was installed to replace TK-7. LANL had previously attempted to deinventory TK-7 but failed due to clogging of the transfer piping. Most of the clogged transfer piping was replaced and TK-7 deinventory was planned to be performed as an initial evolution following Room 60 restart. To resolve the TK-7 leak and place the facility in a safe/stable configuration, LANL requested site office approval on Wednesday to perform this deinventory in advance of the contractor readiness assessment (currently scheduled to begin next week) and NNSA authorization to restart Room 60 operations. LANL noted that the necessary procedures and qualified operators were available for this operation. Also, the transfer path (except a small portion associated with TK-7) has been recently tested in anticipation of restart. Following site office approval of LANL's plans for this evolution, facility personnel attempted to deinventory the tank on Friday; however, efforts to transfer sludge from TK-7 to TK-7A were unsuccessful. LANL is currently considering additional options to resolve this issue.

Formality of Operations: Available site resources, in particular facility and system engineering, have constrained LANL's plans and progress on implementing Formality of Operations to increase confidence in facility safety systems and safety programs. Recently, LANL designated approximately \$20 M in FY09 funding to provide additional external resources to augment facility resources for implementation of Formality of Operations. Each of the LANL nuclear facilities has identified their functional area needs (e.g., system engineers, procedure writers, and training instructors) and these are being matched with specific resources available from corporate partners.

Weapons Engineering Tritium Facility (WETF): On October 20th, the circuit that provides power to the WETF ventilation system was de-energized during the latest evolution in support of a vaguely-defined, on-going troubleshoot-and-repair maintenance activity. This secured the dedicated ventilation feature that had been provided to exhaust offgas from tritium-contaminated components that were staged in plastic bags in a WETF room. Without this ventilation, offgassing from the staged components caused the tritium-level in the room to rise, prompting a tritium monitor to alarm when the concentration reached 20 $\mu\text{Ci}/\text{m}^3$. While this event did not result in appreciable worker uptake or room contamination, it did highlight or reemphasize a number of important opportunities for improvement that facility management now appears to be pursuing. These include: •increased formality in identifying and reviewing changes to previously authorized work scope to ensure new hazards or facility impacts are recognized and appropriately addressed; •more specificity in the scope definition of maintenance activities; •validation of the bases for current alarm set points and moving to a more robustly proceduralized alarm response protocol that is less reliant on expert judgment.