Continuous and long-term safety, health, and environmental (SHE) excellence cannot be achieved solely by implementing technical programs, exposure controls, and other compliance initiatives. Instead, laboratories must have a systematic management approach for SHE activities (i.e., well-designed and well-executed management practices that can be applied to all functional areas and technical programs).

Effective management practices go beyond compliance, enabling employees to work more independently and allowing management to spend less time on detailed supervision of SHE matters. In addition, well-designed management systems promote continuous improvement by stressing clear goals and objectives, frequent measurement of results, and periodic review of program effectiveness. In fact, the U.S. Occupational Safety and Health Administration (OSHA) has recognized the importance of effective management in reducing the number and severity of workplace injuries and illnesses as demonstrated by the promulgation of the "Basic Program Elements for Federal Employees" and the "Program Management Guidelines for Managing Worker Safety and Health."

According to OSHA and other leading organizations, such as the International Standards Organization, effective management of SHE involves several activities that are essential to understanding all hazards and risks, and preventing or controlling these hazards and risks. Chapter A provides guidance for those practices related to:

Chapter	Topic
A2	Management Leadership and Employee Involvement
A3	Contractors and Visitors
A4	Recordkeeping and Document Control
A5	Evaluation of Program Effectiveness

1.0 Introduction

Safety, health, and environmental (SHE) regulations are increasingly emphasizing the importance of management leadership and employee involvement in managing risks. In fact, the major element of the U.S. Occupational Safety and Health Administration (OSHA) program guidelines describes the leadership that management must exhibit to effectively communicate a commitment to worker safety, and to encourage employee involvement in the SHE program. This element consists of the following management principles:

- Policies and management commitment
- Goals and objectives
- Responsibilities
- Authority and accountability
- Employee involvement

Ideally, these actions should not be developed or implemented individually, but used together to complement one another and add to the overall effectiveness of an EPA laboratory's SHE programs. The following sections provide suggestions for implementing each of these management principles.

EPA Requirements

For effective implementation of management principles for EPA laboratory SHE programs, the following must be performed:

- Communication of EPA SHE policy
- Establishment of clear goals and objectives relative to SHE performance
- Clear definition of the roles and responsibilities of the laboratory staff and management
- Establishment of a laboratory safety committee

Program Administration

To effectively implement management principles, responsibilities should be assigned for:

- Promoting staff awareness of SHE policy
- Ensuring that clear roles and responsibilities have been delegated and communicated effectively to laboratory staff
- Incorporating SHE responsibilities into job descriptions
- Chairing and participating on the laboratory safety committee
- Establishing job performance measures

2.0 SHE Policy and Management Commitment

A formal written SHE policy issued by top management is fundamental to the success of any SHE program. If laboratory staff can see and read the commitment that management has made to SHE issues, then the first step to SHE vigilance has been taken. In addition, a written commitment makes it easier for laboratory management and staff to resolve conflicts between SHE issues and other priorities (i.e., productivity, turnaround time, etc.).

At the EPA, senior management leadership and commitment to strong SHE performance is demonstrated through the SHE policy. The details of this policy and the importance of communicating this policy to all staff are discussed in the following sections.

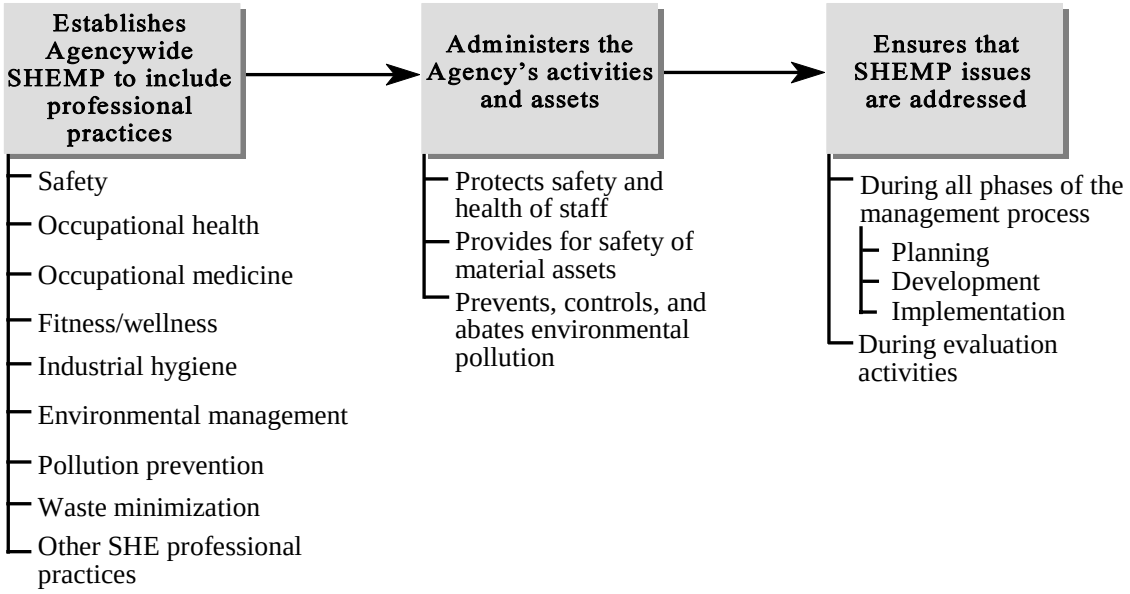
2.1 EPA SHE Policy

The President has directed the head of each federal department and agency to establish a safety, health, and environmental management program (SHEMP) to ensure that federal employees are provided safe and healthful workplaces, and that federal employees comply with all federal, state, interstate, and local environmental mandates. The EPA is firmly committed to meeting this order and ensuring strong SHE performance. As such, the EPA does the following, as shown in Figure A2-1.

2.2 Communication of Policy

The commitment of Laboratory Directors is a cornerstone of promoting employee awareness of the Agency's SHE policy. As such, Laboratory Directors should place a high priority on communicating the requirements of the policy through

Figure A2-1: Components of the EPA SHE Policy

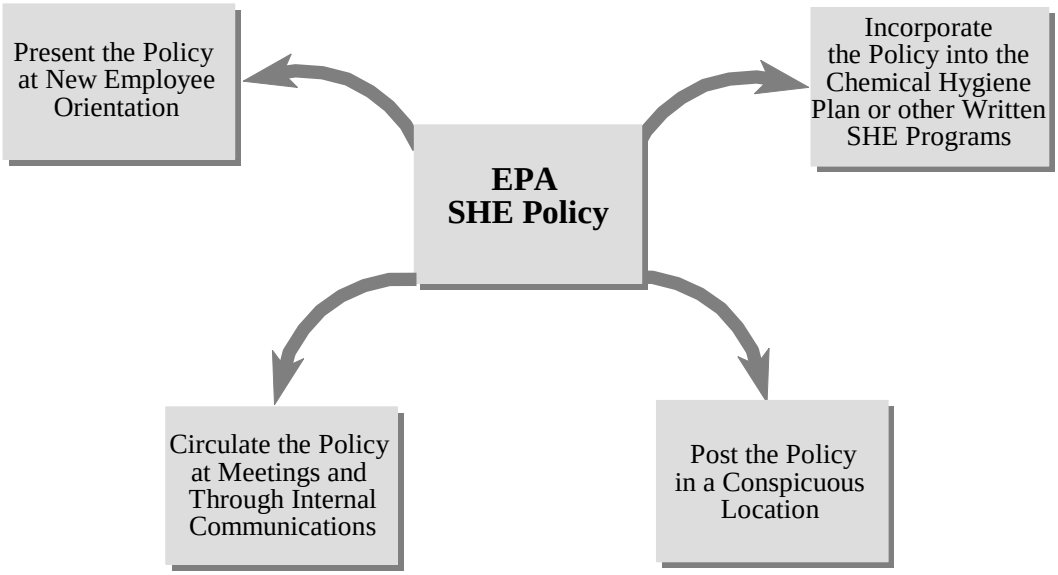


ongoing and clear communication and discussion, as well as visible top-management commitment. The policy statement can be communicated to laboratory employees in several ways. Examples are demonstrated in Figure A2-2.

