DEFENSE NUCLEAR FACILITIES SAFETY BOARD

December 21, 2018

MEMORANDUM FOR: Christopher J. Roscetti, Technical Director
FROM: J.W. Plaue and D. Gutowski, Resident Inspectors
SUBJECT: Los Alamos Activity Report for Week Ending December 21, 2018

Plutonium Facility–Work Control: Last Friday, facility management issued a new standing order applicable to all work performed in gloveboxes. The order requires that all glovebox workers use cut/puncture resistant over-gloves or additional tools when working with or generating sharps. Any deviation from this requirement must be granted in writing. The standing order will remain in place until longer term implementation initiatives regarding sharps are determined.

Plutonium Facility–Operations: Last Tuesday, workers drumming out gloves from a glovebox line noted liquid in the box. They determined that a valve in the box on a sodium hydroxide solution line had been bumped. More than 100 liters of solution entered the box. The criticality safety analysis for this box does evaluate the fully flooded condition and there was no nuclear material other than contamination in the box at the time. The work crew vacuumed the solution into tanks in a nearby glovebox. However, these tanks were designed for acidic solutions and have gaskets that are not recommended for use with sodium hydroxide. Therefore, this week the solution was moved via two liter bottles to tanks in another room with compatible materials.

Plutonium Facility–Safety Basis: Two weeks ago, safety basis personnel performing an unreviewed safety question screen of a waste analysis plan for treatment of radiologically contaminated magnesium perchlorate entered the new information screening process. They noted that the currently approved Documented Safety Analysis states that perchlorate salts are no longer present in the facility. This Monday, Triad personnel determined that this constituted a potential inadequacy of the safety analysis. The material is currently stored in a metal can and will be moved to the Chemistry and Metallurgy Research building for treatment next year.

Last Tuesday, Triad Safety Basis personnel provided to the NNSA Field Office for concurrence a revised project execution plan for updating and improving the Plutonium Facility safety basis (see 9/15/2017 report). The key change in the new plan is including revisions to bring the safety basis into compliance with DOE-STD-3009-2014, *Preparation of Nonreactor Nuclear Facility Documented Safety Analysis.* This will be done concurrently with the modeling updates. The plan proposes submittal of the new safety basis and updated accident analysis to the NNSA Field Office in March 2022.

Last Friday, Triad submitted to the NNSA Field Office the evaluation of the safety of the situation and justification for continued operations for the potential inadequacy of the safety analysis associated with the biokinetic solubility of plutonium-238 oxides (see 8/17/2018 report). The new proposed compensatory measure eases the existing one by using an intermediate solubility for oxides that have not been high fired. They originally entered this issue into the new information screening process on July 19, 2018, declared a potential inadequacy of the safety analysis on August 15, 2018, and then determined the issue constituted a positive unreviewed safety question on September 9, 2018. DOE Guide 424.1-1B provides timeliness expectations for these steps because the safety basis is outside the envelope approved by DOE.

Emergency Management: Triad personnel continue efforts to improve emergency communications across the site (see 10/5/2018 report). They have conducted radio and cellular signal surveys at several identified critical communications areas including the TA-55 Operations center and the Weapons Engineering Tritium Facility. The results of these and future surveys will be used to prioritize communications upgrades. A cellular signal booster was recently installed at the Emergency Operations Center, and a radio signal booster will be installed early next year.