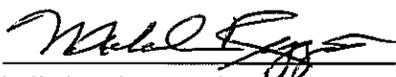


## Self-Assessment Report for FY 2008

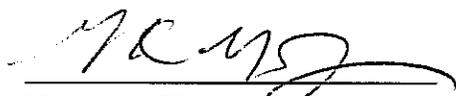
October 31, 2008

Prepared by:

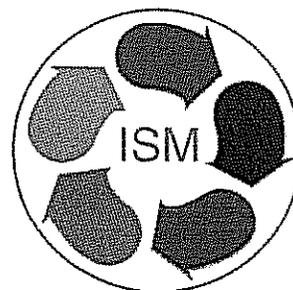


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Approved by:



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EH&S Division Safety Committee





# EH&S Division Self-Assessment Report for FY 2008

## 1. Executive Summary

The EH&S Division's primary mission is to ensure that workers, the public and the environment are protected by providing professional and technical expertise, support services, and ESH policy to the LBNL research and support programs. The Division Self-Assessment for FY 2008 was carried out over the time period of August to September 2008 during which the Division was organized into 10 Groups plus the Division Office.

To perform this assessment, the members of the EH&S Division Safety Committee were divided into five teams. Each team was assigned responsibility for assessing two or three EH&S Groups. No individual assessed the Group in which they work. In order to ensure that the self-assessment team activities complied with the Office of Contract Assurance (OCA) guidance and provided a consistent assessment across the Groups, the Division Safety Coordinator (DSC) and the EH&S Division Liaison provided a one-hour training session to the assessment teams.

The self-assessment focused on EH&S Division worker safety and the application of Integrated Safety Management within the Division. EH&S programmatic and institutional performance that did not involve EH&S Division worker safety was considered outside the scope of this assessment. A checklist was developed that provided the teams with a standard format for collecting the Group information on the 12 performance measures provided by the OCA. To organize and store the documents that were reviewed and generated by the Teams, an e-Room was set up. Below is a list of the main documents used for this assessment

- FY08 Division ES&H Self-Assessment Performance Measures (OCA)
- Guidance for Performing FY08 ES&H Division Self-Assessment (OCA)
- PY 2007 Self-Assessment Report for the EH&S Division (EH&S)
- Group Self-Assessment Reports from PY 2007 (EH&S)
- Group Self-Assessment Reports from FY 2008 (EH&S)
- FY 2008 EH&S Division Self-Assessment Objectives, Process, Schedule and Deliverables (EH&S)
- EH&S Division ISM Plan (June 2008, EH&S)

Each team met with their assigned Group Leaders, reviewed the Group's documentation for each of the 12 performance measures, inspected work spaces and interviewed workers. A draft self-assessment report for each group was provided to the Group Leaders for an accuracy review before it was finalized and submitted to the Group Leader and the Division Safety Coordinator (DSC). The DSC and the EH&S Division Liaison

reviewed the Group assessment reports and other Division performance data in order to prepare this Report.

The following sections discuss noteworthy practices observed during the assessment, areas identified for improvement, and planned corrective actions.

## **1.1 Noteworthy Practices**

1.1.1 100% of the EH&S Division's employees and guests completed their Job Hazards Analysis in FY 2008 and 92% of the required person-courses were completed.

1.1.2 In FY 2008, the EH&S Division made ergonomic safety a primary focus for improvement. The Division Senior Staff and Safety Committee members routinely reviewed the status of ergonomic assessments, mitigations, and leading indicators. In addition, the Division implemented the Early Intervention Program and the Ergo Advocate Program. Due in part to those efforts, there were no OSHA recordable injuries in the Division in FY 2008 related to repetitive motion and computer workstation ergonomics.

## **1.2 Areas Identified for Improvement**

1.2.1 The EH&S Division ISM Plan is prepared and maintained per LBNL guidance, and annual revisions of the Plan are posted on the EH&S web page and communicated to EH&S staff. However, many of the Division staff are not familiar with the contents of the Plan and are not aware that the Plan has been updated. Some staff do not understand how the Plan relates to their daily work.

1.2.2 The Hazard Management System database was implemented at LBNL in October 2007 and the EH&S ISM Plan requires that the Division's HMS data for hazards and equipment be reviewed and updated at least once per year. As of September 30, 2008, 57% of the EH&S hazards and equipment identified in the database had been reviewed within the past year. Staff knowledge of how to use the database is less than adequate and many do not see an application of the data to their daily work.