However, to be effective, the policy statement must be communicated to the employees not only by word, but also by action and example. Top-management commitment must be supported and reaffirmed through consistent actions that demonstrate the resolve and intent of the statement. Examples include:

- Complying with all applicable requirements (such as following safety rules in the laboratory)
- Accompanying the safety committee or chemical hygiene officer (CHO) on regularly scheduled inspections
- Attending safety meetings regularly
- Maintaining an "open door" policy; establishing times that employees can stop by and discuss SHE concerns
- Bringing SHE matters to the attention of employees through existing in-house publications and memoranda (e.g., newsletters, bulletins)
- Using SHE promotional items such as posters, booklets, pamphlets, and audiovisual materials
- Acting on recommendations from the safety committee (or an employee responsible for safety and health) in a timely manner
- Making frequent and regular walk-throughs of laboratory areas, taking the time to ask questions and solicit feedback on SHE issues

Figure A2-2: Methods to Communicate SHE Policy



This type of visible involvement in the laboratory's SHEMP will provide a valuable role model for employees and increase the effectiveness of the written SHE programs.

3.0 Goals, Objectives, and Targets

The EPA's SHE policy is made specific to each laboratory through the establishment of clear goals and objectives related to SHE performance. Goals and objectives, if properly designed, also set the framework for assigning SHE responsibilities, since each employee should be able to see his or her work activities in terms of a "bigger picture" or a desired end state.

3.1 Developing SHE Goals

Just as a laboratory may have operational goals (e.g., testing a chemical for carcinogenicity), it should also develop specific SHE goals for the workplace. These goals should be based on the particular hazards and risks of that laboratory and should reflect current SHE issues and priorities. As part of the goal-setting process, each laboratory should assess the current state of its SHEMP and gain a clear understanding of the workplace hazards and risks that must be managed, as well as any deficiencies in the programs. Refer to Chapter B of this manual for additional information on hazard evaluation.

Although laboratory-specific goals could include numerical targets, such as injury statistics where the ultimate goal is clearly zero injuries, laboratories should also adopt broad, descriptive goals that encompass all the potential workplace hazards. Examples of numerical and descriptive SHE goals are presented in Table A2-1.

Table A2-1: Numerical and Descriptive SHE Goals

Numerical Goals	Descriptive Goals
Decrease the number of accidents and incidents each year by 10 percent.	Develop a comprehensive program to assess all existing and potential SHE hazards.
Decrease the number of ergonomic-related injuries by 50 percent.	Perform all operations in a way that minimizes risks to employees and the environment.
Decrease the amount of hazardous waste generated by 20 percent.	Ensure that all employees are properly trained.

The Laboratory Director, in cooperation with the SHEMP Manager and other staff, as appropriate, will be responsible for developing SHE goals for the coming fiscal year and will document these goals in any business or operating plans, as appropriate. The documentation should also include the proposed method of implementation, the time frame for implementation, and the expected level of resources (e.g., financial and personnel) that will be needed. All annual goals (i.e., business or operating plans) should be submitted to the Assistant Regional Administrator for review and approval. This SHE goal-setting process is summarized in Figure A2-3.

3.2 Identifying SHE Objectives and Targets

Once the goals have been established, the Laboratory Director, in coordination with the SHEMP Manager, staff, and others, must identify the specific steps or action items that will be implemented to attain the SHE goals. These objectives and targets must be *specific, measurable, realistic, and attainable*. Examples could include the following:

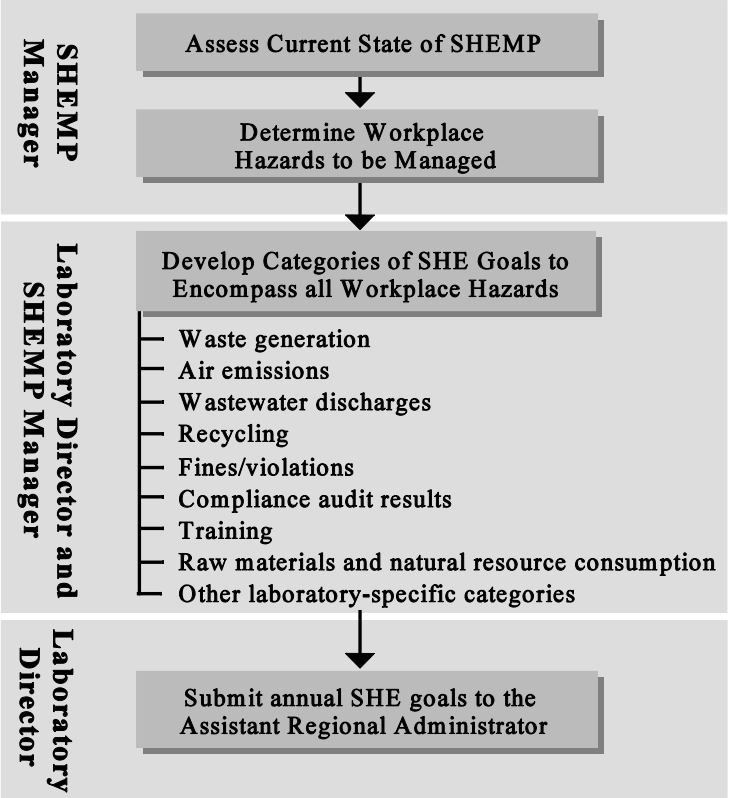
- Develop a training tracking program.
- Create a chemical hygiene committee.
- Conduct weekly safety and health inspections in each department.
- Eliminate hazards identified during inspections within 24 hours whenever possible.
- Hold and evaluate emergency evacuation drills every six months.

In all cases, the objectives should be consistent with the EPA's SHE policy, linked to a specific SHE goal, and considered part of normal laboratory business, rather than as special projects added on to the regular workload. In addition, each laboratory should consider the following guidelines and best practices when establishing SHE objectives and targets:

- Link objectives and targets to the EPA's SHE policy, laboratory-specific SHE goals, hazards and risks, and business realities.

- Develop objectives and targets for each relevant function and level within the organization.

Figure A2-3: Laboratory SHE Goal-Setting Process



- Make objectives and targets measurable whenever practical; use a combination of quantitative and qualitative objectives if possible.

- Ensure that objectives and targets specify the "what and when," not the "why and how."

- Ensure that objectives and targets are realistic and contribute to the overall success of the business.

- Consider stretch targets, but don't make time frames too long without interim milestones.

