

ES&H manual

Environment, Safety, and Health

Volume I

Part 4: Feedback and Improvement

Document 4.1

Directorate Environment, Safety, and Health Self-Assessment Program

Recommended for approval by the ES&H Working Group

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New document or new requirements

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- New document
 Major requirement change

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4.1

Directorate Environment, Safety, and Health Self-Assessment Program*

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* Major revision

1.0 Introduction

This document describes and sets forth the requirements for the Lawrence Livermore National Laboratory (LLNL) directorate-level Environment, Safety and Health (ES&H) self-assessment program. The directorates and other directorate-like organizations, such as the Director's Office, conduct self-assessments of ES&H and quality assurance (QA) within each directorate. The directorate ES&H self-assessment program integrates the requirements for management assessments under Criteria 9 of LLNL's QA Plan with the Laboratory's Integrated Safety Management System (ISMS) requirement for self-assessment, in order to provide feedback and achieve continuous improvement.

This document also specifies requirements for the LLNL Annual ES&H Assurance Report prepared by the Assurance Review Office (ARO).

The directorate ES&H self-assessment program supports the LLNL self-assessment program, which provides both a directorate review and an institutional overview of ongoing work activities, facility infrastructure, workspaces, and ES&H-related programs and processes, with a goal of achieving a safe and environmentally sound workplace. In support of this objective, this *Environment, Safety and Health (ES&H) Manual* document sets minimum levels of expectations for self-assessment programs and requirements to ensure that the annual ES&H performance reports prepared by the directorates contain sufficient common information to facilitate summation into a Lab-wide report.

The LLNL self-assessment program is an essential element for implementing Core Function 5, "Feedback and Improvement," of the ISMS Description, and Criteria 9 and 10 of the LLNL Quality Assurance Plan. (See Document 41.1, "LLNL Quality Assurance Program," of the *ES&H Manual*.) This program provides a systematic and rigorous approach to:

- Proactively identify ES&H-related issues.
- Provide information to the appropriate management level so that issues can be understood, addressed, tracked, budgeted, and shared, as appropriate.

A successful self-assessment program begins with a culture that encourages workers at all levels to identify and communicate a broad range of problems and noteworthy practices. Working together, managers and workers identify problems, correct performance shortfalls, and continuously improve processes and activities. Self-assessments:

- Are important for safe and reliable operations.
- Are designed to review and evaluate performance in relationship to applicable requirements in the ES&H Manual.

- Ensure that ES&H-related and QA deficiencies are identified, analyzed, and managed.
- Determine whether an organization is accomplishing what it committed to do, whether work is being performed as expected by management, and to what extent the organization's goals have been attained.
- Communicate a broad range of issues and best practices to management and across the Laboratory.

2.0 Scope

The directorate self-assessment programs comprise a major part of the overall self-assessment program of ES&H at LLNL. Figure 1 shows the relationships between the elements of the overall self-assessment program. This figure shows (1) four layers of directorate self-assessments in the truncated triangle at the core of the diagram; (2) institutional assessments by the Assurance Review Office (ARO), the office for the Price-Anderson Amendments Act (PAAA) and the Laboratory Assurance Office (LAO) and others across the top; (3) reviews of specific events on the left side; and (4) reviews of ES&H programs and services on the right side. Integrated into the directorate self-assessment program is the work of the ES&H experts who support the work of the directorates while maintaining their institutional role. ES&H experts may conduct self-assessments for the directorates upon request. All of these reviews are important in assuring that LLNL is maintaining and improving a safe workplace.

