

**LBNL/PUB-3105, Rev. 4**



# **Division ES&H Self-Assessment Manual**

**Revision 4  
June 2007**

**Office of Contract Assurance**

**Ernest Orlando Lawrence Berkeley National Laboratory  
University of California  
Berkeley, CA 94707**

**Prepared for the U.S. Department of Energy under Contract No. DE-AC02-  
05CH11231**

## Table of Contents

Table of Contents .....	2
1.0 Introduction .....	4
2.0 Roles and Responsibilities for Self-Assessment .....	5
3.0 ES&H Division Self-Assessment Performance Criteria .....	6
4.0 Division Self-Assessment Program.....	8
4.1 Planning Division Self-Assess Activities.....	8
4.1.1 Know the ES&H Requirements .....	8
4.1.2 Evaluate Against the Performance Criteria .....	8
4.2. Methods for Conducting Effective ES&H Self-Appraisals .....	10
4.2.1 Ongoing Informal Inspections – Safety Walkaround Program.....	10
4.2.2 Formal Inspections.....	10
4.3 Issues Management.....	14
4.3.1 Identifying and Tracking Deficiencies Through Resolution .....	14
4.3.2 Data Analysis .....	14
4.3.3 Lessons Learned.....	15
4.4. Division Annual ES&H Self-Assessment Report .....	15
5.0 List of Appendices .....	17
Appendix A: Current year ES&H Self-Assessment Performance Criteria	
Appendix B: Guidance for performing (current year) ES&H Self-Assessment	

**Record of Revisions**

<b>Rev. No.</b>	<b>Date</b>	<b>Description</b>
3	2/28/02	Changes to: <ul style="list-style-type: none"><li>- Addressing the ES&amp;H Performance Criteria</li><li>- LCATS Inspection Checklist</li><li>- Conducting Formal Inspections</li><li>- Assigning Hazard Levels</li><li>- How LCATS works</li><li>- What Information Goes Into LCATS?</li></ul> Updated Appendices A, B, C.
4	6/29/07	Changed document title and revised format.  Substantive changes based on recommendations from peer reviews.  Updated referenced to LCATS (now CATS) and OCA (now OCA)

## 1.0 Introduction

This Division ES&H Self-Assessment Manual describes how the Laboratory administers a division self-assessment program that conforms to the institutional requirements promulgated in the “LBNL Environment, Safety and Health Self-Assessment Program” (LBNL/PUB-5344, latest revision). The institutional program comprises all appraisal and reporting activities that identify environmental, safety, and health deficiencies and associated corrective actions. It is designed to meet U.S. Department of Energy (DOE) requirements for self-assessment. Self-assessment is a continuous process of information gathering and evaluation. A division self-assessment program should describe methods for gathering and documenting information, and methods to analyze these performance data to identify trends and root causes and their corrections.

**The term self-assessment is used to describe the program. The term self-appraisal is used to describe inspection and evaluation activities.**

This manual describes division self-assessment, one of the four types of assessments required as part of the LBNL Self-Assessment Program. The other types of assessments - Environment, Health and Safety (EH&S) Division technical assurance assessments, Safety Review Committee (SRC) Management of Environment, Safety, and Health (MESH) reviews, and Office of Contract Assurance Appendix B assessments - are described in the [LBNL ES&H Self-Assessment Program](#) (LBNL/PUB-5344, latest revision). This manual supports that program document and is intended to describe the following:

- Roles and responsibilities for the annual division self-assessment process.
- ES&H division self-assessment performance criteria development and framework.
- Division self-assessment program elements:
  - Planning self-assessment activities.
  - Methods for conducting effective self-appraisals.
  - Issues management: identifying and tracking ES&H deficiencies through resolution, data monitoring and analysis, and lessons learned.
  - Annual division self-assessment report.

## **2.0 Roles and Responsibilities for Self-Assessment**

### **2.1 Division Personnel**

Consistent with the principles of Integrated Safety Management, line management is responsible and accountable for ES&H compliance. This is the same management chain that is responsible for carrying out the division's mission. The division therefore must ensure that their line management, along with other division staff, actively participates in the division self-appraisals. Responsibilities for division personnel are as follows:

The division director:

- Ensures that the division's self-assessment program conforms to overall LBNL requirements.
- Allocates staff and budget to implement self-assessment program activities.
- Designates a person to be the lead (termed the self-assessment lead) in coordinating division self-assessment program activities. The lead is usually the division safety coordinator.
- Participates in self-appraisal activities.

