DEFENSE NUCLEAR FACILITIES SAFETY BOARD

November 29, 2013

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 November 29, 2013

DNFSB Activity: On Tuesday, NNSA personnel briefed the Board on the results of the Operational Readiness Review for the Confinement Vessel Disposition Project and the path forward to commencing nuclear operations.

Weapons Engineering Tritium Facility (WETF): On Monday, WETF management declared a Potential Inadequacy of the Safety Analysis (PISA) regarding the as-found calibration check results for the Oxygen Monitoring System (OMS). The approved safety basis credits the OMS with a safety significant function to provide an early warning so operators can take action to prevent the formation of a deflagrable mixture in tritium gloveboxes and certain processing systems. Per the Technical Safety Requirements (TSR), facility personnel perform a semi-annual surveillance on the OMS oxygen sensors that includes an as-found calibration check, sensor replacement, and an as-left calibration. During the October surveillance, facility personnel determined 6 of 12 sensors failed the as-found calibration check in the non-conservative direction (i.e., readings were lower than expected). Subsequent to a written observation by the field office Facility Representative noting these failures and questioning the adequacy of the surveillance frequency, WETF management conducted a critique, determined the OMS was inoperable, and concluded that a PISA existed.

WETF management placed the facility in a safe condition per the TSR and plan to propose a more frequent surveillance interval to obtain improved data and understanding on sensor drifting as part of their evaluation of the safety of the situation. Facility personnel also plan to conduct the surveillance in the near-term to provide drift data near the one month point. The Site Representatives note the following additional pertinent information: 1) the sensor manufacturer recommends a calibration check every 2–4 weeks, and 2) operators must breach the glovebox confinement to access the oxygen sensors for calibration and replacement due to the design of the existing OMS. Facility personnel have initiated a design change package to upgrade the OMS electronics, but have not pursued changes to relocate the sensors to outside of the tritium-contaminated glovebox environment.

Area G – Safety Basis: The field office disapproved LANL's submittal of the two safety basis addendums for the Area G Basis for Interim Operations (BIO) (see 11/1/13 weekly). The addendums would have allowed operators to open sealed inner containers with bolted lids/flanges during Sort, Segregate, Size-Reduction, and Repackaging activities, and to perform Gas Generation Testing under a stand-alone safety basis. The field office directed LANL to resubmit the addendums as page changes incorporated into the existing BIO and TSR.

Plutonium Facility – Safety Basis: Last week, the field office transmitted comments to LANL on a recent safety basis update (see 10/18/13 weekly). A majority of the comments related to the new transuranic waste preparation and assay activities to be performed outside of the Plutonium Facility structure, but inside the TA-55 protected area. The field office directed LANL to resubmit the revision and a consolidated comment resolution document in a timely manner to support programmatic needs.