INITIAL SITE RESPONSE PLAN

LAWRENCE LIVERMORE NATIONAL LABORATORY

LAWRENCE LIVERMORE NATIONAL LABORATORY
MANAGEMENT RESPONSE PLAN
FOR THE
CHEMICAL SAFETY VULNERABILITY FIELD ASSESSMENT

Introduction

As part of the U.S. Department of Energy's (DOE) initiative to identify chemical safety vulnerabilities in the DOE complex, the Chemical Safety Vulnerability Core Working Group sponsored a series of field assessments at various DOE sites. A field assessment was conducted at the Lawrence Livermore National Laboratory (LLNL), April 18-26, 1994. The field assessment team included a number of members who participated on the original Tiger Team assessment of LLNL in 1990, and they noted a significant improvement in many areas. The final draft of the field verification assessment report also identified four site-specific Chemical Safety Vulnerabilities and seven noteworthy practices. All were classified as having short-term consequence, with three of the four having a low severity priority and one, a moderate priority. Two of the four vulnerabilities (including the moderate-priority issue) have been corrected, and the remaining vulnerabilities will be corrected by September 30, 1994. These site-specific vulnerabilities were also reviewed in context with evaluations at other sites to determine if they represented common issues.

Response Summary

Three of the four identified vulnerabilities involve issues which can and have been resolved directly within the site's control (i.e., completion of Emergency Plan Implementing Procedures, hazards analysis and appropriate documentation, and training). The fourth vulnerability (i.e., strategic planning for the disposition of aging/inactive facilities) is partially within the site's control. Action has been taken by LLNL to identify and provide plans for the disposition of facilities with chemical safety if the facilities contain radioactive contamination. This action implements DOE 5820.2A. The implementation of the plan cannot be accomplished solely by LLNL because some of the strategic issues involve DOE decisions and funding. In addition, there is currently no DOE guidance on the disposition of chemical facilities (i.e. an analog to DOE 5820.02A for facilities contaminated only with chemical hazards). The Management Response Plan has identified these issues for longer-term actions.

CHEMICAL SAFETY VULNERABILITY REVIEW
September 1994

Site/Facility: Lawrence Livermore National Laboratory
Point of Contact: Rex Beach (510) 422-7592 or Jim Jackson (510) 422-4256

Vulnerability Number: CSVR-LLNL-FM-01

Vulnerability:

- Limited strategic planning for the disposition of aging/inactive facilities that may contain residual amounts of hazardous or mixed waste.

Summary of Vulnerability:

- The aging condition of buildings in the 222 Complex, especially as related to roof leakage and HVAC systems, were identified in the Chemical Safety Vulnerability Review (CSVR) self-assessment. Facilities at the end of life cycle (i.e. B-222) have not been scheduled for expensive roof replacements.

Background Discussion:

LLNL issued Health and Safety Manual Supplement 2.30, "Guidelines for Decontamination and Disposal of Radioactively Contaminated Facilities and Associated Equipment," on March 21, 1994, and in accordance with the requirements of DOE 5820.2A. The scope of this document includes:

- The process for decontaminating facilities and equipment, including planning requirements for D&D work for facilities (or parts of facilities) and their associated equipment.

- The responsibilities of individuals who perform work in D&D facilities or with associated equipment.

- Planning information that LLNL must provide to PSOs through DOE/OAK. This Health and Safety Manual Supplement covers chemical safety issues related to D&D in all radioactively contaminated facilities at LLNL, including B-222. C&MS has met the first requirement of the H&SM Supplement (development of a D&D Management Plan) by submittal of information required by EM-60.

Response:

- All LLNL facilities have determined the applicability of H&SM Supplement 2.30 (LLNL's implementation of DOE 5820.2A).
- All facilities for which H&SM Supplement 2.30 is applicable have developed D&D Management Plans.

CHEMICAL SAFETY VULNERABILITY REVIEW
September 1994

Site/Facility: Lawrence Livermore National Laboratory **Vulnerability Number: CSVR-LLNL-EP-01**
Point of Contact: Rex Beach (510) 422-7592 or Jim Jackson (510) 422-4256

Vulnerability:

- Absence of Emergency Plan Implementing Procedures (EPIPs) for integrated LLNL response to a sitewide hazardous materials emergency.