Each directorate assesses ES&H performance during the course of the year, and annually reports the results in a formal report. The ARO annually compiles the results from the self-assessments into an institutional ES&H report. Many other assessments are conducted by LLNL (i.e., those outside of the truncated triangle in the figure), but these are outside of the scope of this document and are described in other documents in the *ES&H Manual*. Event based reviews (on the left) are described in Document 4.3, "Occurrence Reporting and Processing of Operations Information;" Document 4.4, "Identification, Reporting, and Tracking of Noncompliances with Nuclear Safety Requirements;" and Document 4.5, "Incidents – Notification, Analysis and Reporting," in the *ES&H Manual*. Quality reviews (on the right) are described in Document 41.1, *LLNL Quality Assurance Program*.

3.0 Directorate ES&H Self-Assessment Program

A directorate should manage its ES&H self-assessments in order to (1) support the directorate's mission, (2) effectively communicate the status of ES&H and ISMS, and (3) foster continuous improvement. This document's requirements apply to self-assessments conducted beginning in January 2004, and to Directorate Annual ES&H Performance Reports due after January 2004.

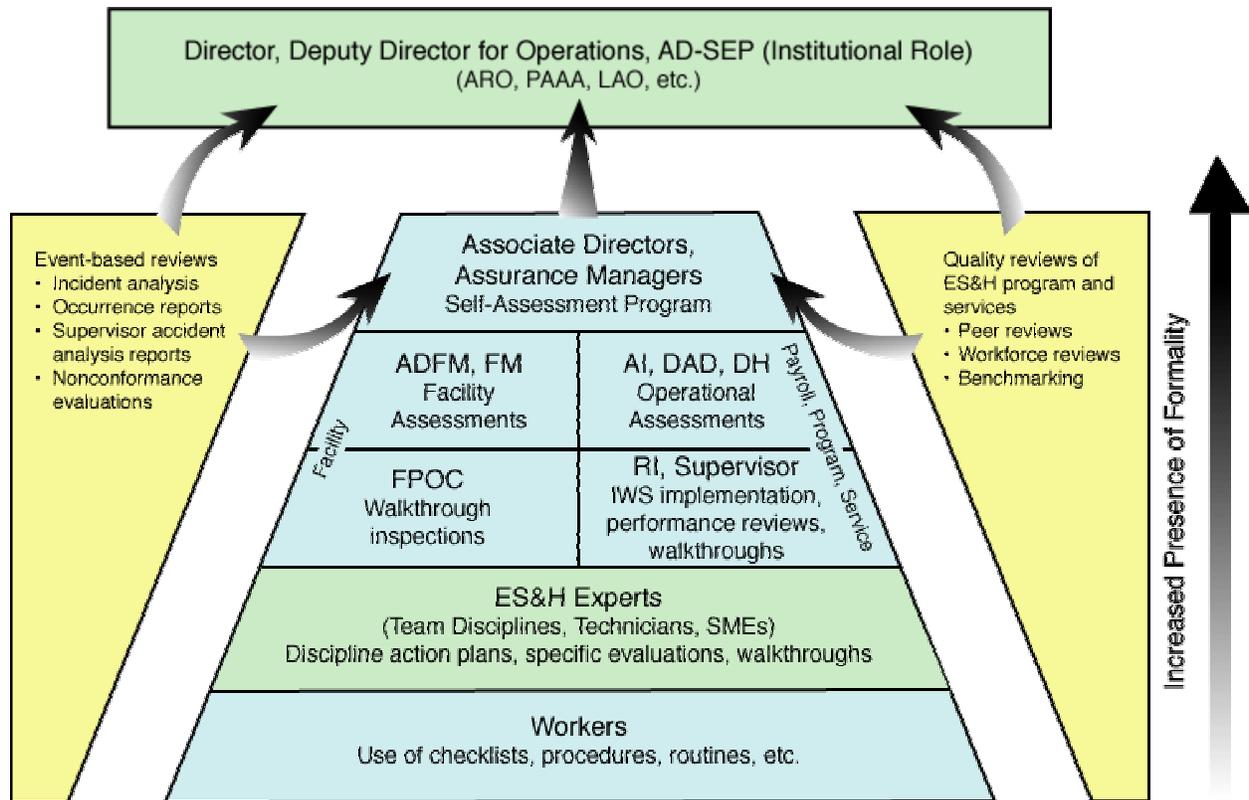


Figure 1. Overall ES&H self-assessment program at LLNL.