1.2.3 The EH&S Division submitted three Category IV Occurrence Reports in FY 2008 related to waste management and EH&S worker safety.

1.2.4 The Division had 11 work-related injuries in FY 2008 including two OSHA recordable cases and 9 non-recordable cases. From the 22 corrective actions indicated on the 11 SAARs, only two corrective actions were entered into the Corrective Actions Tracking System (CATS) and no lessons learned were generated.

- 1.2.5 Division Group Leaders and Supervisors are performing Safety Walkarounds and documenting those on checklists per the Division ISM Plan, however on-the-spot corrective actions are not being consistently recorded on the checklists. Interpretation of the term “on-the spot” varies from “immediately” to “several days later”.
- 1.2.6 The EH&S Division uses multiple processes to ensure and document that employees are prepared to work safely (Job Hazards Analysis (JHA), training, procedures, work authorizations, etc.). However, the Division does not have strong systems for confirming and documenting that the work was performed as defined and authorized. The primary mechanisms for documenting that work is performed safely are the Safety Walkaround checklists and informal supervisory oversight.

### **1.3 Planned Corrective Actions Based on the FY 2008 Self-Assessment**

- 1.3.1 The Division Director will request a review of the Division ISM Plan to include recommendations for improving the document and better methods for communicating annual updates to EH&S staff. Accepted recommendations will be implemented.
- 1.3.2 In order to improve the EH&S Division’s usage and timely review of the Hazard Management System Database, a member from the Industrial Hygiene Group will provide training to the EH&S Senior Staff on the database.
- 1.3.3 The Group Leader for the Waste Management Group will investigate if the three occurrence reports in FY 2008 involving waste management represent a trend or common causal factors.
- 1.3.4 To ensure that corrective actions from Supervisor’s Accident Analysis Reports (SAARs) are entered into CATS appropriately, the Division Safety Committee will review SAARs at the monthly meetings.
- 1.3.5 To reduce uncertainty regarding when deficiencies are required to be entered into CATS, the Division ISM Plan will be revised to include more guidance on that topic.
- 1.3.6 In order to strengthen safety assurance mechanisms regarding verification of EH&S work performance, the Division Director and Senior Staff will identify and implement systems for assessing and documenting that EH&S work is performed as authorized.

## 2. Self-Assessment Results for the 12 Performance Measures

This section summarizes the self-assessment results regarding the EH&S Division's performance on the 12 measures.

### *2.1 Division revises division ISM plan to reflect a) ES&H policy changes (including Work Lead responsibilities), and b) updates to the Institutional ISM plan. Line management communicates updates to the plan to division personnel.*

The EH&S Division revised their ISM Plan in early May 2008 to reflect ES&H policy changes and updates to the institutional ISM Plan. The draft revised Plan was distributed to the Division Senior Staff and the Division Safety Committee for review and comments. Those comments were resolved and incorporated into the final Plan, which was signed by the Division Director, DSCs and the EH&S Division Liaison, and posted on the EH&S Division web site in June 2008.

At the EH&S Division All-hands meeting held on May 2<sup>nd</sup>, the revision of the EH&S ISM plan was discussed and the following key changes were mentioned:

- Work Lead duties and training
- Division-specific training requirements
- Improvements to the Division's ES&H Programs including the Working Green Initiative.

The EH&S Group Leaders indicated that they also communicated the ISM Plan revisions to their workers through e-mail or at staff meetings. For most Groups, those staff communications were not documented. When employees from each Group were asked if they were aware of the ISM Plan revisions, most said that they were not. This indicates that line management communications on updates to the ISM Plan were less than adequate. In addition, some workers were not familiar with the general contents of the ISM Plan.

### *2.2 Per the Lab-wide implementation schedule, divisions ensure workers have a current Individual Baseline Job Hazards Analysis (JHA), authorizing regular and routine work that he/she performs, and if necessary one or more current Task-based JHA(s) to authorize unpredictable, short-term, or unusual work that is not included in the Individual Baseline JHA.*

100% of the EH&S Division's employees and guests have a completed and current Individual Baseline Job Hazards Analysis. EH&S Group leaders understand their JHA responsibilities, however some employees who were interviewed were uncertain about the JHA processes and the resulting training profiles.

