DEFENSE NUCLEAR FACILITIES SAFETY BOARD

March 3, 2017

MEMORANDUM FOR: S.A. Stokes, Technical Director
FROM: R.K. Verhaagen and J.W. Plaue
SUBJECT: Los Alamos Report for Week Ending March 3, 2017

Area G–Readiness Activities: On Tuesday, a Contractor Readiness Assessment (CRA) team completed their review of the Area G portion of the inappropriately remediated nitrate salt (RNS) waste processing campaign. The scope of the CRA included de-nesting the RNS waste drums from their standard waste boxes, transporting the drums to the refrigeration unit attached to the Dome 375 Permacon, and loading the drums onto a vehicle for transport to the Waste Characterization, Reduction and Repackaging Facility. During their outbrief, the team identified seven pre-start findings in the areas of radiological controls, hoisting and rigging, procedures, confined space entry, and engineering documentation. The team concluded that upon successful resolution of these pre-start issues, Area G personnel were ready to commence RNS operations.

Plutonium Facility–Infrastructure: On Wednesday, LANL personnel briefed the NNSA Field Office on the status of the Potential Inadequacy of the Safety Analysis declared for the seismic performance of cast iron and malleable iron fittings in the fire suppression system (see 4/22/16 weekly). Plutonium Facility personnel informed the field office that the sub-contractor has completed the necessary testing, modeling, and calculations and results indicate that the fire suppression system meets seismic performance category level 2, as currently specified in the safety basis. Facility personnel also indicated that in order to improve the fire suppression system's performance to safety class for seismic events as previously planned, additional modeling and analysis would have to be performed to identify necessary upgrades to meet performance category level 3.

Plutonium Facility–Conduct of Operations and Nuclear Criticality Safety: On Wednesday, a division leader conducting a walk-around identified an issue with two containers that exceeded the location's aggregate limit for soluble plutonium compounds. The limit is a temporary provision included in the safety basis stemming from the Evaluation of the Safety of the Situation associated with firewater ingress into gloveboxes. The specific limit requires operators to use approved water resistant containers for aggregate quantities in excess of 500 g of plutonium metal turnings, plutonium metal fines, plutonium metal pieces weighing less than 5 g, compounds, or dry residues. In this case, the operators incorrectly interpreted the requirement and believed they were in compliance since they had split the material—which was the dried residue of a dissolution run that had been dormant for more than 3 years—into two containers each with less than 500 g. As part of the response to the process deviation, facility management directed the over-packing of one of the items into a water resistant container. Two of the corrective actions discussed at the fact-finding involve reviewing the language of the limit for operator friendliness and emphasizing the limit in upcoming continuing training.

We note this event underscores the need to establish gloveboxes with compliant nuclear criticality safety limits that allow work with greater than 500 g of compounds. In particular, the facility has nearly 1500 items totaling about 365 kg of nuclear material that is impacted by this limit. Much of this material is categorized as No Defined Use and will require some amount of handling prior to disposition. Currently, development of an appropriate nuclear criticality safety evaluation is scheduled for completion in the first quarter of fiscal year 2018 due to higher priority actions.