

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

July 9, 2010

MEMORANDUM FOR: T. J. Dwyer, Technical Director
FROM: B.P. Broderick and R.T. Davis
SUBJECT: Los Alamos Report for Week Ending July 9, 2010

Federal Oversight: This week, Don Winchell, NNSA Los Alamos Site Office manager, retired from federal service. NNSA has announced that Kevin Smith will replace Winchell as the site office manager. Roger Snyder, deputy site office manager, will serve as the acting manager until Smith reports for duty in late August. In the interim, NNSA headquarters has delegated safety basis approval authority to Snyder, but has retained startup and restart authorization authority at the NA-10 level.

Plutonium Facility: On Thursday, Plutonium Facility management declared a potential inadequacy of the safety analysis (PISA) and initiated a hazardous material response based on the discovery of potentially explosive ammonium nitrate powder inside the facility.

For years, facility personnel had observed a white powdery substance being generated and accumulating between the first and second stages of high efficiency particulate air (HEPA) filters in the standby glovebox exhaust filter plenum that services the 200 Area of the facility. White powder has never been observed in any other Plutonium Facility HEPA filter plenum, including the primary 200 Area glovebox exhaust plenum. The powder was thought to be an inert oxalate salt and was considered benign. Two weeks ago, more thorough chemical analysis performed to support dispositioning several bags of this powder as waste concluded that the substance was actually 95% ammonium nitrate. Upon receipt of the analysis results, facility and safety basis personnel believed the ammonium nitrate to be a strong oxidizer and entered the New Information process to determine whether the unexpected presence of a strong oxidizer in a credited HEPA filter plenum was an unanalyzed hazard that represented a PISA. On Thursday, as part of processing this New Information, safety basis personnel consulted LANL explosives experts who judged that the ammonium nitrate should be considered a UN Class 1.1 explosive based on qualitative description of the powder. This prompted a PISA and a number of immediate actions.

A hazardous material response to recover and neutralize several bags of previously collected ammonium nitrate powder from the facility basement was initiated on Thursday and successfully completed on Friday. Access to the basement room containing the affected HEPA filter plenum, where powder continues to be generated, has been secured and controlled. A waste box in the basement containing removed HEPA filters believed to be contaminated with ammonium nitrate powder has also been isolated and handling of this box has been prohibited. Until the generation mechanism of the potentially explosive powder is better understood, facility management has suspended all aqueous processing activities in the 200 Area of the Plutonium Facility.

Weapons Engineering Tritium Facility (WETF): Prior to retirement, the NNSA site office manager authorized restart of certain tritium gas handling and transfer operations after pre-start findings from the recently completed Operational Readiness Review were confirmed to be closed by site office personnel. An additional contractor readiness assessment is scheduled for late July to authorize function tester operations required for an important programmatic deliverable.