A self-assessment program includes three parts: 1) planning, 2) conducting assessments, and 3) communicating results. Planning includes reviewing the directorate operations, activities and facilities, evaluating and determining the level of assurance, and selecting an assessment method that is appropriate for these elements and which will provide the information needed to assure performance. In planning self-assessments, the frequency, applicable standards, and level of hazard should be considered. The selection and planning of specific reviews should balance subtopics, frequency, and cost with potential gain.

The assessment activity includes performing specific reviews of ES&H activities and compares them, in a systematic way, to standards incorporated in the *ES&H Manual*, or, if the directorate has unique hazards not addressed in the *ES&H Manual*, to WSS consistent with the *Manual*. The method selected is based on an understanding of the activity, expectations, and potential weak points. Self-assessment includes follow-up assessments of revised processes. The form and depth of an assessment depends on the hazards or risks associated with the subject facility or operations.

Self-assessment results are documented and provided to those who will be required to respond, the managers of the activity reviewed, and depending on the outcome of the self-assessment, those who have responsibility to change broader management systems, processes, and organization.

Directorate self-assessments shall address the following areas:

- Implementation of ISMS. The ISMS Description requires each directorate to conduct an annual ISMS self-assessment (i.e., an evaluation of its implementation of the ISMS). The ISMS self-assessment includes a review of a representative number of work activity level (WAL) B and C activities. Each directorate is to complete a matrix, approved by the ES&H Working Group, that facilitates the assessment of ISMS implementation. This matrix includes key questions on each of the five Core Functions and seven Guiding Principles of ISMS. The responses to these questions are considered to be “leading indicators” for ES&H performance. Each directorate shall also review its ISMS Implementation Plan (or succeeding document) to ensure that the plan remains workable, current, and in conformance with the ISMS Description.
- ES&H- and QA-related requirements in the *ES&H Manual*, which apply to the various levels of facility, management, and operations. At a minimum, each directorate should review the list of Laboratory Self-Assessment Focus Areas compiled by the ES&H Working Group to identify if these topical areas are relevant to its operations or facilities. Directorates identify and prioritize the operations and topics to be assessed, according to the hazards associated with the operations and facilities they manage.
- Management participation. Management approves the Self-Assessment Plan, funds the self-assessment activity, and reviews the results. Managers and supervisors conduct periodic field visits to review operations, activities and facilities with an eye to ES&H and to converse with workers as part of the overall self-assessment program.
- Accomplishing ES&H goals. Each directorate has environment, health and safety goals and implements programs to achieve them. They evaluate the success of these programs and barriers to achieving their goals.
- Management of corrective actions and issues. ES&H-related deficiencies and lessons learned are identified, analyzed and prioritized in a timely manner and are managed to minimize occurrence or recurrence. Issues are managed to resolution.

Each directorate shall:

- Develop a Directorate ES&H Self-Assessment Plan (see Section 4.0).
- Conduct ES&H self-assessments.
- Communicate results and issue a Directorate Annual ES&H Performance Report for each calendar year.
- Respond to items identified in the self-assessments.

4.0 Directorate ES&H Self-Assessment Plans

Each directorate shall develop a Directorate ES&H Self-Assessment Plan for assessing ES&H performance and issues associated with its facilities and operations. The plan describes the directorate's self-assessment activities, provides a schedule for completing assessments, and identifies the documents to be generated.

The Directorate ES&H Self-Assessment Plan is to be approved by the Associate Director (AD). The plan and its schedules shall be reviewed annually and revised as needed to reflect changes in the directorate's organization or in institutional requirements that may have an impact on the Self-Assessment Program.