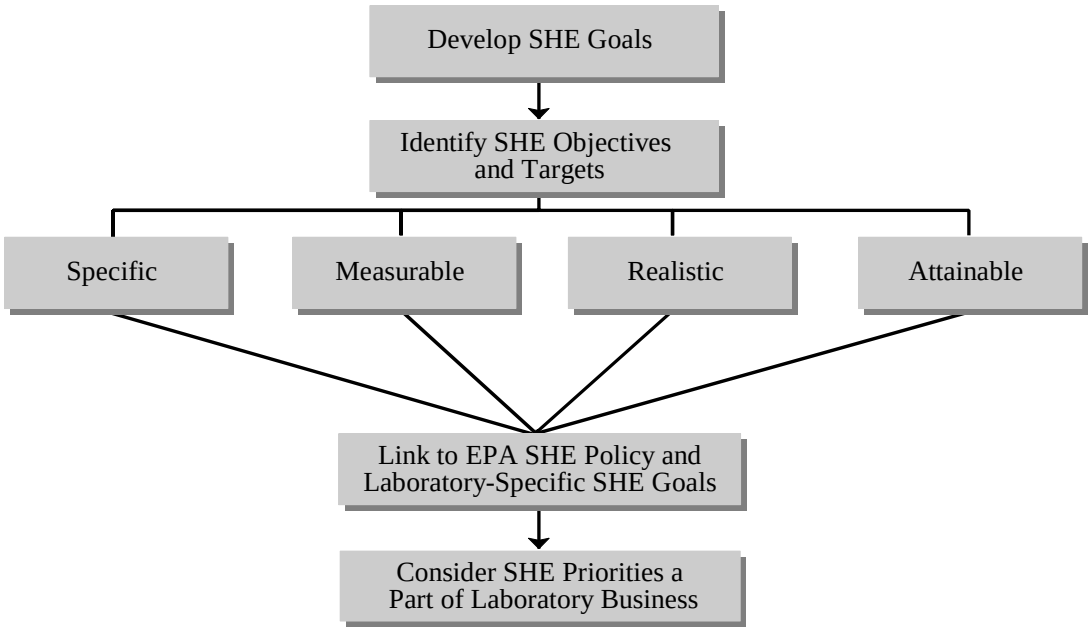
Attachment A2-1 provides a sample worksheet that can be used to clearly define objectives for reaching SHE goals.

SHE objectives should be reviewed periodically to ensure that they are meeting the needs of the laboratory and that they reflect current SHE issues and priorities. All objectives and targets should be documented, and performance against these objectives should be measured periodically. Figure A2-4 presents a summary of the process for identifying SHE objectives and targets.

4.0 Responsibilities

Development, implementation, and maintenance of a comprehensive SHEMP requires involvement from all levels of the laboratory organization. Therefore, clearly defining the roles and responsibilities of laboratory staff and management is critical to ensure that all required activities are managed and that personnel resources for SHE are used efficiently.

Figure A2-4: Identifying SHE Objectives and Targets



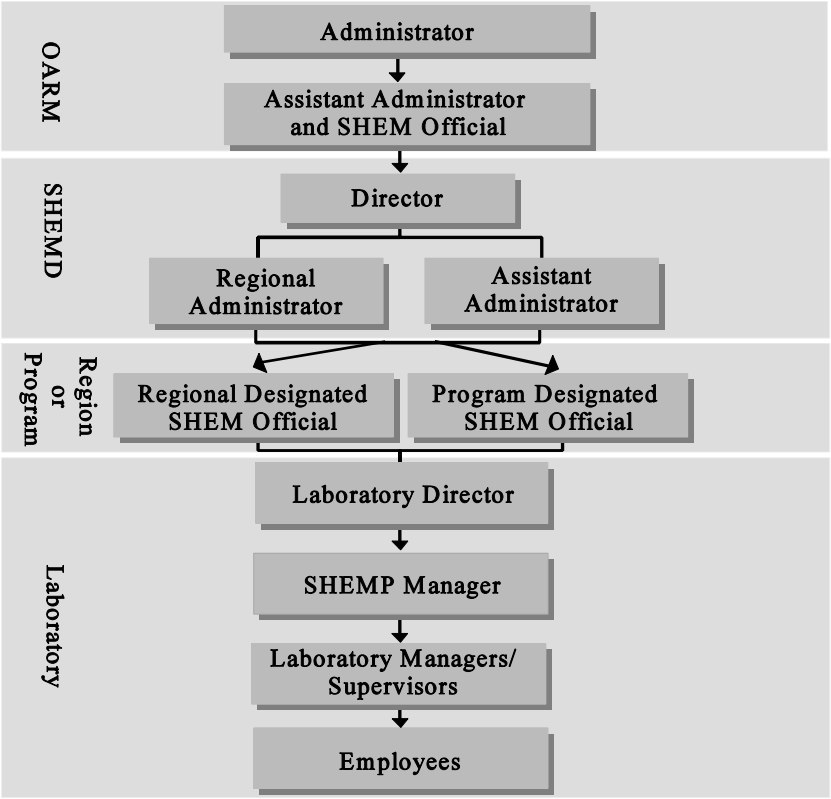
The EPA has outlined the basic responsibilities for SHEM in EPA Order 1440.1. Figure A2-5 summarizes the EPA SHEMP organization. The sections to follow outline these responsibilities.

4.1 Assistant Administrator for OARM

The Assistant Administrator for the Office of Administration and Resources Management (AA-OARM), by delegation of authority from the Administrator, is responsible for the following:

- Serving as the Agency-Designated Safety, Health, and Environmental Management Official (DSHEMO)
- Advising the Administrator and Agency Management officials on planning, development, and implementation of SHEMP policies and programs as they affect Agency employees and operations
- Exercising final authority in all SHEMP matters that involve the jurisdiction of more than one management official
- Maintaining a national program office to direct the development and implementation of the agencywide SHEMP

Figure A2-5: EPA SHEMP Organization



4.2 Director, SHEM Division

The Director of the Safety, Health, and Environmental Management Division (SHEMD), by delegation of authority from the AA-OARM, directs the agencywide SHEMP. As the national program official, the Director is responsible for:

- Formulating and interpreting the Agency's SHEMP policies, programs, standards, protocols, goals, objectives, priorities, and staffing requirements in accordance with all applicable statutes, regulations, and guidelines

- Advising the AA-OARM and Agency Management officials in the planning, development, and implementation of SHEMP policies, programs, and standard operating practices as they affect Agency employees and operations

- Representing the Agency in rule-making presentations before advisory, legislative, or other groups and in forums regarding activities that affect the SHEMP

- Contributing to the formulation of government-wide SHE policy and practices. This is accomplished through participation in external committees, organizations, associations, standard-setting groups, projects, or other professional groups affecting SHEMP activities and affecting federal employees

- Providing Agency officials with technical assistance and consulting services for complex SHE problems

- Designing, developing, and maintaining computerized management information systems for the collection, processing, analysis, and dissemination of data related to the Agency's SHEMP

- Retrieving, correlating, and analyzing data related to the Agency's SHEMP and making recommendations for corrective actions throughout the Agency

- Conducting inspections and investigations of Agency workplaces to evaluate any reported unsafe or unhealthful working conditions and alleged acts of reprisal towards employees, and issuing reports to the appropriate Agency officials, including recommended corrective actions

- Evaluating all aspects of the Agency's SHEMP, presenting reports to the appropriate Agency officials, and providing consulting services to those officials pertaining to corrective actions

- Serving as a focal point for the design and presentation of SHEMP education and training courses and materials

- Providing coordination and liaison on SHEMP activities with the Office of Personnel Management; Department of Labor; Department of Health and Human Services; Consumer Product Safety Commission; General Services Administration; Department of Transportation; Department of Justice; state and local governments; colleges and universities; and other interested or affected organizations or parties, to

control oversight activities, research, technical assistance, or other activities affecting the Agency SHEMP