Division management:

- Supports and participates in division self-appraisal activities.
- Ensures that corrective actions are effectively implemented.

The self-assessment lead:

- Organizes self-appraisal teams, including team leaders.
- Coordinates preparation of the annual division ES&H self-assessment report.
- Coordinates with other types of self-assessments, including ES&H Technical Assurance assessments, SRC MESH reviews, and OCA Appendix B assessments.

Each self-appraisal team leader:

- Organizes and coordinates formal inspections.
- Ensures that corrective actions are tracked properly.
- Coordinates with the supervisors (or principal investigators) whose operations are being inspected.

All employees are responsible for knowing the applicable ES&H requirements, for being aware of unsafe or unhealthy workplace conditions, for recognizing practices that have potential environmental impacts, and for initiating appropriate corrective actions (including notification of a supervisor).

The EH&S Division also can provide assistance through the EH&S division liaison program. Liaisons provide consultation or training on requirements and inspections. If requested, the division liaison can also participate in the division self-appraisals.

Divisions may also retain non-EH&S Division employees from other divisions to assist in self-appraisals.

## 2.2 EH&S Division

- Division provides assistance through the EH&S division liaison program.
- Liaisons support and participate in division self-appraisal activities as requested by divisions.
- Liaisons provide consultation or training on requirements and inspections.
- Assist in the development of new or modified performance criteria.

## 2.3 Office of Contract Assurance

- Meet with division representatives and EH&S program leads to develop new or modified performance criteria.
- Publish the annual division self-assessment performance criteria and maintain on the OCA website.
- Publish guidance for performing annual division self-assessments.
- Assist with division self-assessment planning efforts if requested.
- Manage the LBNL Issues Management Program – identifying and tracking deficiencies and associated corrective actions, effectiveness reviews, extent of condition, root cause analysis, data monitoring and analysis, and lessons learned.
- Validate division self-assessments.
- Prepare annual Labwide ES&H self-assessment report.

## 3.0 ES&H Division Self-Assessment Performance Criteria

### 3.1 Performance Criteria Development

At the beginning of each performance period, OCA meets with division representatives (typically division safety coordinators) and EH&S program leads to develop new or modified performance criteria. Self-assessment performance criteria are developed in alignment with institutional ES&H priorities, based on the following input:

- Significant PUB-3000 and institutional ISM plan objectives: EHS Division management, in consultation with the Office of Contract Assurance, identifies priorities and areas of concern that merit assessment through division self-assessment.

- Effectiveness review of the previous year's annual self-assessment process: The Office of Contract Assurance reviews the results of the prior year's division self-assessment process to determine if the assessments: 1) followed the proper protocol, 2) addressed institutional needs, and 3) identified the primary priorities and areas of concern (i.e. were events/ conditions manifest that should have been identified, but were not?). Lessons learned from this review are used to modify existing performance criteria and develop new criteria.
- An institutional risk-based gap analysis of assurance systems: The Office of Contract Assurance performs an annual risk-based assurance gap analysis to assess and rank significant ES&H risks. The risks are compared to existing assurance mechanisms to determine an appropriate assurance methodology. Division Self-Assessment, MESH reviews, ES&H Technical Assurance assessments, and other internal and external reviews are considered in determining appropriate assurance methods. When applicable, performance criteria are modified and/or newly developed to address these risks.

### 3.2 Integrated Safety Management Framework

A key objective of the division self-assessment is to evaluate how well the division is doing in maintaining Integrated Safety Management (ISM) in their operations and work activities. The self-assessment performance criteria are the primary indicators for ISM performance. In the performance criteria, specific expectations address the ISM core functions and guiding principles. For example, divisions are expected to communicate ES&H policies to all staff, evaluate all operations for hazard identification and control, complete required ES&H training, perform the work within the authorization basis, and provide feedback to improve the division ES&H program.

Although the performance criteria may change from year to year, the criteria are always based on the five core functions and seven guiding principles ISM. Division ES&H performance is therefore based on the division's ability to fulfill the five core ISM functions:

- Define the scope of work.
- Identify the hazards of the work.
- Develop and implement controls for the hazards.
- Perform the work as authorized.
- Sustain continuous improvement from regular feedback.