Each Directorate ES&H Self-Assessment Plan shall contain the following components:

- A list of responsibilities and authorities relevant to the self-assessment program. This list is to be consistent with Document 2.1, "Laboratory and ES&H Policies, General Worker Responsibilities, and Integrated Safety Management," in the *ES&H Manual*.
- A list of the directorate's facilities including the types of hazards, environmental elements (such as environmental commitments, mitigations, and other aspects), and the hazard classification. This list includes enough information to assign a frequency for conducting facility self-assessments.
- Schedule of self-assessments. List, or refer to a list of, the schedule for conducting self-assessments that are to be documented. The frequency and priority of these self-assessments depends on the types of hazards and environmental aspects present in the facilities and during operations, and shall not be less than once every three years.
- A list of planned directorate-specific and topical area self-assessments, including the applicable self-assessment focus areas and unique operations, if there are any in the directorate.
- A statement of the required manager and supervisor walkthrough program.

- A description of how records are to be maintained and who is responsible for maintaining them.
- References. List applicable directorate documents that were used as references in developing the Directorate ES&H Self-Assessment Plan.

The Self-Assessment Plan is distributed within the directorate to those who will be the subject of reviews, and to managers who rely on the self-assessment program in the performance of their job.

5.0 Guidance for Conducting Self-Assessments

Self-assessments may be performed either by a team or by a single person. The persons participating in the self-assessment should have the skills, background, and experience that match the assignment. Individuals involved need to understand the operations to be assessed and the associated requirements and hazards. A self-assessment can be conducted by ES&H support organizations, outside contractors or consultants selected by the directorate, or workers conducting or managing the operation or facility. Managers are encouraged to participate as members of self-assessment teams to provide operational expertise or a broad management perspective. Self-assessment teams may include members from organizations in other directorates.

Assurance managers have observed that the most difficult part of conducting a self-assessment is the evaluation. The evaluation distinguishes a self-assessment from an inspection. A self-assessment is a process by which an organization reviews and evaluates its performance in relationship to a standard, established requirement, or goal. The self-assessment determines:

1. Whether we are performing necessary actions to:
 - a. Meet various accountability requirements.
 - b. Be in compliance.
2. Whether our actions, facilities, and equipment are performing as expected, including the effectiveness of operating processes and procedures, line management, and “engineering” controls.
3. The extent to which goals have been attained.

An inspection, on the other hand, is a physical examination or measurement that verifies whether an item or activity meets specifications or other specified requirements. The inspector carefully and critically examines an item or activity in order to detect flaws or errors and to verify and document compliance.

A self-assessment program should include a mix of inspections, surveys, reviews, and self-assessments as described in the plan.

Audits, appraisals, and reviews are similar to self-assessments in that they all include the evaluative process. Audits, appraisals, and reviews are different from Self-Assessments, however, in that they are conducted by one organization to evaluate another entity (independent from the first). As with self-assessments, these processes include evaluations that may be based, in part, on information gathered by inspection.

Before conducting an assessment, the results of previous self-assessments, regulatory inspections, Department of Energy (DOE)/National Nuclear Security Administration (NNSA) assessments, and other past audits pertaining to that location or operations should be reviewed to identify any open or ongoing issues that may require additional attention.

6.0 Managing Assessment Results

Results from self-assessments are documented and reviewed by (or shared with) the manager responsible for the area or the topic being assessed or evaluated. Ongoing discussions of potential issues can facilitate issue characterization and acceptance by the responsible persons.

Formal self-assessment information is entered into the Deficiency Tracking System (DefTrack) or the Issues Tracking System (ITS) as described in Document 4.2, "Environmental, Safety, and Health Deficiency Tracking System," in the *ES&H Manual*. Managers verify that the deficiencies are promptly entered into the DefTrack or ITS and manages them to resolution. When a manager determines that an issue or deficiency identified by a self-assessment does not warrant further action, the decision is documented. Feedback should be provided or made readily available to the identifier in such a way as not to discourage future problem identification.

