

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

April 6, 2012

MEMORANDUM FOR: Timothy Dwyer, Technical Director
FROM: Jonathan Plaue, DNFSB Site Representative
SUBJECT: LLNL Activity Report for Week Ending April 6, 2012

Plutonium Facility: This week, program personnel executed and completed the disassembly of the classified experiment using high explosives and a surrogate (non-radioactive material) material for plutonium. Livermore Site Office (LSO) personnel conducted a visual examination of the test object and concluded that it performed as assumed in the safety basis. Program personnel also intend to perform computed tomography; however, LSO determined that this information was not necessary to meet the condition of approval for the safety basis change. Facility management expects several additional actions, including a demonstration of procedures needed to respond to credible abnormal scenarios (e.g., presence of unburned high explosives and contamination) prior to declaring readiness. Success oriented schedules suggest execution of the readiness assessments in late April with conduct of the experiment to follow in early May.

Explosives Safety: Subsequent to discussions with the Site Representative regarding potential electrostatic discharge (ESD) susceptibility of exploding bridge wire detonators (see weekly report dated March 23, 2012), program personnel requested a review of a weapons related experiment by the laboratory's ESD experts. Based on a review of the procedure and tour of the work space, the ESD experts recommended the addition of a procedural step to ensure that overhead crane equipment was grounded prior to attaching the experimental assembly. Program personnel made the recommended change in one of the procedure modifications performed during the course of the experiment.

Nuclear Criticality Safety: During a routine walk down on March 22, 2012, a program manager observed a small enriched uranium metallic item in a workstation with a criticality posting that required fissionable material to be in oxide form. Personnel responded appropriately and a criticality infraction was declared. Criticality safety personnel assessed the situation to be severity level four event, the lowest category. In their report, criticality safety noted that the handler who made the material move acknowledged the error and noted the circumstances of a non-routine operation and a busy week. The second handler acknowledged not performing his "second check" responsibility with appropriate rigor. In response to these conduct of operations issues, facility management directed a detailed discussion of the event with all of the handlers and supervisors as part of a routine feedback and improvement meeting.

Emergency Management: This week, the Nuclear Materials Technology Program (NMTP) unveiled documentation for their emerging operational drill program. The operational drill program will focus on plans that require response by the certified material handlers, operators, and other key staff in Superblock. Operational drill plans are distinguished from facility emergency plans, facility emergency plans with emergency action levels, and self help plans. NMTP intends for the institution to maintain drills for events that require external assets (e.g., fire department). The new program manual provides roles and responsibilities, including a new NMTP Emergency Management Coordinator position; sets requirements for identification of scenarios and drill conduct; and specifies expectations for drill frequencies (e.g., in the Plutonium Facility, 3 drills per year for program staff and 2 per year for facility staff).