

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

November 26, 1996

MEMORANDUM: G. W. Cunningham, Technical Director

COPIES: Board Members

FROM: J. Deplitch

SUBJECT: Staff Observation of the DOE/OAK Appraisal of LLNL ES&H Activities

1. Purpose

This report documents the Defense Nuclear Facilities Safety Board (Board) staff observation of the appraisal by the Department of Energy Oakland Operations Office (DOE/OAK) of environment, safety, and health (ES&H) activities at Lawrence Livermore National Laboratory (LLNL). This observation was performed during November 12-15, 1996, by Board staff members J. Deplitch and T. Hunt.

2. Summary

The LLNL ES&H self-assessment program was still in development at the time of the DOE/OAK appraisal. Not all of the appraised directorates had completely understood or effectively implemented the program; the Chemistry and Materials Science Directorate appeared to have done the best in this regard. DOE/OAK recognized that the LLNL ES&H self-assessment program was not well documented and that deficiency tracking was weak. DOE/OAK appeared to understand the ES&H self-assessment concept and to be capable of appraising LLNL, although deficiencies in the appraisal were noted.

3. Background

DOE/OAK conducted a 2-week multidisciplinary ES&H appraisal of LLNL during November 12-25, 1996. The final report on the appraisal was scheduled to be completed soon thereafter, and the outbriefing was scheduled for December 16, 1996. DOE/OAK had been tasked to develop a comprehensive ES&H oversight appraisal program, which would be used as part of the oversight process to evaluate LLNL's ES&H activities. This year's appraisal was a pilot program, focused on LLNL's self-assessment program as currently implemented. Next year the appraisal process is expected to be based on the principles of a self-assessment program, including adequate implementation plans, completed self-assessment reports and documentation, and deficiency tracking.

4. Discussion/Observations

Structure of DOE Appraisal. Prior to the DOE/OAK ES&H appraisal at LLNL, DOE had reviewed the self-assessment plans for all 12 LLNL directorates. Based on this review, as well as institutional responsibility and mix of large and small programs, six directorates were chosen for assessment: Director's Office Deputy Director; Chemistry and Materials Science; Plant

Operations; Computation; Biology and Biotechnology Research; and Non-proliferation, Arms Control and International Security. The DOE/OAK ES&H appraisal included the following areas: LLNL ES&H self-assessment system, radiation protection, fire protection, seismic safety, emergency preparedness and response, environmental protection, industrial hygiene, and ES&H reporting systems. The majority of the appraisal was accomplished through document reviews; deficiency tracking system review; and interviews with the directorate assurance managers, functional area managers, and functional area subject matter experts.

LLNL ES&H Self-assessment Program. The approach to the LLNL self-assessments is not systematic:

- **Many of the details of the individual self-assessment programs are not documented**—DOE and LLNL provide the concept, general structure, and requirements of the self-assessment program. The LLNL directorates and facilities are responsible for the details of the program—the scope, objectives, criteria, types of assessments, frequency, and corrective actions. However, the directorate plans are too general to provide adequate structure for the directorate and facility programs.
- **The protocols of formal and informal self-assessments and the method of documenting the results are poorly defined**—Assessments are generally categorized as formal and informal. LLNL line management views self-assessments as consisting of the review of procedures, such as operations safety procedures; the conduct of work planning; and the performance of walk-throughs. Some functional area subject matter experts, e.g., radiation protection and industrial hygiene, have assessment criteria and checklists, and understand assessment frequencies and priorities. However, there is no documentation (or unified perception) that defines just what constitutes a formal or informal self-assessment and how the results should be captured.
- **Deficiencies observed during assessments are captured and tracked inconsistently**—There are no criteria or priorities for capturing observed deficiencies. Many captured deficiencies are not tracked and closed.

DOE Appraisal. The DOE/OAK appraisal had several weaknesses with respect to the interviewers and the interview process. The interviewers were sometimes unprepared and informal. They asked questions for which the answers were readily available in provided documents, or were not clearly relevant. Some interviewers appeared to be too familiar with the interviewees because of close personal and professional relationships. In some cases, the LLNL assurance manager and functional area managers (interviewees) controlled the interview. At times the interviewer was too passive and did not ask probing questions.

The DOE/OAK appraisal managers appeared to understand the weaknesses in the LLNL ES&H self-assessment program and in the DOE/OAK appraisal methodology and team.

5. Future Staff Actions

The Board staff will review the final report of the DOE/OAK appraisal of LLNL ES&H activities upon its completion. The staff will also perform follow-up reviews to monitor effective implementation of the self-assessment program. The staff will incorporate the findings of these

reviews into an overall assessment of the integrated oversight and self-assessment programs of the DOE/weapons laboratories. This assessment, currently under way, is being conducted within the context of the Board Recommendation 95-2 core safety management function "Provide Feedback and Continuous Improvement."