Self-assessment results are to be communicated to the groups or individuals affected by the results and those who rely on the assessed operation or facility. Management should review the results of self-assessment activities with workers to improve performance. Results can be communicated in meeting discussions, performance indicators posted in the workplace, e-mail notes, and DefTrack or ITS reports.

Issues identified are resolved in a manner that is timely and commensurate with their impact on safety and reliability. For example, LLNL requires that special attention be given to situations discovered during any assessment and determined to be highly dangerous. Imminently dangerous situations (DefTrack priority 1A) shall be stopped and mitigated immediately. Situations considered serious (DefTrack priority 1B) shall be mitigated within five working days of discovery.

6.1 Assessment Records

Assessment records shall be retained for a minimum of four years, or for a period of time consistent with other specific requirements, such as the LLNL Records Retention Schedule. It is expected that the records will provide sufficient documentation to support the conclusions of the self-assessment. Records shall be made accessible to the ARO and authorized auditors upon request. Assessment records shall include:

- A statement of the scope of the assessment activity.
- The results from the assessment, including findings, evaluations, and conclusions.
- The date the assessment was completed.
- The names of the organization or individuals who performed the assessment.

7.0 Directorate Annual ES&H Performance Reports

A directorate-level annual report is to be prepared by each directorate to document the implementation status of ES&H programs and ISMS within the directorate for the calendar year. The associate director shall indicate his or her approval of the report by signature or other means.

The Directorate Annual Report is to be distributed to the managers and workers who may need to know the status of ES&H in their directorate in the performance of their job. Prior to May 1, four months after the close of the subject-year, the Annual ES&H Performance Report is to be provided to the Deputy Director for Operations. A copy of the report is also to be provided to the ARO.

The Directorate Annual ES&H Performance Report shall include the following information:

7.1 Summary

This section presents a summary of the directorate's ES&H performance in the subject year, including an evaluation of the level of implementation of ISMS. The summary is based on the results from the directorate's ES&H assurance and self-assessment activities.

7.2 Integrated Safety Management System

This section includes an evaluation of ISMS implementation in the directorate, including conclusions of the evaluation of implementation of each ISMS Core Function and Guiding Principle. This section presents or provides an accessible reference to the directorate's completed ISMS evaluation matrix, a description of the process used and

activities evaluated, and the results of the directorate's review of its ISMS Implementation Plan (or succeeding document).

7.3 Effectiveness of the Directorate ES&H Program

This section shall include an evaluation of the following elements:

- ES&H performance, including
 - Completion rate for ES&H training.
 - Reportable occurrences and incidents.
 - Illness and injury statistics.
 - Radiation, chemical and physical agent exposures received by directorate workers, if any.
 - Environmental releases or violations, if any.
- Results from external appraisals of the directorate conducted during the assessment period.
- The directorate's significant contributions in helping to meet LLNL's ES&H performance measures.
- Trends, repeat occurrences, and identified ES&H issues, and vulnerabilities. This section is to provide a substantive analysis of the ES&H factual observations collected during the year.
- Results for the directorate-specific and topical area self-assessments, including the applicable self-assessment focus areas and unique operations if there are any in the directorate.
- Status of ES&H items entered into the DefTrack, Issues Tracking System, or other tracking system the directorate may be using.
- Actions taken in response to the underlying factors or deficiencies identified in previous annual reports.
- Actions taken as a result of the LLNL Lessons Learned Program.

7.4 Management and Worker Involvement

This section describes (1) how workers and management were involved with implementing and improving ES&H performance, and (2) a summary of the results of the management walkthroughs and reviews.

7.5 Self-Assessments Conducted

This section reports the status of the self-assessment activities specified in the Directorate's ES&H Self-Assessment Plan and whether they were completed, deferred, or cancelled. It provides or references an accessible list of assessments and describes other activities, if any, that were utilized to develop and support the conclusions in the Directorate Annual ES&H Performance Report.