In carrying out these functions, divisions are guided by the seven ISM principles:

- Line management accountable for ES&H
- Clear ES&H roles and responsibilities for managers and staff
- Competency commensurate with responsibilities
- Balanced priorities between research or operations and environment, safety, and health

- Working within standards and requirements
- Hazard controls tailored to the work
- Authorization basis established for the work

## 4.0 Division Self-Assessment Program

Divisions develop a program to perform self-appraisals and to report on the status of environment, safety, and health within the division operations. Division self-assessment programs consist of:

- (1) Division planning - understanding the requirements, and focusing evaluations of division performance against the annual division Self-Assessment Program performance criteria and requirements of the division ISM plan.
- (2) ES&H self-appraisal activities – ongoing informal inspections (safety walkarounds) and formal inspections of division operations.
- (3) Issues management – identification and tracking ES&H deficiencies through resolution, data monitoring and analysis, and lessons learned.
- (4) Annual division self-assessment report.

### 4.1 Planning Division Self-Assessment Activities

#### 4.1.1 Know the ES&H Requirements

Division management, as well as self-appraisal team members, should be familiar with and understand DOE, federal, state, and Laboratory ES&H requirements that apply to division operations. These individuals may learn the requirements by any of the following methods:

- Referring to LBNL documents: the [LBNL Health and Safety Manual \(LBNL/PUB-3000\)](#), the LBNL [Worker Safety and Health Program \(LBNL/PUB-3851\)](#), and the LBNL [Chemical Hygiene and Safety Plan](#).
- Contacting the division's self-assessment lead person.
- Working with the EH&S division liaison and/or subject matter expert.
- Obtaining training.
- Including staff that already have specialized knowledge in formal inspections.
- Participating in formal inspections of other divisions.

#### 4.1.2 Evaluate Against the Performance Criteria

The annual self-assessment performance criteria must be evaluated and addressed in the annual division self-assessment report. At the beginning of each performance year, the division plans the actions it intends to take towards satisfying the self-assessment performance criteria and how, at year-end, the division will measure whether its self-assessment program goals have been

achieved. Planning for the division self-appraisal to address the performance criteria should include the following steps:

- Review the self-assessment performance criteria to determine how they apply to the division's operations. The division ISM Plan may require division-specific activities.
- Review the annual guidance on performing ES&H self-assessment.
- Identify actions the division will implement towards satisfying each applicable criterion.
- Determine the method(s) needed to appraise the effectiveness of implemented actions (e.g., inspections and review of documentation).
- Designate the self-appraisal teams.
- Schedule appraisal team activities.
- Contact OCA for assistance.

The current [ES&H Division Self-Assessment Performance Measures](#) are provided as Appendix A. The criteria are grouped by the five Integrated Safety Management (ISM) core functions. Within each core function are the specific expectations that the division must address in its self-assessment program. The performance expectations are concise descriptions of the activities and/or desired results indicative of implementation of each of the five core functions. Divisions may also use Guidance for Performing ES&H Division Self-Assessment (Appendix B). OCA validates division self-assessments to ensure consistency and quality of the data.

Evaluating division performance against the criteria and expectations should be done periodically throughout the year. Divisions should develop procedures for conducting the evaluations. Self-assessment to a large extent is reviewing data and information that provide the evidence for ISM performance. Much of the data and information should be readily available from the internal systems and processes of the division's ES&H program. Other division data are also available through the EH&S Division web site, OCA web site, and from EH&S functional managers.

The division evaluates its operations against the performance criteria through such appraisal methods as:

- Interviews with division personnel,
- reviews of documentation (e.g., training records),
- review of past appraisal findings, and
- reviews of formal inspection findings. (While inspections identify deficiencies at a single point of time, an evaluation requires the analysis of all deficiencies discovered over a period of time.)

The division may supplement the institutional performance criteria with additional ones specific to the division's operations.

## 4.2 Methods for Conducting Effective ES&H Self-Appraisals

### 4.2.1 Ongoing Informal Inspections – Safety Walkaround Program

Division employees should conduct informal continuous, ongoing inspections (or work monitoring) as part of their job responsibilities. Continuous inspection involves employees noting deficiencies and either correcting them promptly or initiating corrective action. Deficiencies not corrected on the spot are tracked in CATS (refer to section 4.3 *Issues Management*).