*2.3 Divisions review work activities to identify, analyze, and categorize hazards and environmental impacts for the associated work. Examples of hazard inventory include: Hazards Management System (HMS) database (or equivalent), project safety review, workspace safety review, workspace safety review, Job Hazard Analyses (JHA), environmental review (NEPA/CEQA), and chemical inventory.*

The EH&S ISM Plan requires that the entries in the Hazard Management System (HMS) database for hazards and equipment be reviewed and updated once every 12 months. As of September 30, 2008, 57% of the existing HMS entries for Hazards and Equipment had been updated within the previous twelve months. Most of the HMS entries that were not updated within the past twelve months belonged to a single group that was in the process of moving during the self-assessment. Discussions with Group Leaders indicated that their understanding of the application and operation of the HMS Database is less than adequate.

The HMS Database for the Chemical Management System shows that the EH&S Division has chemicals at 46 separate locations. 16 individuals are listed as the responsible parties for those chemicals.

As stated in Section 2.2, 100% of the EH&S employees and guests have a completed and current Individual Baseline Job Hazards Analysis.

*2.4 Division participates in pollution prevention, energy conservation, recycling, and waste minimization programs, as appropriate for the environmental impacts of their activities.*

The EH&S Division has a Working Green Initiative as part of our commitment to environmental stewardship. This includes an emphasis on energy and resource conservation. The Division encourages employees to adopt specific measures in both areas of conservation. As evidence of their participation, each Group Leader provided a completed Environmental Review Checklist. All Groups are implementing some form of energy and/or resource conservation. Compared to the previous year, it appears that the rate of incremental improvements in conservation has decreased. To invigorate the Working Green Initiative, more creative conservation measures and techniques are necessary.

*2.5 Division ensures appropriate engineering and other safety/environmental controls are in place and properly maintained.*

The need for and maintenance of the following engineering controls is determined and documented through RWA/RWP/SSA procedures

- The Division has a laboratory in B75 Room 127 that has access control with a door lock that is alarmed.

- Building 70 Room 147 (Pit Room) is a property protection area with a close circuit television monitoring system, proximity access card system and real time radiation monitoring.
- Building 75A contains a Cesium-137 irradiator that is controlled with an interlock system.
- Building 75C contains legacy radioactive sources that are stored in a gated and locked property protection area.

Building 85 (Waste Management Facility) engineering controls requirements are based on DOE and LBNL regulations and documented in procedures.

A review of the EH&S Ventilation database and discussion with an employee determined that some data in the system was not current and a new employee has been hired to assist with maintaining the database.

No violations were received in FY 2008 related to the operation and maintenance of these engineering controls.

*2.6 Division ensures administrative controls are in place and maintained. Examples of administrative controls include: work authorizations (including but not limited to JHAs, AHDs, BUAs and RWAs), work permits (including but not limited to confined space, and energized electrical work), environmental permits, work procedures, and project safety reviews.*

The EH&S Division has one Activity Hazard Authorization (#2073) for onsite transportation and desensitization of reactive hazardous and mixed wastes. The AHD is active and will expire on April 15, 2009.

The Division has the following Radiological Work Authorizations (RWA), Radiological Work Permits (RWP), Sealed Source Authorizations (SSA), Low Activity Source Authorizations (LAS) and Generally Licensed Source Authorizations (GLA) with the following renewal due dates:

- RWA 1092: Due date 10/2009
- RWA 1122: Due date 7/2009
- RWA 1009: Due date 8/2009
- RWA 1149: Due date 2/2009
- RWP 07-017: Due date 7/2009
- RWP 04-001: Due date 2/2009
- RWP 08-002: Due date 10/2008

- RWP 08-001: Due date 5/2009
- RWP 08-004: Due date 10/2009
  
- SSA 202: Due date 12/2009
- SSA 207: Due date 3/2009
- SSA 205: Due date 7/2009
- SSA 132: Due date 2/2009
  
- LAS L009: Due date 6/2009
  
- GLA 403: Due date 1/2009
- GLA 415: Due date 2/2009

Two level II RWA non-compliance findings were received at the end of FY 2007 and corrective actions for those findings were documented in the RWA.

A level II violation was self-reported in August 2008 for RWA 1149 at the Hazardous Waste Handling Facility Radioactive and Mixed Waste Operations. The violation was for a waste container activity level that exceeded the authorized limits for opening. Occurrence Report Level 4 (SC--BSO-LBL-EHS-2008-0005) was submitted for this violation.

