DEFENSE NUCLEAR FACILITIES SAFETY BOARD

May 9, 2014

MEMORANDUM FOR: S.A. Stokes, Technical Director
FROM: R.T. Davis, R.K. Verhaagen, and J.W. Plaue
SUBJECT: Los Alamos Report for Week Ending May 9, 2014

DNFSB Staff Activity: M.P. Duncan, P.J. Foster, and J.A. Pasko conducted an onsite review of the Transuranic Waste Facility project on Tuesday and Wednesday. On Thursday, P.J. Foster and A.K. Gwal followed up on previous questions regarding electrical systems at the Plutonium Facility. R.G. Quirk supported the Site Representative office all week.

Plutonium Facility–Criticality Safety: On Tuesday, LANL issued a memo that retracts and replaces a previous memo that outlined the approach to identify criticality safety controls as part of the resumption process. The previous approach involved using new technical reference documents to develop or revise compliant criticality safety evaluations for higher mass operations prior to resumption. This process would address known safety margin concerns and insufficiently analyzed abnormal conditions (e.g., flooding and seismic events) in order to ensure the appropriate controls. The new approach centers around the firefighting water Evaluation of the Safety of the Situation and Justification for Continued Operations (ESS/JCO) and includes following paths: (1) requesting field office concurrence that an adequate technical basis exists for operations not covered by the ESS/JCO, (2) utilizing the ESS/JCO control set for covered operations and requesting additional field office concurrence, and (3) developing new criticality safety evaluations for those operations not covered by 1 or 2.

On Wednesday, LANL submitted to the field office a second revision of the firefighting water ESS/JCO (see 4/11/14 weekly). The revision includes enhanced technical basis information and commits to evaluate each operation to determine whether flooding or flooding-derived upsets require additional controls. This week, program personnel began determining whether additional immediate actions are necessary associated with small pieces and turnings of plutonium metal. The ESS/JCO places additional restrictions on these items, which were not reflected in the 4500 g criterion used for the initial immediate actions (see 3/21/14 weekly). On Thursday, facility and program personnel conducted a hot wash for the immediate actions and were unable to determine improvements that could have expedited the nearly month-long effort.

Weapons Engineering Tritium Facility (WETF): This week, WETF management assembled a team of engineering experts from across the laboratory to assist with restoring operability of the oxygen monitoring system (OMS). Operability of the OMS is necessary for facility restart (see 5/2/14 weekly). The engineering team intends to identify and repair the root causes of the OMS inoperability through a systematic troubleshooting process. The team has identified two separate issues it will focus troubleshooting efforts on: system noise and instrument drift. The team will also evaluate the calibration procedure and techniques to determine whether improvements are needed. Benchmarking of other oxygen monitoring systems on site and at the Savannah River Site will also be performed to see if additional insights can be gained into OMS reliability and maintenance.

Area G: LANL stood up a war room to triage information and actions associated with the potential that nitrate salt waste contributed to the radioactive release event at the Waste Isolation Pilot Plant (see 5/2/14 weekly). In addition to locating and controlling drums from this waste stream, laboratory personnel began performing chemical and radiological analyses to evaluate the current conditions of these materials.