

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

March 31, 2006

MEMORANDUM FOR: J. K. Fortenberry, Technical Director
FROM: Michael J. Merritt, DNFSB Site Representative
SUBJECT: Lawrence Livermore National Laboratory (LLNL)
Report for Week Ending March 31, 2006

Plutonium Facility Compensatory Measures: On March 28, 2006, the Livermore Site Office (LSO) approved the removal of some compensatory measures in the Plutonium Facility (see weekly report dated December 23, 2005). The compensatory measures were initially identified in February and refined in May as part of LLNL's request to resume limited operations in the facility. In each case, LLNL provided justification for why removal of the compensatory measure is warranted at this time. In general, the compensatory measures are extra administrative checks, increased frequency of off-shift monitoring by technicians, and the elimination of grace periods for Technical Safety Requirements surveillances. Based on the demonstrated performance during the resumption, the removal of these compensatory measures is warranted.

Hardened Engineering Test Building Activity: This week, a radiation measurement activity was conducted in the Hardened Engineering Test Building, Building 334. The activity consisted of removal of nuclear material from a container, handling of the material, and passive radiation measurements. The radiological controls – including survey requirements, personal protective equipment (PPE), and dosimetry requirements – were defined in a work permit. During performance of this activity, the implementation of the work permit controls was weak and conduct of operations by some personnel during the removal and handling of the material lacked discipline.

The conduct of these routine activities varies within Nuclear Materials Technology Program (NMTP) facilities. Three NMTP facilities, Building 334, the Radiography Facility, and the Plutonium Facility, routinely conduct activities involving the removal and handling of nuclear material. The Plutonium Facility has well established controls for these type of activities identified in the Facility Safety Plan (FSP), with Fissile Material Handlers (FMHs) that are trained to implement the FSP controls in a disciplined manner. The improvements in work control and conduct of operations in the Plutonium Facility are not yet evident in the other NMTP facilities. The Radiography Facility recently improved the work permit implementation for removal and handling operations which has raised the level of performance in conducting the activities (see weekly report dated November 11, 2005). Building 334 also uses the work permit process, but has had mixed results.

In order to improve performance and establish consistency of operations in its facilities, NMTP management should consider updating the FSPs for Building 334 and the Radiography Facility to incorporate controls (consistent with the Plutonium Facility FSP) for routine radiological activities. NMTP management should also establish expectations for FMHs, program personnel, hazard control technicians, and facility personnel that demand a level of performance consistent with that required in the Plutonium Facility.

Despite the fact that the operations in Building 334 are infrequent, LSO did not conduct real-time oversight of the recent activity. However, NMTP management is aware of the need for improvement and is directing actions to upgrade performance.