**A deficiency is a system, procedure, documentation, or piece of equipment in violation of a law, in noncompliance with a regulation, or in nonconformance with LBNL policy.**

Examples of deficiencies:

- A shop machine is not properly guarded.
- An employee is not trained in hazard communication.
- Chemicals are not properly stored or labeled for hazardous waste disposal.

Managers/supervisors and work leads have the additional responsibility to ensure that operations under their control meet all ES&H requirements. One component of this responsibility is to perform periodic safety walkarounds as needed and directed by divisional ISM plans, and for all work activities and facilities for which they are responsible.

Safety walkarounds are performed regularly as an integral management function. The purpose of a safety walkaround is to observe work, inspect the workplace, and talk with workers and support staff about the safe performance of work. Areas for improvement identified during the walkaround must be documented in CATS if a noncompliance is identified and tracking and follow-up are needed. Those managers, supervisors or work leads who will be performing walkarounds (as designated by the Division ISM plan) are required to complete EH&S Division sponsored training.

The EH&S Division will support the management walkaround program by providing programmatic guidance, initial and refresher training, a standard method that can be used to document the observations from safety walkarounds (checklist and/or database), and oversight/mentoring as needed and/or requested.

Integrating continuous inspections into normal work routines is an important goal of the LBNL Self-Assessment Program. Continuous inspections increase each individual's awareness of the potential for accidents or environmental damage, and his/her willingness to initiate corrective action.

### 4.2.2 Formal Inspections

The division conducts formal inspections to systematically identify deficiencies. Formal inspections are conducted by self-appraisal teams, are planned in advance, and usually make use of checklists to help identify applicable requirements. Deficiencies are noted and tracked in CATS (refer to section 4.3 *Issues Management*).

## The Self-Appraisal Team(s)

Division self-appraisals should include individuals with knowledge and understanding of

- Laboratory policies and division procedures for ES&H compliance,
- inspection techniques, and
- applicable ES&H requirements specific to division operations.

Although self-appraisal team members who participate in formal inspections are not expected to be “experts” in ES&H matters, they should have a sufficient familiarity with division operations and associated hazards to be able to communicate their findings to division management and staff.

**The self-appraisal team(s) can be comprised of members of the division’s safety committee. For self-assessment purposes, safety committee members are ideal candidates for the self-appraisal teams because of their knowledge and ancillary responsibility in ES&H.**

## Inspection Checklist

The LBNL Safety Walkaround Checklist (available on the [EH&S Division homepage](#)), provides a comprehensive listing of possible ES&H deficiencies and noncompliances that self-appraisal teams may encounter in their inspection of LBNL space and facilities. The Checklist is categorized by types of work environment or ES&H functional areas and includes descriptions and questions of specific deficiencies and noncompliances.

Divisions should review the Checklist by work environment or functional area and determine which ES&H issues are pertinent to their operations (e.g., chemical safety may not apply to a division that has only an office work environment).

Standardized inspection forms are a good way of documenting the inspection and recording information for later transfer to reports and databases. Divisions may develop customized checklists focused on the hazards specific to the division.

**Documentation may include notes of inspection results, date(s), and location(s); completed inspection forms; and/or CATS records.**

## Planning Self-Appraisals

Plan self-appraisals by taking the following steps:

- Review the current self-assessment performance criteria and expectations.
- Identify the documentation, databases, etc., needed to evaluate division performance against applicable criteria.
- Identify those performance criteria and expectations that require formal inspections to generate information on division performance.
- Obtain information on the applicable requirements.

- Create division checklists by using the LBNL Safety Walkaround Checklist and other resources.
- Arrange for “on-the-job” training (i.e., in the workplace) from the EH&S division liaison and/or subject matter expert to learn how to look for deficiencies and how to determine the appropriate corrective action.
- Provide orientation to the self-appraisal team members who will conduct the formal inspections. (OCA will assist if requested.)
- Schedule the formal inspections and evaluations.

Divisions are responsible for formally inspecting all of its operations and workspaces annually, unless identified hazards warrant more frequent inspections.

