

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

August 2, 2013

MEMORANDUM FOR: Steven Stokes, Acting Technical Director
FROM: Jonathan Plaue, DNFSB Site Representative
SUBJECT: LLNL Activity Report for Week Ending August 2, 2013

Engineering: This week, a subcontractor conducted Interferometric Multichannel Analysis of Surface Waves studies in the area near the Superblock. The subcontractor conducted the studies in a non-destructive manner using a truck-mounted 450 lb sliding nitrogen-charged hammer assembly and an array of geophones. The subcontractor will use the results of these studies to resolve conflicting observations on soil characteristics obtained from historical borehole data in support of the updated probabilistic seismic hazards analysis.

Quality Assurance: This week, a subject matter expert supporting the Livermore Field Office (LFO) was at the laboratory to review progress on corrective actions related to Software Quality Assurance (SQA). In a series of meetings, the laboratory contractor provided the status of actions taken. Of note, the contractor has elected to utilize portions of three standards from the *Institute of Electrical and Electronics Engineers* (IEEE) to meet the contractual requirements contained in Department of Energy Order 414.1D, *Quality Assurance*. LLNL is an outlier in the use of this approach. The Order requires utilization of the ASME Standard, *Quality Assurance Requirements for Nuclear Facility Applications Part I* (NQA-1), but allows for other industry standards if equivalency can be demonstrated. The Site Representative notes that many of the implementation issues associated with the previous SQA program could be attributed to selected use of IEEE standards and it is unclear whether the currently proposed approach will prevent similar difficulties. For example, the contractor developed a 600-page cross-walk document to establish equivalency with NQA-1 that necessitates implementing some “should” statements in the standards as “shall” statements.

Fire Protection: This week, the contractor reported that the status of firewater system valves near the Superblock and Waste Storage Facilities had not further degraded since their last surveillance (see weekly report dated July 5, 2013). These valves are currently classified as degraded and in need of replacement. The valves are critical to achieving the high reliability of the firewater grid system by facilitating rerouting of water supplies following a line break. The contractor intends to complete surveillance on all of the valves in the next few months. Meanwhile, LFO and contractor personnel are still analyzing the reliability impacts of changes to periodicity of water pump surveillances and procedures for filling the water system supply tanks.

Continuous Improvement: On Friday, the contractor out-briefed the preliminary results of their Safety Conscious Work Environment assessment (see weekly report dated July 26, 2013). Overall participation in the online survey was 44% and about 250 employees were interviewed. The final report and analysis is expected to be sent to LFO by August 16, 2013. One clear theme discussed during the out-brief was a significant disparity in views between senior management, middle management, and general employees in the attribute areas of: (1) management engagement and time in the field, (2) open communications and fostering an environment free from retribution, (3) credibility, trust, and reporting errors and problems, (4) effective resolution of reported problems, and (5) performance monitoring through multiple teams.