Background Discussion:

- The LLNL Draft Emergency Plan (UCRL-MA-113311) meets the requirements of DOE Order 5500.3A. It was issued for use in September 1993.

Response:

Emergency Plan Implementing Procedures (EPIPs) for integrated LLNL response to a sitewide hazardous materials emergency will be approved and issued by September 30, 1994.

CHEMICAL SAFETY VULNERABILITY REVIEW
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Site/Facility: Lawrence Livermore National Laboratory **Vulnerability Number: CSVR-LLNL-MO-01**
Point of Contact: Rex Beach (510) 422-7592 or Jim Jackson (510) 422-4256

Vulnerability:

- Weakness in the hazards analysis program. There is a lack of explicit definitions for when a PWP is to be implemented and implementation when it is required and an absence of accident analyses.

Summary of Vulnerability:

- The CSVR self-assessment identified the need to complete Preliminary Hazards Assessments and Safety Analysis Reports for some of these facilities. It also identified existing schedules for completing these documents.

Response:

- The LLNL Health & Safety Manual (H&SM), Chapter 2, "Work Planning, Safety Procedures and Management Oversight," establishes the environment, safety, and health (ES&H) requirements for work planning, preparation, execution, and monitoring. Controls for hazardous operations are specified in other chapters and supplements of the H&SM. The H&SM is explicit that these controls must be followed or a Facility Safety Procedure (FSP) or Operational Safety Procedure (OSP) must be written specifying alternate controls. These safety procedures must be reviewed by safety professionals in the discipline and be approved by line management. It is also explicitly stated in the C&MS FSPs that the Project Work Plan (PWP) is not a substitute for an OSP. In other words, the PWP cannot invoke alternate controls nor delete controls specified in the H&SM. As a result, the implementation of the H&SM remains the document which specified the requirements for addressing potential chemical vulnerabilities in the work planned and conducted. The PWP is a best management practice and its "requirement" only provides C&MS managers with a screening mechanism for early identification of new or significantly modified work. In that way, long lead issues such as NEPA, environmental permits safety analysis impacts, etc., can be initiated so as to minimize schedule impacts to the start of work. The guidance in the FSP lists six explicit criteria for when the PWP is "required." In the process of identifying this work, the PWP also provides managers with early documentation of controls to be used and which are used already specified as required in the H&SM. The management prestart review, also required by Chapter 2 of the H&SM, provides a mechanism to review of the implementation of controls prior to starting the work. It is our belief that oversight provided through multiple layers of ES&H Safety Team professional involvement in work monitoring and assistance, the self-assessment program, C&MS independent Assurance Office assessments, as well as the oversight of the LLNL Assurance Review Office, the DOE Facility Rep., and external assessments, represents an acceptable level of assurance that the work planning process is working. We agree that a higher rate of implementation of the PWP would reduce the risk of schedule and cost impacts to some activities; we do not believe, however, that implementation of the PWP is the mechanism for ensuring chemical vulnerabilities are addressed.

A schedule for completing risk assessments (Preliminary Hazard Assessments) for those facilities at LLNL without PHAs (including those facilities identified for the CSVR self-evaluation) are currently scheduled and agreed to by DOE in accordance with UC-DOE Contract No. W7405-ENG-48, ES&H Performance Measure 4.1.a. Since this schedule is based on a graded approach, taking into account the level of hazards at other LLNL facilities, and is agreed upon by DOE, no change to this process or schedule is anticipated as a result of the CSVR. This includes the completion of the PHA for B-229 on June 1, 1994, as stated in the self-evaluation.

CHEMICAL SAFETY VULNERABILITY REVIEW
September 1994

Site/Facility: Lawrence Livermore National Laboratory
Point of Contact: Rex Beach (510) 422-7592 or Jim Jackson (510) 422-4256

Vulnerability Number: CSVR-LLNL-MT-01

Vulnerability:

- Personnel entry into hazardous work environments without benefit of chemical safety training.

Summary of Vulnerability:

- Personnel are entering potentially hazardous work environments without the benefit of training that correctly addresses the associated chemical hazards. The work environment of some employees has not been evaluated to determine if facility-specific chemical hazards training is warranted.