- Establishing "Centers of Excellence" to support the development of national program requirements for SHEMP

4.3 RAs or AAs, SHEMD

The Regional Administrators (RAs) or Assistant Administrators (AAs) are responsible for:

- Initiating and ensuring effective operation of a comprehensive SHEMP within their area of responsibility (e.g., region or program)

- Designating a senior management official to serve as the Designated Safety, Health, and Environmental Management Official (DSHEMO) within their region or program of responsibility

4.4 Regional/Program Designated SHEM Official

The RDSHEMO/PDSHEMO is a regional/program senior management official designated by the RA or AA to have responsibility and authority to direct all regional or program SHEMP activities in coordination with, and under the guidance of, the Agency DSHEMO. The RDSHEMO/PDHSEMO is responsible for:

- Establishing a comprehensive SHEMP within their area of responsibility that is designed to: reduce human and financial losses incurred from injuries and illnesses; ensure compliance with all applicable federal, state, and local regulations and legislation; and comply with all Agency SHEMP policies, component programs, and SOPs

- Providing the necessary qualified subordinate staffing, financial resources, and management support to develop, implement, and effectively manage the SHEMP

- Furnishing Agency employees with places and conditions of employment that are free from recognized hazards that may contribute to the occurrence of occupational-related injury, illness, death, or environmental pollution

- Ensuring prompt response to all reports of unsafe or unhealthful conditions and establishing procedures designed to ensure that no employee is subject to any interference, discrimination, or other type of reprisal for reporting such conditions

- Ensuring that regular (e.g., at least annual) inspections and audits of all workplaces are performed by qualified and properly equipped personnel, and providing for adequate employee representation during such inspections or audits

- Ensuring prompt abatement of unsafe, unhealthful, or environmentally unsound working conditions and the prompt posting of notices for identified conditions that cannot be immediately abated upon discovery

- Providing SHEMP training for employees and managers

- Ensuring participation by, and consultation with, employees or their representatives in all SHEMP activities

- Ensuring that SHEMP responsibilities are integrated within job descriptions and performance standards of managers, supervisors, and employees

- Taking appropriate disciplinary actions as required to ensure that managers, supervisors, and employees understand the importance of, and faithfully perform, their SHEMP responsibilities

- Furnishing, upon SHEMD request or as otherwise directed, all SHEMP-related reports (e.g., annual evaluations, inspections, audits, investigations, etc.), statistical information (e.g., injury, illness, damage, loss, cost, etc.), and/or other related information

4.5 Laboratory Director

The Laboratory Director is ultimately responsible for ensuring the safety and health of all laboratory employees and for ensuring compliance with all applicable SHE requirements. The Laboratory Director, in coordination with the SHEMP Manager and with laboratory managers and supervisors, has the overall responsibility for implementing the SHE programs for their laboratories. Specific responsibilities include the following:

- Ensuring that budget submissions include appropriate funds and other resources to effectively implement and administer Agency SHE programs that apply to their laboratories

- Maintaining a baseline understanding of the SHE requirements that apply to their operations

- Ensuring that all their employees have received adequate training to conduct their job safely in accordance with good industrial hygiene and chemical hygiene practices

- Ensuring that the laboratory personnel have the right equipment and facilities to handle materials safely and perform their work in a manner that does not jeopardize human health or the environment

- Ensuring that appropriate PPE is available and maintained in good working condition

- Providing for regular, formal inspections of the laboratory to verify compliance with applicable SHE regulations (e.g., inspections of emergency equipment, housekeeping practices, hazardous waste storage areas, etc.)

4.6 SHEMP Managers

SHEMP Managers are those managers who possess the technical skills, managerial ability, and the authority and responsibility (as delegated by their RDSHEMO/PDSHEMO) to perform the following duties:

- Advise and assist senior managers and supervisors in developing, implementing, and evaluating comprehensive SHEMPs based on the Agency's national SHE objectives, and the requirements specific to each program area activities.

- Investigate and report all work-related accidents, injuries, and illnesses.

- Manage the laboratory's emergency planning and response program and coordinate with the local fire department, state fire marshal office, and the local emergency planning committee.

- Manage facility compliance with the federal Clean Water Act and state and local wastewater discharge requirements.

- Ensure that all operations generating hazardous wastes as defined under RCRA are managing wastes in accordance with federal, state, and local regulations, and EPA policy. Provide technical direction to staff regarding collection and storage of hazardous wastes. Ensure that adequate records are maintained to allow efficient and accurate preparation of hazardous waste manifests, U.S. Department of Transportation (DOT) labels, and reports to regulatory agencies.

- Conduct periodic SHE compliance inspections of research laboratories, offices, hazardous material, and waste storage areas. Report deficiencies to senior management and recommend and/or implement corrective actions.

- Manage the EPA Occupational Medical Surveillance Program. Communicate program requirements to staff, organize and schedule employee participation, and coordinate delivery of program services with the U.S. Public Health Service Division of Federal Occupational Health or other competent providers of professional health care services.

- Plan, organize, and schedule staff training programs encompassing all areas of SHE compliance requirements. Examples of required training as found in EPA, OSHA, and DOT regulations include, but are not limited to: hazard communication, hazardous materials/waste management, laboratory and field safety, use of personal protective equipment, emergency planning, fire extinguisher training, etc.

- Provide direct assistance to their RDSHEMO/PDSHEMO and senior management officials in the development, management, implementation, and evaluation of the SHEMP within their area(s) of responsibility.

- Ensure that SHEMP activities within their area(s) of responsibility are designed and implemented in compliance with requirements set forth in SHEMP orders and related program and practice issuances.

4.7 Laboratory Managers and Supervisors

According to EPA Order 1440.1, laboratory managers and supervisors are responsible for assisting the SHEMP Manager and the Laboratory Director in implementing the laboratory SHEMP.

Specifically, laboratory managers and supervisors are responsible for:

- Providing workplaces that are free from SHE hazards that may contribute to job-related injury, illness, death, or environmental pollution
- Complying fully with all applicable SHE regulations, policies, and standards that apply to their individual laboratories and operations

Other responsibilities may include:

- Ensuring that all their employees have received adequate training to conduct their job safely in accordance with good industrial hygiene and chemical hygiene practices
- Ensuring that all their employees have the right equipment and facilities to handle materials safely and perform their work in a manner that does not jeopardize human health or the environment
- Ensuring that appropriate PPE is available and maintained in good working condition
- Ensuring compliance and performance improvement through management-led self-assessments and inspections
- Leading or assisting with accident and incident investigations

4.8 Laboratory Health and Safety Officer/Chemical Hygiene Officer

Every regional laboratory must have a health and safety officer or a CHO to support development and implementation of the laboratory SHEMP. The CHO is required to:

- Oversee the procurement, use, and disposal of hazardous substances.
- Assist in identifying hazardous operations, establishing safe work practices, and selecting protective equipment and other exposure controls.
- Set criteria for evaluating potential exposures (including description of circumstances requiring prior approval for use of hazardous chemicals and/or conduct of hazardous operations).
- Arrange for employee exposure monitoring; inform employees of the results and use data to aid in the evaluation and maintenance of appropriate laboratory conditions.

- Develop the written chemical hygiene plan (CHP) to include rules and procedures for safe work practices; review and evaluate the effectiveness of the CHP at least annually and update it as necessary.

- Serve on the chemical hygiene committee, if applicable.

- Ensure that the CHP is available to all laboratory employees.