Divisions are not required to inspect rooftops, known asbestos-containing structures, and shared or common spaces (although if divisions observe deficiencies in these areas they should notify the responsible Laboratory Operations unit). Laboratory Operations units (e.g., Fire Department and Facilities Operations and Maintenance Group) perform inspections of shared/common spaces as part of their normal work routines. Roadways and pathways are not inspected under the LBNL Self-Assessment Program.

### **Conducting Formal Inspections**

Self-appraisal teams should follow recommended protocol for formal inspections; establish a positive atmosphere by focusing on fact-finding, not fault-finding; and, during the inspection, be active listeners: firm, friendly, and fair.

It is the responsibility of the team leader or self-assessment lead to become familiar with the operations to be inspected. Review past findings, permits, occurrence reports, accident reports, etc., for the areas to be inspected. Know the potential hazards, and wear the required protective equipment.

Let the supervisor (or principal investigator) know in advance the purpose of the inspection and what requirements and areas are being evaluated (e.g., air quality). Before actually beginning the inspection, notify the supervisor of the inspection team’s arrival and reiterate the purpose. It is preferable for the supervisor (or principal investigator) to accompany the inspection team.

If the inspection team notices an employee working unsafely, it is preferable to ask the supervisor, rather than the employee, to handle the situation. If the situation may cause death or serious physical harm to persons (permanent or prolonged impairment of the body or temporary disablement requiring hospitalization), then follow the Laboratory’s stop work policy.

### Stopping Unsafe Work

**When employees discover conditions or practices that appear to constitute an imminent danger, they must take the following actions to prevent serious injury:**

Stop their own work immediately if it is related to the danger.

Alert the affected employee(s) or contractor(s) engaged in the unsafe work creating an imminent-danger condition and request that the work be stopped.

Call x6999 to report the incident; EH&S staff will investigate it

Reference: PUB-3000, Chapter 1

Answer as many questions as possible without letting the questions interfere with the inspection. An inspector can say, "I'll get back to you on that when I get more information." Preserve independence and objectivity. Try to understand, but do not become overly sympathetic with the inspected person's situation.

#### Things to say in a formal inspection:

"I'm here to inspect compliance with hoists/crane requirements. Would you mind if I observed you while you go through your routine?"

"Which of your facilities has the most effective lockout/tagout program?"

"I'm here to inspect your hoods. I hope I'm not disrupting your work."

"Thank you for showing us your work area."

#### Things not to say in a formal inspection:

"Why don't you have a lockout/tagout program?"

"This is an unsafe situation. I'm closing you down." (to the employee)

"Boy, this looks bad. How long have you been doing it this way?"

"You say you're a chemist? I can't believe you would store flammables and corrosives together!"

Do not become so focused on checklist items that you miss hazards that may not even be addressed by any of the checklists. Simply checking off items is NOT an effective inspection. A deficiency noted in an inspection should be recorded, even if it is not on the checklist.

Try to develop and/or identify a corrective action for each identified deficiency. (If the deficiency involves complex processes or equipment, confer with the principal investigator or supervisor.) If there are questions about the appropriate corrective action (e.g., the inspector is not sufficiently knowledgeable, the requirement is subject to interpretation, or the correction is complex), consult with the EH&S division liaison or subject matter expert.

Look for noteworthy practices during the inspections, and document these on inspection forms. Include them in the inspection debriefing, and describe them in the division's annual self-assessment report.

## Closing Out a Formal Inspection

Close out a formal inspection by meeting with the supervisor (or principal investigator) to acknowledge noteworthy practices and discuss deficiencies.

Take the opportunity to discuss corrective actions (particularly for complex processes or equipment where a corrective action could affect a process or experiment). Identify deficiencies that can be corrected immediately, and encourage the supervisor to make those corrections.

Do not specify names when describing deficiencies unless the employee is working in an unsafe and potentially dangerous manner.

Following the formal inspection, team members should meet to finalize the information that will be entered into CATS to document the deficiencies and track the corrective actions.

## Inspection Debriefing

The team leader debriefs the supervisor (or principal investigator) on the inspection findings to (1) ensure that the deficiency and corrective action information that will be entered into CATS is accurate, (2) provide feedback, and (3) identify or clarify persons responsible for initiating corrective actions implementation.

The division determines the criteria for designating a corrective action responsible person (ensures that a corrective action is implemented). The responsible person identification supports the ISM concept of line management responsibility and accountability for ES&H.

