

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

August 14, 2009

MEMORANDUM FOR: T. J. Dwyer, Technical Director
FROM: B. Broderick and R.T. Davis
SUBJECT: Los Alamos Report for Week Ending August 14, 2009

Staff members J. MacSleyne, J. Pasko and R. Verhaagen along with outside expert D. Volgenau were onsite this week to review activity-level work planning and control.

Plutonium Facility: On June 24th, Plutonium Facility management declared a potential inadequacy of the safety analysis (PISA) based on an NNSA facility representative's discovery of three unvented 55-gallon assay standards staged in the facility basement. These unvented standards contain plutonium in contact with hydrogenous material that could evolve hydrogen gas and create an explosive atmosphere inside the sealed drum, creating a potential deflagration hazard. To address the PISA, facility management established a compensatory measure to cordon off, post, and prohibit handling of the unvented standards, as well as, a compensatory measure to relocate 16 transuranic waste drums that were immediately adjacent to the unvented standards. On July 1st, the three unvented standards resulted in a positive unreviewed safety question (USQ), thereby requiring NNSA approval before compensatory measures could be lifted. Subsequent to the positive USQ determination, facility personnel realized that eight of the sixteen palletized transuranic waste drums collocated with the unvented standards could not be accessed by a forklift without handling the unvented containers. As a result, eight transuranic waste drums remain within about one foot of the unvented standards. On Tuesday, a formal evaluation of the safety of the situation (EOSS) was submitted to the NNSA site office. The EOSS concludes that existing compensatory measures related to cordoning off and proscribing handling of the unvented standards should remain in effect and that the eight collocated transuranic waste drums could remain in place until further options are evaluated.

Compensatory measures established to address PISA conditions are identified by LANL procedures as part of a nuclear facility's safety basis. The current Plutonium Facility Safety Basis Document List (SBDL) does not capture the compensatory measures related to the unvented standards, as required. Effective configuration control of the Plutonium Facility SBDL has been a recurring problem.

Chemistry and Metallurgy Research Building (CMR): Last week, LANL submitted temporary safety basis changes associated with use of an alpha box (a confinement enclosure used for dispersible materials located in the Wing 9 hot cells) to repackage seven legacy items. This activity is part of the effort to de-inventory actinide materials (including Cm, Am, Np, and U) currently stored in Wing 9 floor wells by the end of 2010. The existing safety basis credits alpha box ventilation and HEPA filters during hot cell processing activities that involve dispersible materials. The LANL submittal recommends eliminating the safety basis controls specifically associated with alpha boxes inside of hot cells because of the limited amount of material planned to be processed, the limited time at risk (estimated to be approximately 4 weeks) and the availability of other credited hot cell confinement features. LANL asserts that the hot cells and associated exhaust ventilation HEPA filters provide credited filtration and adequate controls for the planned activity. However, to limit the spread of contamination in the hot cells, LANL does plan to use an alpha box with its existing HEPA filter (that cannot be tested) along with a temporary blower and additional non-credited HEPA that discharge into an adjacent hot cell. The NNSA site office is reviewing the proposed safety basis change.