- Develop SHE training plans and programs, conduct training courses, establish safety references, and establish recordkeeping systems to document training activities.

- Conduct formal, periodic laboratory inspections to ensure compliance with laboratory and EPA policies.

- Correct deficiencies in the SHE program.

- Investigate and report (in writing) to laboratory management any significant problems pertaining to the safe operation of equipment and the facility, and to the implementation of control practices.

- Support follow-up to accidents and incidents and assist with accident investigation.

- Coordinate with occupational health services to establish a system for providing medical consultations and examinations.

- Coordinate recordkeeping systems for exposure monitoring and medical consultations/evaluations.

- Coordinate with the radiation safety officer, the biosafety officer, etc., on related SHE matters, as necessary.

- Keep up-to-date on regulatory and legal requirements associated with the use of hazardous substances.

4.9 Employees

According to EPA Order 1440.1, all laboratory employees are required to:

- Comply fully with all applicable SHEMP requirements in the performance of their assigned tasks.

- Perform all assigned tasks (including those activities not covered by existing rules or regulations) in a safe and healthful manner, and with the least detrimental impact on the environment.

- Report any unsafe or unhealthful conditions or acts to their supervisor for corrective action. *[Note: When local solutions prove ineffective or are not provided in a timely manner, employees have the right and responsibility to seek further resolution through Agency channels, the Director, SHEMD, or OSHA.]*

In addition to the above responsibilities, laboratory employees should follow the responsibilities outlined in specific

program documents, such as the laboratory CHP. Specific responsibilities under these programs may include:

- Wearing and properly maintaining the necessary personal protective equipment
- Using engineering controls and safety equipment properly and according to all applicable requirements
- Following good industrial hygiene and chemical hygiene practices
- Participating in all required training programs
- Reading, understanding, and signing off on SHE standard operating procedures and similar program documents, such as the CHP, emergency response plan, etc.
- Immediately reporting to their supervisor or the CHO all facts pertaining to accidents, incidents, and potential exposures to hazardous substances

4.10 Collateral Duty

When an employee is appointed to a collateral-duty position or to a committee, training for collateral duty must be completed prior to beginning their assigned responsibilities. Such training shall include the following:

- Agency SHEM program
- Section 19 of the Occupational Safety and Health Act, Executive Order 12196, 29 CFR 1960
- Procedures for reporting, evaluating, and abating hazards
- Procedures for reporting and investigating allegations of reprisal, recognizing hazardous conditions and environments, and identifying and using SHE standards
- Other appropriate rules and regulations

The U.S. Department of Labor (DOL) offers Course #600 “Collateral Duty Course for Other Federal Agencies.” This course introduces Agency collateral-duty (part-time) SHE personnel to the topics listed above. It enables them to recognize basic SHE hazards in their own workplaces and to effectively assist Agency SHEMP Managers in their inspection and abatement efforts.

5.0 Authority and Accountability

To ensure that the laboratory SHEMP is not a “paper tiger” with no real power or commitment behind it, management must provide employees with the authority to execute their responsibilities. For example, employees who are responsible for maintaining ventilation equipment should be given the authority to halt laboratory operations if the equipment malfunctions.

In addition to the provision of authority, there must also be a mechanism to hold each person accountable for fulfilling his or her responsibilities. At each laboratory, there must be a formal system to track the SHE performance of top management, supervisors, and employees, and to reward or correct this performance as necessary.

Key elements of any authority and accountability system, including those related to SHE responsibilities, include:

- Job descriptions
- Job performance measures
- Discipline and reward programs

Each of these areas are discussed in more detail in the following sections.

5.1 Job Descriptions

Each level in the organization plays a significant role in developing and implementing a laboratory SHEMP. However, before employees can be held accountable for these responsibilities, it is critical that they understand what is expected of them. A written job description is a simple tool for accomplishing this objective.

Current job descriptions should be amended to include the general SHE responsibilities of a given position. For example, the job description for a laboratory supervisor or manager should include, at a minimum, SHE responsibilities. For positions with more extensive SHE responsibilities, such as the CHO, it may make more sense to include these responsibilities as an attachment to that person's existing job description. If existing job descriptions cannot be amended or revised, other mechanisms to document SHE responsibilities should be used, such as responsibility matrices, documentation in SHE manuals and procedures, etc.

In all cases, however, job descriptions (or equivalent) and SHE responsibilities should be reviewed with each employee prior to hire. In addition, documented job descriptions should be reviewed periodically and revised as necessary to reflect changing SHE responsibilities.

5.2 Job Performance Measures

All managers, supervisors, and employees will be rated on their performance in complying with the requirements of the SHEMP. This will normally occur during the routine performance evaluation. To facilitate this process, it is important that Laboratory Directors (with the necessary assistance) develop individual SHE job performance measures for all positions with significant SHE responsibilities. The following considerations will help set reasonable performance measures:

- Establish *measurable* objectives, rather than general expectations. For example, "Hold at least one safety meeting each week" is a better performance measure than "Improve safety and health awareness in the department."

- Establish performance measures for all persons with significant SHE responsibilities, not just full-time SHE staff.

- Establish measures that are *directly* tied to, and consistent with, specific SHE responsibilities and authorities. For example, if a supervisor is responsible for holding safety meetings, an appropriate performance measure may be the number of meetings held per quarter.

- Establish measures that are realistic and obtainable, improve SHE performance, and encourage employees's personal growth.

- Give adequate training and resources to meet performance expectations. For example, if a supervisor is expected to investigate all accidents within 24 hours, he or she should have been given training in accident investigation.

- Ensure that affected persons agree with the measures. Develop measures as a cooperative effort between the employee and the supervisor, and document the measures when consensus has been reached.

Examples of common performance measures for some "generic" job positions are presented in Table A2-2.

Progress against SHE performance measures should be evaluated periodically—at least as part of the employee's annual performance review. In addition, for a SHEMP program to be strong and to ensure that all persons take their SHE responsibilities seriously, SHE performance should be considered in determining career progression.

5.3 Incentive Programs

A successful accountability system should ensure that there are incentives for excellent SHE performance and commitment. Therefore, all laboratories should develop and implement appropriate SHE-related incentive programs to motivate employees and to stress the importance of strong SHE performance.

Successful SHE incentive programs emphasize the attainment of specific performance measures rather than on targets based solely on the avoidance of accidents

Table A2-2: Generic Job Descriptions

Position	Performance Measures
Supervisor	• Percentage of accident investigations completed within 24 hours • Number of safety meetings held per quarter • Level of participation in laboratory inspections • Number of SHE-focused meetings
SHEMP Manager	• Number of job hazard analyses completed • Percentage of audit findings corrected within a given period • Percentage of employees who have received SHE training on time • Number of laboratory inspections completed per year
Employee	• Completion of required training • Attendance at safety meetings • Number of accidents/incidents involving the employee

and injuries. In addition, the best programs reward groups rather than individuals in an effort to foster teamwork and a collaborative approach to SHE management.

However, it should be noted that incentive programs have limitations (see Table A2-3) and should not be substituted for other management processes such as training and safety meetings (e.g., used for maintaining employee awareness of SHE issues and promoting safe work practices).