Deficiency information (i.e., records) should be entered in CATS while information is fresh in the inspectors' minds. The division safety coordinator, the self-assessment lead, the inspector, or an assigned data entry person may enter data, working from data entry forms completed by inspectors.

The division may choose to enter data into CATS and produce a debriefing report of the inspection to confirm the deficiencies and corrective actions to the supervisor (or principal investigator). Following debriefing, update CATS deficiency records as necessary.

## 4.3 Issues Management

### 4.3.1 Identifying and Tracking Deficiencies Through Resolution

Divisions are required to enter assessment findings and corrective actions into the Laboratory's Corrective Action Tracking System (CATS). CATS is used to document and track through resolution issues identified from employee discovery, internal or external oversight assessments, external reporting, suggested process improvements and associated actions that require formal corrective action. The Laboratory's *Issues Management Program* document (LBNL/PUB-5519 (1), latest revision) and *CATS Database User Manual* (OIA-OCA-0001) contain detailed guidance on issues identification, tracking, resolution, closure, validation, and effectiveness of corrective actions.

### 4.3.2 Data Analysis

Periodically (e.g., upon completion of all formal inspections, at mid-year, or at year's end) the division should analyze deficiencies, individually or collectively, in order to identify

programmatic or system issues and to identify recurrence of issues, generic issues, trends and vulnerabilities at a lower level before significant problems result. The Laboratory's *Data Monitoring and Analysis Program* (LBNL/PUB-5519(3), latest revision) contains detailed guidance on data monitoring and analysis.

### 4.3.3 Lessons Learned

Incidents discovered during the course of assessment may warrant development and dissemination of a Lessons Learned Briefing. Lessons Learned Briefings are initiated and documented in the Lessons Learned/Best Practices database. Deficiencies identified as a result of a Lessons Learned Briefing will be identified and tracked through resolution in CATS in accordance with LBNL/PUB-5519 (1). The Laboratory's *Lessons Learned and Best Practices Program* (LBNL/PUB-5519(4), latest revision) and the *Lessons Learned/Best Practices Database User Manual* (OIA-OCA-0002) contain detailed guidance on Lessons Learned development, dissemination and feedback.

## 4.4 Division Annual ES&H Self-Assessment Report

The division reports the results of its evaluations against each of the performance criteria in its annual division self-assessment report. The annual division reports are due to OCA shortly after the end of the fiscal year.

The division prepares a written evaluation of its operations against each of the self-assessment performance criteria. It bases its evaluation on the measurement and validation methods agreed to at the beginning of the performance period. The agreed-upon performance criteria and rating methodology are maintained at OCA's [ES&H Assurance](#) website and are included in Appendix A.

The division report should be a clear and concise description of division performance to meet the self-assessment criteria. Although the format is flexible, all division annual reports should include the following:

- Introduction/Executive Summary: Provide an overview of the division organization and mission, the self-assessment approach taken by the division (i.e., descriptors of self-appraisal teams, inspections, and follow-up actions), and the overall self-assessment results.
- Highlights of Division ES&H Performance: Summarize the division ES&H performance by including information on injury/accident statistics, summary of ORPS-reportable events, working within authorizations, corrective actions, noteworthy practices, and opportunities for improvement.
- Division Appraisal Against Performance Criteria: Describe the division process and results and/or include division performance data to address each of the self-assessment performance criteria and expectations. The division should assess their performance against the performance criteria.
- Conclusion: Summarize the division's self-assessment process, including any lessons learned. Any institutional issues that were raised as a result of the self-assessment process should also be addressed here. Describe briefly any new goals and objectives

for the following year's self-assessment, including corrective actions to address opportunities for improvement.

The annual division self-assessment report is the division's opportunity to communicate to Laboratory management its concerns in the ES&H areas, and to suggest methods for improving Laboratory as well as division performance.

OCA will validate the assessment quality and results. The validation enables the Laboratory to "roll up" self-assessment activities Labwide for reporting to Laboratory management and DOE. OCA distributes the Labwide report to all divisions to share lessons learned from the self-assessment activities.

## **5.0 List of Appendices**

**Appendix A:** [Current year ES&H Self-Assessment Performance Criteria](#)

**Appendix B:** Guidance for Performing (current FY) ES&H Division Self-Assessment