*2.7. Division ensures that ergonomic hazards (computer, laboratory, and material handling) are adequately controlled and that employees and line management are knowledgeable and engaged in this process, including the early reporting of ergonomic pain or discomfort (before an injury). Ergonomic issues/concerns discomfort/pain are reported promptly for immediate corrective action.*

- 136 EH&S Division workers were required to take EHS0059 (Remedy) and 100% of those workers completed that training.
- 66 EH&S workers were required to complete EHS0062 (WorkSmart Ergonomics) and 94% (62) completed that training.

The EH&S DSC and the EH&S Ergo Advocate present ergo statistics to EH&S Senior Staff and the Division Safety Committee each month. The Ergo statistics include reports on the status of recent ergo evaluation requests and the distribution of employees within the Remedy-based ergo risk categories (green-yellow-red). The presentation of this information has improved the control of ergonomic hazards and ensures that employees and line management are better engaged in ergo safety.

*2.8 Work is performed within the ES&H conditions and requirements specified by Lab policies and procedures. Performance criteria include work authorizations (including but not limited to JHAs, AHDs, BUAs, RWAs); work permits (including but not limited to confined space, energized electrical work); waste management criteria (SAAs, waste sampling, NCARs); and environmental permits and management criteria (resource conservation, pollution prevention and waste minimization).*

The EH&S Division verifies that work is being performed within ES&H conditions and requirements specified by Lab policies and procedures by performing safety walkarounds, discussions related to JHAs, line management oversight, and external agency inspections.

In FY 2008, the following three Category IV Occurrence Reports for waste management violations were submitted:

- SC--BSO-LBL-EHS-2008-0002 DTSC Violation for Inaccurate Container Volume
- SC--BSO-LBL-EHS-2008-0003 On 06/05/2008, Medical Waste Bags Without Secondary Containment Notice
- SC--BSO-LBL-EHS-2008-0005 Waste Container Activity Level Exceeded Authorized Limits for Opening

*2.9 Staff (including employees, participating guests, students and visitors) is properly trained.*

92% of the required ES&H person-courses for employees, participating guests, students and visitors were completed at the end of FY 2008.

*2.10 Division implements an effective safety walkaround program per the requirements of the Division ISM Plan. Ensure all personnel required to perform safety walkarounds, as defined in the Division ISM Plan, have completed EHS 27 Performing an Effective Safety Walkaround.*

All Group Leaders and all Supervisors except one have completed EHS 027 and all Group Leaders performed Safety Walkarounds in FY 2008. Most walkarounds were documented on the institutional checklist with one Group Leader preferring to use a checklist that he developed. Walkaround observations were documented on these checklists, however the recording of on-the-spot corrections was inconsistent. Some Group Leaders interpreted that term “on-the-spot” to mean in a timely manner or over a few days. Very few of the deficiencies found during safety walkarounds were recorded in the CATS system.

*2.11 Group performs a thorough review of all accidents, injuries, incidents, near misses and concerns according to Lab policy and the division's ISM plan. Corrective actions to prevent recurrence are identified, effectively implemented, and shared via the Lab's Lessons Learned and Best Practices database, as appropriate.*

In FY 2008, 11 work-related injuries occurred in the EH&S Division; two OSHA recordable and nine non-recordable injuries. One other injury occurred, was investigated and determined to not be work-related (see SAAR 005636 below). The injuries were reviewed per the process defined in PUB-3000 Chapter 5 Section 5.1. Supervisor's Accident Analysis Reports were prepared for all injuries. For OSHA recordable injuries, an Investigators Report and a TapRoot Summary Report was prepared. No lessons learned based on these injuries was generated.

SAAR Number	Nature of Injury	OSHA Non-Recordable/Recordable
0056336	Right hip, knee, left ankle and left wrist sprain and abrasions	Determined to not be work-related
0056761	Laceration (Skin) LK - LOWER LIMB Knee Right	Recordable
0056872	Repetitive Strain Injury UM-UPPER LIMB EXCPT DIGITS Multi/III Def	Non-Recordable
0057321	Repetitive Strain Injury XJ-MULTIPLE More Than 2 Sections of Body	Non-Recordable
0057535	Repetitive Strain Injury XJ-MULTIPLE More Than 2 Sections Of Body	Non-Recordable
0057546	Contusion LF - LOWER LIMB Foot	Non-Recordable
0058127	Contusion LK - LOWER LIMB Knee Right	Non-Recordable
0058237	Bite Insect/Animal Finger(s) Right Hand	Non-Recordable
0058349	Laceration (Skin) FF - Finger(s) Left Hand	Non-Recordable
0058654	Right wrist strain	Non-Recordable
0058901	Electrical Exposure Finger(s) Right Hand	Recordable
0058970	Cough TC - TRUNK - Chest Bilateral	Non-Recordable