Response:

- The curriculum of the "Pressure Safety Orientation" class (HS-5030) and the "Chemical Safety" course (HS-4240) will be reviewed and modified as necessary by September 30, 1994, so that the information on personal protective equipment for cryogen use is consistent with the Health & Safety Manual.

- The curriculum for the required "New Employee Safety Orientation" class (HS-0001) given to all new employees will be modified by September 30, 1994, to cover Health Hazard Communication issues (e.g., warning signs, spill, and emergency instructions, etc.) in greater detail.

- The workplace hazards identification and notification for custodians, protective service, emergency response and other personnel has been evaluated and appropriately documented in the Facility Safety Procedure. For example Section D.2.1 of the B-222 FSP states: "Access to laboratories, offices, and shops normally is unrestricted. In cases where unrestricted access may result in exceptional safety of security concerns, the Room Responsible Person will (1) inform the Facility Manager of the access restriction, the reason and the duration of the restriction and (2) post the entrances to the room with an access restriction notice, and, if a hazard is the cause for the restricted access, a description of the hazard. The Health Hazard Communication placard posted outside each room is considered adequate to inform janitorial, protective service, emergency response, and other personnel of the hazards in the room." This is consistent with OHSA's health hazard communication requirements. The above documentation was reviewed and determined to satisfy the portion of the vulnerability concerning identification and notification of hazards for employees who work in, but not with, chemicals in laboratories (e.g., custodians, protective service officers, etc.). No further action required.

- Individuals requiring chemical safety classes HS-4240, "Chemical Safety," and/or HS-4246, "Laboratory Safety," have been notified and scheduled for the next available class.

TASK #	VULNERABILITY	ACTION	DUE DATE	RESPONSIBLE PERSON
FM-01	Limited strategic planning for the disposition of aging/inactive facilities that may contain residual amounts of hazardous or mixed waste.	1. All LLNL facilities will determine the applicability of H&SM Supplement 2.30 (LLNLs Implementation of DOE Order 5820.2A). 2. All facilities for which H&SM Supplement 2.30 is applicable will develop D&D Management Plans.	Complete Complete	Garth Cummings
EP-01	Absence of Emergency Plan Implementing Procedures (EPIPs) for integrated LLNL response to a sitewide hazardous materials emergency.	Emergency Plan Implementing Procedures (EPIPs) for integrated LLNL response to a sitewide hazardous materials emergency will be approved and issued.	9/30/94	Coleman Johnson
MO-01	Weakness in the hazards analysis program: (1) lack of explicit definitions for when a PWP is to be implemented and implementation when it is required, and (2) absence of accident analyses.	1. No further action required (see response to vulnerability CSVR-LLNL-MO-01). 2. No further action required (see response to vulnerability CSVR-LLNL-MO-01).	Closed Closed	Rex Beach
MT-01.1	Personnel entry into hazardous work environments without benefit of chemical safety training. 1. Entry into potentially hazardous work environments without proper training.	The curriculum of the "Pressure Safety Orientation" class (HS-5030) and the "Chemical Safety" course (HS-4240) will be reviewed and modified as necessary so that the information on personal protective equipment for cryogen use is consistent with the Health & Safety Manual.	9/30/94	A. Buerer

MT-01.2.a	Personnel entry into hazardous work environments without benefit of chemical safety training. Work environment for some employees has not been evaluated.	The curriculum for the required "New Employee Safety Orientation" class (HS-0001) given to all new employees will be modified to cover Health Hazard Communication issues (e.g., warning signs, spill, and emergency instructions, etc.) in greater detail.	9/30/94	A. Buerer
MT-01.2.b	Personnel entry into hazardous work environments without benefit of chemical safety training. Work environment for some employees has not been evaluated.	No further action required (see Form 1).	Closed	Marc Costantino
MT-01.2.c	Personnel entry into hazardous work environments without benefit of chemical safety training. Work environment for some employees has not been evaluated.	Individuals requiring chemical safety classes HS-4240 and/or HS-4246 will be notified and scheduled for the next available class.	Complete	Marc Costantino