

Phone	(630) 252-8747
Title	SR REGULATORY COMPLIANCE SPECIALIST

HQ OC Notification:

Date	Time	Person Notified	Organization
NA	NA	NA	NA

Other Notifications:

Date	Time	Person Notified	Organization
04/14/2011	13:40 (CTZ)	J. Benkert	ANL-FMS
04/14/2011	13:45 (CTZ)	G. Stine	ANL-FMS
04/14/2011	14:21 (CTZ)	R. Colglazier	ANL-COA
04/14/2011	14:30 (CTZ)	C. Schumann	DOE-ASO
04/14/2011	16:30 (CTZ)	P. Washburn	DOE-ASO

Authorized Classifier(AC):

6)Report Number: [SC--BSO-LBL-MSD-2011-0001](#) After 2003 Redesign
Secretarial Office: Science
Lab/Site/Org: Lawrence Berkeley Laboratory
Facility Name: Material Sciences Division
Subject/Title: Laser Lab Access Control Management Concern - No Injuries
Date/Time Discovered: 04/13/2011 16:24 (PTZ)
Date/Time Categorized: 04/14/2011 09:00 (PTZ)
Report Type: Notification
Report Dates:

Notification	04/18/2011	19:56 (ETZ)
Initial Update		
Latest Update		
Final		

Significance Category:

3

Reporting Criteria:

10(2) - An event, condition, or series of events that does not meet any of the other reporting criteria, but is determined by the Facility Manager or line management to be of safety significance or of concern to other facilities or activities in the DOE complex. One of the four significance categories should be assigned to the occurrence, based on an evaluation of the potential risks and the corrective actions taken. (1 of 4 criteria - This is a SC 3 occurrence)

Cause Codes:**ISM:**

3) Develop and Implement Hazard Controls
 4) Perform Work Within Controls

Subcontractor Involved:

No

Occurrence Description:

Summary: On 04/12/2011, an LBNL Materials Sciences Division (MSD) safety technician entered an active laser laboratory not knowing the laser was on. There were no injuries.

At around 1130 hours on 04/12/2011, an MSD safety technician entered room 358 in Building 2 to post a sign. The room was not locked and the 'laser on' warning light next to the door was off. He was wearing regular safety glasses. Several graduate student researchers were in the room with laser goggles on; they immediately asked the technician to leave the room, advising him that a class 4 laser equipment was on.

The laser interlock system that controls access to both rooms 358 and 360 had started malfunctioning several weeks prior. The principal investigator (PI) contacted LBNL Facilities personnel to repair the interlock, but the repair was unsuccessful. The labs operated for a time with the shutter portion of the interlock system bypassed. The PI then contacted the LBNL Laser Safety Officer who prepared a draft Temporary Work Authorization (TWA) to allow the lab personnel to operate the laser with alternative control measures until the interlock system could be fixed. The lab personnel did not get the draft TWA reviewed and approved by the Division management as required. Instead, they proceeded as if they had full authorization to work under an approved TWA. Since the TWA was not turned in for review, other MSD personnel were not actively made aware of the new requirements under the TWA, nor the non-functioning status of the interlock system.

Under normal circumstances, entering a laser lab without using the keypad would have triggered the laser shutter to close and the warning light to turn off, returning the lab to 'safe' state. Due to keypad malfunction, lab personnel relocated the shutter out of the laser beam path and kept the doors 'unlocked' to bypass the interlock system and to avoid inadvertent shutter closure during laser operation. One of the controls specified in the draft TWA was to manually turn on the 'laser-on' warning light whenever the laser was on. The lab personnel did this. However, because the shutter relocation and the interlock system bypass, opening the room door only turned off the warning light but did not stop the laser from operating. Those working in the lab were not aware of this situation and did not know that they needed to repeatedly manually turn the warning light on whenever a door was opened. This was the as-found condition when the safety technician entered the room - the door was not locked and the 'laser on' warning light was off.

Cause Description:

Operating Conditions:

Indoors, lighted, dry

Activity Category:

Research

Immediate Action(s):

- All laser usage has been suspended in rooms 358 and 360 until fully effective alternative controls can be implemented or the interlock system is repaired.

- The MSD Division Director approved the Temporary Work Authorization (TWA) on 04/12/2011.

FM Evaluation:

- Class-4 laser can burn the skin, in addition to potentially devastating and permanent eye damage as a result of direct or diffuse beam viewing.

- Personnel did not ascertain that manually turning on the existing 'Laser on' warning light would work prior to adopting this process as a temporary compensatory measure. It was later discovered that the interlock light could not be used in this manner due to the way it was designed and the failed keypad.
- Prior to the incident, the MSD Division Safety Coordinator and Division senior managers were not notified of the shutter relocation, the keypad failure, and the existence of the Draft TWA.
- MSD has since obtained five keys to the rooms so the doors can be kept locked at all times.
- The rooms were posted with a sign indicating that 'Administrative Controls in Place' and 'Non-Interlock laser in operation'.
- Facilities personnel are installing new mechanisms to enable the 'laser on' warning light to remain on at all times.
- MSD will conduct a root cause analysis to prevent recurrence of similar incidents.

DOE Facility Representative**Input:****DOE Program Manager****Input:****Further Evaluation is Required:**

Yes.
 Before Further Operation? No
 By Whom: MSD and EH&S divisions
 By When:

Division or Project:

Materials Sciences Division

Plant Area:

B2R358/360

System/Building/Equipment: Building 2 Room 358/360 Laser Interlock System**Facility Function:**

Laboratory - Research & Development

Corrective Action:**Lessons(s) Learned:****HQ Keywords:****HQ Summary:****Similar OR Report Number:****Facility Manager:**

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Title	Division Director

Originator:

Name	MOU, FLORENCE P.
Phone	(510) 486-7872
Title	SENIOR ADMINISTRATOR