6.0 Employee Involvement

Effective SHE programs depend on the commitment and involvement of all employees, not simply the managerial staff. The program should reflect the concerns and ideas of personnel from each level within the organization in order to accurately address all potential hazards. In addition, employees often prove themselves to be valuable resources for problem-solving, rule-making, inspecting, and training. Employee involvement can also result in higher-quality work, since employees who feel they are part of the solution instead of part of the problem are often more productive and dedicated. There are a number of ways employees can become actively involved in managing SHE, including:

- Inspecting for hazards and developing recommendations for corrective actions and controls
- Conducting job analyses to locate potential hazards and develop safe work procedures
- Developing or revising general safety rules
- Training newly hired employees in safe work procedures and rules, and/or training co-workers in revised safe work procedures
- Developing programs and presentations for safety meetings
- Assisting in accident/incident investigations

To accomplish these activities and foster employee involvement, each laboratory shall establish a SHE committee composed of both “labor” and “management.” In fact, OSHA’s “Basic Program Elements for Federal Employees” (29 CFR 1960) suggests that SHE committees be formed to produce an open channel of communication for employees and management to discuss and improve SHE policies, conditions, and practices in the workplace. The effectiveness of such a committee depends on several factors, including:

- A well-defined mission
- Appropriate representation
- Regularly scheduled meetings with well-defined agendas and objectives

6.1 Mission and Responsibilities

The mission of the laboratory SHE committee is to assist laboratory management in providing a safe and healthy workplace.

The specific responsibilities of the SHE committee, or its charter, should be decided by laboratory management with input from appropriate personnel. At a

Table A2-3: Incentive Programs

Benefits	• Help develop safe work practices and attitudes; help maintain interest and focus on SHE • Serve as a good vehicle for employee involvement in the laboratory SHEMP • Provide a channel for communication between employees and management • Provide evidence of management's commitment to SHE
Limitations	• Cannot compensate for unsafe conditions, inadequate programs, poor training, and other management weaknesses • Cannot, by themselves, eliminate accidents and incidents • Cannot replace visible senior management commitment (e.g., presence at meetings and walk-throughs)
Pitfalls	• Should change over time, so that they continue to motivate and do not become seen as "entitlements" • Programs based solely on injury rates and reduction of accidents may discourage reporting

minimum, the responsibilities and duties of the laboratory SHE committee shall include the following:

- Create and maintain active interest in SHE.
- Provide a vehicle for discussion and resolution of SHE issues.
- Promote SHE awareness and raise issues to the Laboratory Director on behalf of concerned employees.
- Review procedures, equipment, and chemicals to identify potential SHE hazards, and recommend appropriate controls, work practices, and personal protective equipment.
- Monitor the effectiveness of the laboratory SHE programs and practices (e.g., through annual review of CHP) and make recommendations for improvement to the Laboratory Director.
- Assist the CHO, or SHEMP Manager, in implementing elements of the laboratory SHE programs. For example:
  - — Review the results of accident and injury investigations to determine if appropriate root causes and corrective actions were identified.
  - — Participate in laboratory inspections.

— Monitor findings and reports of workplace inspections to confirm that appropriate corrective actions are implemented in a timely manner.

— Review the appropriateness of personal protective equipment used by laboratory employees.

- Review and comment on standards proposed by the Agency, reporting unit, or laboratory.

- Monitor the level of resources allocated and spent on SHE programs at the laboratory, and recommend changes to improve efficiency.

6.2 Representation

Membership of the SHE committee will be determined by the Laboratory Director. The structure and specific composition of the SHE committee will vary depending on the number of employees, laboratory resources, and maturity of SHE programs at the location. However, each committee shall have an equal number of management and non-management representation. SHE staff (e.g., the SHEMP Manager) should not be members of the committee, but should participate regularly in committee meetings and assist the chairperson of the committee as technical advisor.

Committee members shall serve overlapping terms with a minimum of a one-year duration, except when the committee is initially formed. The chairperson of the committee shall be elected by the committee members, and shall serve a term of at least 12 months. Management and nonmanagement members should alternate the chair positions.

6.3 SHE Committee Meetings

Each SHE committee should establish a regular schedule of meetings, with the provision that special meetings will be called when critical SHE problems arise. The committee should meet no less than quarterly, and preferably on a monthly basis.

To ensure that the committee is effective and productive in each meeting, it is critical that an agenda and meeting objectives be drafted, distributed and agreed upon prior to the scheduled meeting. Since the SHEMP Manager should have the best perspective on the SHE issues of concern or priority, he or she should draft the agenda, but should also ensure that input is obtained from all committee members.

The committee chairperson should ensure that significant issues covered in the meeting are adequately documented. Therefore, detailed minutes of each meeting should be kept, and should contain, at a minimum:

- The name and title of each person present
- A summary of each area that was discussed
- Specific recommendations or action items

Copies of the minutes should be distributed to each committee member, the SHEMP Manager, the Laboratory Director, and the laboratory managers, at a minimum.

Attachment A2-1: Worksheet Relating Objective to Goal

Purpose: To provide an example of a worksheet that can be used to relate objectives to goals.

Instructions: Use this worksheet to map out the activities, responsibilities, target dates, and evaluation of results when relating objectives to goals.

Worksheet Relating Objective to Goal

Goal	Provide a comprehensive program to assess and prevent or control all hazards.		
Objective	Increase employee involvement in laboratory hazard assessment and control.		
Activity	**Person Responsible**	**Target Dates**	**Evaluate Results**
1. Conduct monthly all-employee meetings to discuss current safety and health concerns.	Manager	Begin by June	Annually
2. Establish a joint management/employee committee for inspections and accident investigations.	Manager	Committee functioning by September 30	Annually
3. Provide hazard recognition training to the committee members.	Safety Supervisor	Training completed by December 31	Track monthly progress

Source: Occupational Safety and Health Administration (OSHA), "Managing Worker Safety and Health." OSHA, Office of Consultation Programs, U.S. Department of Labor, June 1992.

Worksheet Relating Objective to Goal

Goal			
Objective			
Activity	**Person Responsible**	**Target Dates**	**Evaluate Results**

Source: Occupational Safety and Health Administration (OSHA), "Managing Worker Safety and Health." OSHA, Office of Consultation Programs, U.S. Department of Labor, June 1992.

1.0 Introduction

The actions of contractors and visitors at EPA laboratories can affect the safety and health of both EPA laboratory staff and the contractor or visitor. Contractors and visitors and must be informed of the potential hazards, precautions, and safety, health, and environmental (SHE) policies associated with the laboratory. The laboratory must also be aware of contractor qualifications, past performance, and policies relating to SHE to ensure the safety and health of all potentially affected staff. The laboratory must:

- Monitor the established programs, procedures, and training of the contractor to verify that EPA requirements are met.
- Monitor on-site activities for compliance.

The following sections contain requirements, recommendations, and guidelines relative to contractor selection, training, and on-site evaluation, as well as visitor safety.

EPA Program Requirements
All EPA laboratories should establish a contractor and visitor SHE program to ensure the following:

- All contractors and visitors are briefed on the laboratory's SHE policies and procedures, and are informed of the potential hazards that may be encountered.
- All contractor work is conducted in a safe manner and contractor health and safety programs meet or exceed federal and state regulations, EPA policy, and laboratory-specific SHE requirements.

Program Administration
In developing and implementing an effective contractor and visitor health and safety program, the laboratory should ensure that the following critical tasks are completed:

- Development of a contractor and visitor SHE orientation program that highlights the significant elements of the laboratory's SHE programs
- Identification of contractor selection criteria
- Periodic evaluation of the contractor's on-site performance

The following sections provide guidance and recommendations for implementing each of these key activities.