2.12 *ES&H deficiencies that cannot be resolved upon discovery are entered in CATS in a timely manner and tracked to resolution. Deficiencies include those from workspace inspections, self-assessment activities, SAARs, Occurrence Reports, Non-compliance Tracking System Reports, environmental inspections, Division Self-Assessment, EH&S technical reviews, Management of ES&H (MESH) reviews, and external appraisals.*

- In FY 2008, the EH&S Division entered 29 non-programmatic and non-institutional corrective actions into the CATS database. At the end of FY 2008, 26 of those corrective actions were closed, two were open and one was overdue. Twenty-three of the corrective actions were low risk and six were medium risk.
- Thirteen corrective actions addressed findings from the MESH Review and Self-Assessment of the EH&S Division in FY 2007. All of those corrective actions were closed in FY 2008.
- Two corrective actions were entered into CATS from the 22 corrective actions indicated in the 11 SAARs noted in the previous section.
- Two corrective actions were from a management review of EH&S worker injuries.
- Two corrective actions were entered based on safety walkarounds.

### **3. Status of Corrective Actions from the PY 2007 MESH Review and the FY 2007 Self-Assessment**

Based on the findings from the PY 2007 MESH Review and FY 2007 Self-Assessment for the EH&S Division, the following corrective actions were implemented:

- 3.1 In order to prevent ergo injuries, an Early Intervention Program for the EH&S Division was implemented to more aggressively improve ergonomic safety. In addition, a new Ergo advocate for the EH&S Division was appointed and included in the monthly Safety Committee meetings. The Ergo advocate presented reports and data pertaining to the Division's performance in Ergonomic evaluations.
- 3.2 To improve compliance with Radiological Work Authorizations the Radiation Protection Group was reorganized and the Group leader has trained the staff to be more attentive to work authorization requirements to avoid future violations. The Self-Assessment guidance used by the EH&S Division Safety Committee was made more prescriptive regarding the identification and description of violations.
- 3.3 To improve the EH&S compliance rate for updating and completing JHA's and to improve the completion rate for required training, the Division Safety Coordinator

provided monthly status reports to the Division Safety Committee and the EH&S Division Senior Staff.

- 3.4 The Division Director worked with EHSD Group Leaders, Division Safety Coordinators and the EH&S Division Liaison to ensure that responsibilities for performing Division ES&H duties were better defined.
- 3.5 The EH&S Division has established a Working Green Initiative as part of our commitment to environmental stewardship. This includes an emphasis on energy and natural resources conservation. The Division encourages employees to adopt specific measures in both areas of conservation.
- 3.6 A Technical Assurance Plan was developed and implemented to review, analyze and trend data related to medical waste management at the Lab which will also include the EH&S Division.

#### **4. Planned Corrective Actions Based on the FY 2008 Self-Assessment**

- 4.1 The Division Director will request a review of the Division ISM Plan to include recommendations for improving the document and better methods for communicating annual updates to EH&S staff. Accepted recommendations will be implemented.
- 4.2 In order to improve EH&S Division usage and timely review of items in the Hazard Management System Database, a member from the Industrial Hygiene Group will provide training to the EH&S Senior Staff.
- 4.3 The Group Leader for the Hazardous Waste Management Group will investigate if the three occurrence reports involving waste management that occurred in FY 2008 represent a trend or have common causal factors.
- 4.4 To ensure that corrective actions from Supervisor's Accident Analysis Reports are entered into CATS appropriately, the Division Safety Committee will review recent SAARs at the monthly meetings.
- 4.5 To reduce uncertainty regarding when deficiencies are required to be entered into CATS, the Division ISM Plan will be revised to include more guidance on that topic.
- 4.6 In order to strengthen safety assurance mechanisms regarding verification of EH&S work performance, the Division Director and Senior Staff will identify and implement systems for assessing and documenting that EH&S work is performed as authorized.