

## DEFENSE NUCLEAR FACILITIES SAFETY BOARD

March 30, 2012

**MEMORANDUM FOR:** Timothy Dwyer, Technical Director  
**FROM:** Jonathan Plaue, DNFSB Site Representative  
**SUBJECT:** LLNL Activity Report for Week Ending March 30, 2012

**Plutonium Facility:** On Monday, facility management approved the work permit to conduct a classified experiment involving high explosives and a non-radioactive surrogate for plutonium (see weekly report dated March 23, 2012). Program personnel subsequently commenced work on the surrogate experiment, which is intended to validate procedures and confirm computational models of the material behavior.

Conduct of the experiment using plutonium will require completion of contractor and federal readiness assessments (RA). In an unconventional practice, the execution of the surrogate experiment was proposed to concurrently serve as the primary work demonstration for the management self-assessment, the contractor RA, and the federal RA. While the RAs have not technically commenced, two factors have complicated the effectiveness of work observations using the surrogate experiment: (1) the presence of high explosives necessitated limits on the number of personnel in the room for safety—as a result, there are generally only four spots for observation available to be shared by the three teams, facility management, and other oversight personnel; and (2) changes were made to the leadership and composition of federal RA team on Thursday, which limited the team's ability to prepare and determine assignments for covering each procedural evolution. As a contingency, the contractor acquired materials sufficient to conduct a second surrogate experiment. The RA teams, particularly the federal team, will need to determine if a second full surrogate experiment is necessary to obtain adequate work observations.

**Training:** On April 1, 2011, the Board issued a letter highlighting areas where training could be improved at LLNL. One of the areas highlighted in the report was training conducted for Operational Safety Plans (OSPs). The Site Representative recently reviewed the state of OSP training and observed the following:

- OSP training remains largely an exercise where the instructors read the content of the OSP to the students without significant practical learning or presence in the work space
- Responsible individuals who conduct OSP training are not required to complete instructor training, though some have taken on-the-job instructor training
- Exam questions inconsistently focus on learning objectives, if identified, and reflect heavy usage of poor questioning techniques (e.g., true/false, all of the above/none of the above).
- Training office personnel are not involved with the development or review of OSP training course content and exams

For improvements, contractor training office personnel have issued examination development criteria that reflect guidance from the applicable Department of Energy handbook and have also revised the examinations for fissile material handlers to minimize use of true/false examinations. Similarly, the contractor now requires handlers that perform on-the-job training to take instructor training. However, these actions have not been extended to OSPs and there are currently no formal plans for such actions.