2.0 Laboratory Orientation and Training

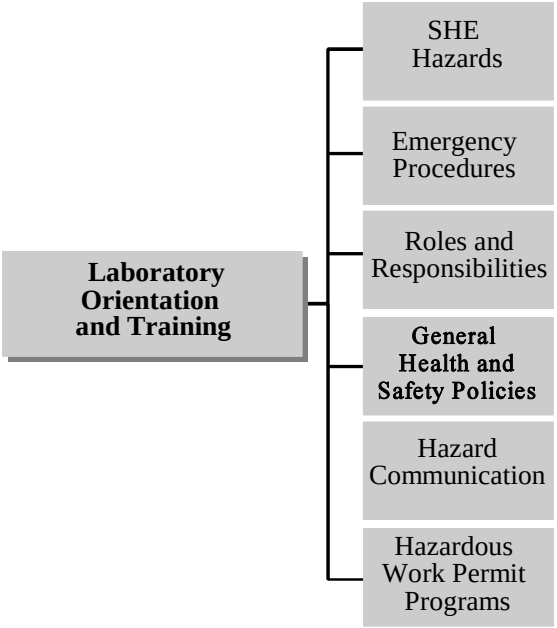
An effective laboratory orientation program is critical to achieving a safe and healthful work environment. Both contractors and visitors should receive a health and safety orientation that highlights the significant aspects of the laboratory's SHE program. This training should be given by a qualified laboratory staff member, such as a the safety, health, and environmental management program (SHEMP) Manager, and should be properly documented. A sample orientation checklist that can serve as documentation of laboratory orientation and training for contractors and visitors is provided in Attachment A3-1.

As part of the orientation and training program, each EPA laboratory should also develop and distribute a concise handbook that will familiarize contractors and visitors with the SHE policies and the procedures that have been developed to eliminate or minimize unsafe actions and conditions. This handbook will serve as a useful reference tool for contractors while they are performing work on-site. A sample table of contents for a contractor and visitor SHE handbook is provided in Attachment A3-2.

The following sections provide guidance related to the information and procedures that should be included in a contractor and visitor safety orientation program. Figure A3-1 summarizes the main components of this training program.

These areas are not meant to be all-inclusive; each individual laboratory should determine the specific safety policies and procedures that need to be communicated to contractors and visitors. It should also be noted that, in most cases, contractors will need more information and training related to SHE hazards and

Figure A3-1: Topics for Laboratory Orientation and Training



laboratory SHE requirements than visitors, since visitors are usually escorted by a laboratory representative.

2.1 Laboratory SHE Hazards

To ensure the safety of contractors and visitors, it is important that the laboratory provide them with relevant information related to SHE hazards that they may encounter. The training does not need to be detailed, but should give the contractors and visitors enough information to know where the hazards are, what special precautions need to be taken, and what the restrictions to access are because of these hazards. Hazards that should be discussed with contractors and visitors include, but are not limited to, those presented in Figure A3-2.

Contractors should also be informed of certain areas and operations where extra precautions must be taken because of the unusual nature of the hazards. Such areas may include:

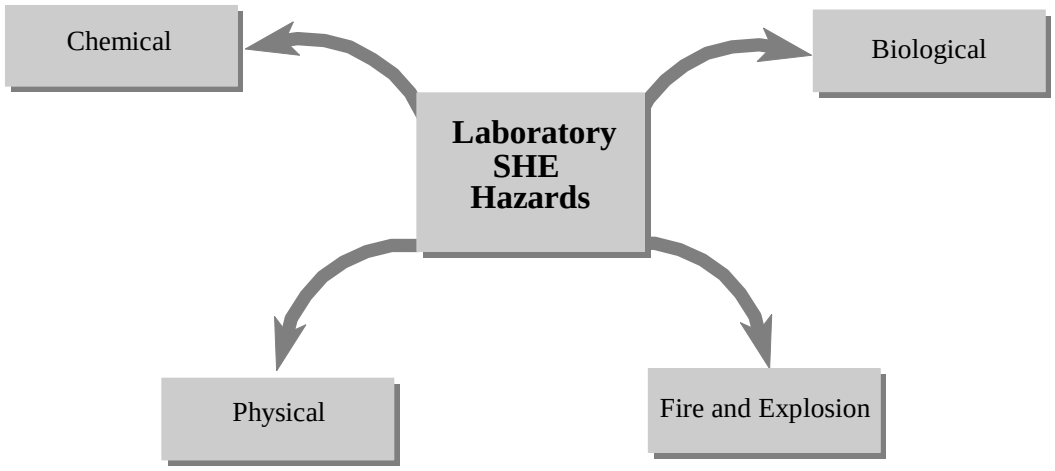
- Confined spaces
- Roof areas
- Areas under construction
- Areas where asbestos-containing materials are located
- Laboratories where highly hazardous materials are used
- Chemical and hazardous material storage areas

To ensure that these hazards are adequately communicated to all contract personnel, contract management should be instructed, as part of the orientation and training program, to hold pre-job meetings with their employees and subcontractors. These meetings should review the specific hazards that may be present at each work location or that may be associated with a given work activity.

2.2 Emergency Procedures

It is essential that the laboratory inform both contractors and visitors of the specific emergency procedures that they may need to know in the event of a fire, spill, explosion, or exposure incident. For instance, the handbook should contain, at a minimum, the following information:

Figure A3-2: SHE Hazards to Discuss with Contractors and Visitors



- Explanation of the laboratory alarms
- Emergency telephone numbers and points of contact
- Evacuation procedures and designated safe areas
- Spill response procedures
- Procedures for responding to and reporting emergencies
- General safety procedures to follow in the event of a fire, chemical spill, or similar emergency

Prior to their beginning work, contractors and visitors should be shown the primary and alternate exits in their work area, as well as the location of any emergency equipment.

2.3 Roles and Responsibilities

The delineation of roles and responsibilities for SHE between the contractor and the laboratory staff must be covered during orientation to ensure that all SHE requirements are properly implemented. It is important that the laboratory management clearly define and communicate the activities it expects contractors to conduct (e.g., periodic inspections, safety meetings) to avoid confusion and gaps in coverage.

Table A3-1 outlines typical responsibilities for contractors as compared to those for laboratory employees. These are based on best practices seen in various industries.

2.4 General Health and Safety Policies

Contractors and visitors should be briefed on the general safety policies that must be followed by all personnel while at the laboratory. Although they will be specific for each laboratory, they may include the policies as shown in Figure A3-3.

Examples of general SHE policies and information that should be communicated to contractors and visitors for each of these topics are presented in the following sections.

2.4.1 Safe Work Practices

The following general safe work practices should be included in contractor and visitor orientation:

- Be alert to unsafe conditions, and report them promptly to the SHEMP Manager.

- Do not attempt a new task unless adequately trained and aware of potential hazards.