7.6 Conclusion

This section contains recommended actions that managers can take to improve performance.

8.0 LLNL Annual ES&H Assurance Report

The ARO prepares the compiled institutional LLNL Annual ES&H Assurance Report, which is based on information from the Directorate Annual ES&H Performance Reports and other ES&H information. The LLNL Annual ES&H Assurance Report includes the following information:

- An evaluation of directorate and institutional implementation of ISMS, including a compilation of the ISMS evaluation "stoplight" matrices completed by the directorates.
- An analysis of whether LLNL has the systems and requirements in place to assure ES&H performance, whether they have been implemented, and if they are effective. This analysis is based on directorate reports, ARO assessments and external assessments.
- A summary of the results of ARO's independent reviews and external reviews conducted during the calendar year.
- A summary and an analysis of what was learned from reportable occurrences and incidents. This analysis is based on directorate reports and ARO assessments.
- A summary and an analysis of ES&H-related institutional deficiencies and issues and the actions taken to correct them. The analysis of issues includes the underlying factors, and trending, as appropriate.
- Noteworthy practices and identification of potential areas for improvement.
- A summary of ES&H performance and any recommended actions to improve performance.

The conclusions of the report are grouped by the five Core Functions and seven Guiding Principles of ISMS.

The compiled institutional LLNL ES&H Assurance Report will be transmitted to the Deputy Director for Operations. Copies will be distributed to the Associate Directors and Assurance Managers for their information and any required responses.

9.0 Responsibilities

The responsibilities for each individual and organization are listed under each title.

9.1 Workers

Workers shall:

- Notify management of ES&H deficiencies, issues, and concerns.
- Participate in assessments of their work areas, when appropriate.
- Participate in the corrective action process, when appropriate.

9.2 Managers

Managers shall:

- Assess their assigned operations and facilities.
- Ensure that corrective actions are implemented, tracked and verified.
- Ensure that workers are involved in self-assessments and related corrective actions of their work areas.

9.3 ES&H Support Organizations

ES&H support organizations shall:

- Notify the affected directorate of assessments and inspections conducted on behalf of the directorate.
- Provide a copy of the assessment and inspection reports to the responsible management chain and the directorate assurance manager.
- Immediately bring imminently dangerous situations or serious violations to the attention of the authorizing work supervisor or facility point of contact.

9.4 Assurance Managers

Assurance managers shall:

- Prepare the Directorate ES&H Self-Assessment Plan and the Directorate Annual ES&H Performance Report.
- Provide independent oversight of directorate facilities and operations to assure proper implementation of the ES&H program and activities within the directorate.
- Ensure that the results of self-assessments are tracked in the institutional database and that the DefTrack rollup (i.e., monthly summary) file or the Issues Tracking System data is provided to the ARO.

9.5 Assurance Review Office

The ARO shall:

- Review the adequacy of Directorate and Institutional ES&H Programs.
- Prepare the compiled institutional LLNL ES&H Assurance Report.

9.6 Associate Directors

Associate Directors shall:

- Approve the directorate Annual ES&H Performance Report and submit it to the DDO.
- Authorize and approve the Directorate ES&H Self-Assessment Plan.
- Provide resources and other support for the performing of self-assessments.
- Ensure funding for corrective actions that are identified or developed from the results of the directorate ES&H self-assessment program.

10.0 Work Smart Standards

10 CFR 830.1 to 830.7, "Nuclear Safety Management," and Subpart A, "Quality Assurance Requirements" (830.120 to 830.122).

DOE O 414.1A, "Quality Assurance," Attachment 1, Contractor Requirements Document.

11.0 LLNL Contacts

Contact the following individuals and groups for additional information about this document:

- Directorate assurance offices.
- The ARO.
- ES&H Teams.