Figure A3-3: General Health and Safety Policies

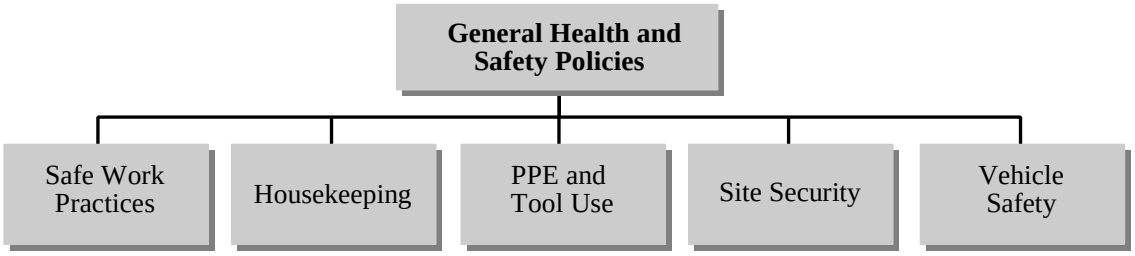


Table A3-1: Contractor Roles and Responsibilities

Laboratory Responsibilities	• Require contractors to conform to applicable SHE regulations, standards, and policies. • Provide contractors with formal SHE orientation and training that includes signs and their meaning. • Inform contractors of known conditions or operations that may affect the safety and health of contract employees, including chemical substances and physical agents (e.g., noise, radiation, heat). • Provide contractors with laboratory-specific safety and health requirements prior to their beginning work. Require contractors to verify that this information has been disseminated to all contract employees. • Require contractors to provide and mandate use of appropriate personal protective equipment. • Conduct periodic inspections of contractor activities to verify compliance. • Monitor contractor performance. • Investigate serious contractor injuries, illnesses, and near misses.
Contractor Responsibilities	• Comply with all applicable SHE regulations, standards, and policies relevant to their work. • Distribute laboratory-specific SHE programs and requirements to all employees. • Be familiar with the conditions existing at the laboratory that might affect the safety and health of contract employees and subcontractors. • Conduct periodic safety meetings and safety training as appropriate. • Provide and use appropriate personal protective equipment to protect contract employees and subcontractors from conditions associated with their work. • Supervise employees and conduct periodic self-inspections to verify adherence to applicable SHE requirements. • Notify the SHEMP Manager immediately of any accident, injury, or illness involving contract employees. • Investigate all work-related accidents and incidents. Allow the SHEMP Manager to investigate any accidents and incidents deemed necessary. • Inform the SHEMP Manager immediately if a regulatory inspector arrives at the laboratory.

- Keep fingers, hair, and jewelry away from moving parts when operating machinery.
- Wear properly fitting clothing suitable for the laboratory (e.g., sandals, open-toed shoes, and high heels are not acceptable in the laboratory).
- Avoid practical jokes or other behavior that might confuse, startle, or distract another worker.
- Do not participate in horseplay in any area of the laboratory.

2.4.2 Housekeeping Requirements

The following general housekeeping requirements should be included in contractor and visitor orientation:

- Keep work areas clean and uncluttered.
- Keep aisles, walkways, hallways, and exits free of obstructions and tripping hazards.
- Keep stairwells well-lighted and free from extraneous items.
- Carefully stack and locate stored material so that it does not block emergency equipment, fixed ladders, stairways, electrical breaker panels, or any other safety equipment.
- Close all drawers and doors when they are not in use.
- Do not hang clothing on or near radiators, steam pipes, or other heat sources.
- Clean all spills immediately; clean all work surfaces thoroughly after use.
- Dispose of waste promptly and in the proper receptacle.
- Keep electrical cords away from pedestrian areas.

2.4.3 Provision and Use of PPE and Tools

The following requirements for the provision and use of PPE and tools should be included in contractor and visitor orientation:

- Ensure that the proper personal protective equipment is available and worn by all contract and subcontract employees.
- Do not store tools, equipment, pipes, debris, etc., above eye level.
- Use equipment only for its designated purpose and in accordance with safe operating procedures.
- Do not use any equipment or tools that are not in good condition; do not use electrical equipment with frayed or defective cords.

2.4.4 Laboratory Security and Restricted Access

The following general requirements for laboratory security and restricted access should be included in contractor and visitor orientation:

- Obtain the proper passes and permits before entering the laboratory.
- Display personnel identification at all times.

- Park only in designated areas.
- Adhere to all speed limits while at the laboratory.
- Avoid working alone in a building whenever possible.

2.5 Hazard Communication

During the safety orientation, the laboratory should inform contractors and visitors of the applicable elements of the hazard communication program, including the following:

- The location of material safety data sheets (MSDSs) for hazardous chemicals
- The procedure for obtaining an MSDS while on site, including a demonstration of any electronic system used to store and generate MSDSs
- An explanation of any internal labeling systems
- Requirements for right-to-know training

If possible, contractors should be given a list of hazardous substances present within their particular work area and copies of the MSDSs for these materials prior to beginning work. In addition, contractors should be required to furnish the MSDSs and any other pertinent information for any hazardous materials that they bring on site. It is also the responsibility of the contractor to ensure that any hazardous substance brought on site is clearly and correctly labeled for easy identification.

2.6 Coordination of Hazardous Work Permit Programs

The laboratory's contractor SHE program must also include a means for the contractor to coordinate all hazardous work permit programs, including lockout/tagout, hot work, and confined space entry. As part of the health and safety orientation, the laboratory should provide contractors with an overview of permit programs, if any, and should include a brief description of the programs in the contractor SHE handbook.

For permitted work involving more than one employer, it is essential that the laboratory SHEMP Manager openly communicates with the contractors and coordinate hazardous work with other laboratory activities. Part of this coordination should include a determination of which permit program is to be used by the contractor. The SHEMP Manager has the option of requiring that contractors comply with the laboratory's permit program to minimize confusion and misunderstanding. In fact, the laboratory may choose to condition its contract to ensure the contractor's compliance with the SHE program. If contractors are allowed to use their own programs, then the laboratory must ensure that all permits are tracked and all operations are communicated to any affected staff.

3.0 Contractor Selection Guidelines

At the very initial stages of the contracting process, all EPA laboratories should develop and implement control mechanisms to manage the risks associated with

using contractors. As such, effective contractor management programs should ensure the following:

- Contractor past SHE performance is evaluated prior to initiation of the contract; only qualified contractors are accepted.
- Contractor SHE programs and procedures are reviewed prior to initiation of the contract to ensure that these programs meet or exceed regulatory requirements.

Each of these are discussed in the following sections. In addition, all contracts awarded should, where appropriate, contain written provisions that require contractors to follow the same SHE regulations and guidelines as EPA staff performing similar work. In addition, contractual provisions should address responsibilities, accountability, and enforcement, and should require that all safety equipment and services be equivalent to that provided to EPA staff. Attachment A3-3 provides a sample checklist that can be used to guide the contractor selection process.

3.1 Review of Past Performance

Information on a contractor's past safety record can provide an objective prediction of future performance. Although most companies rely on accident and incident statistics to determine past performance, there are several parameters that may be useful, including the following:

- U.S. Occupational Safety and Health Administration (OSHA) statistics (e.g., incident frequency and severity, fatalities, lost-time cases, etc.)
- Experience modification rates*
- Past regulatory violations
- Past performance at the location
- Confirmation of insurance; previous insurance records
- References from past clients

After a careful review of the information listed above, the laboratory SHEMP Manager should eliminate any unsatisfactory contractors from the bidders list.

3.2 Review of Contractor Safety Programs

In addition to evaluating past safety records, the laboratory should ensure that the contractor's SHE programs and procedures meet or exceed regulatory requirements. Prior to beginning work, contractors should be asked to submit the written SHE programs and training records applicable to the tasks that they will perform. The SHEMP Manager, or other qualified staff, should evaluate these programs and any relevant records to determine whether:

*Experience Modification Rate is an insurance premium adjuster rate that anticipates future loss performance cases based on past experience averaged over a 3-year period. Lower rates mean fewer, or less severe, accidents occurred than were expected (e.g., the industry standard is 1.0).

- The programs comply with federal and state regulations and EPA policies.

- Contractors have received the appropriate SHE training (e.g., respiratory protection, hazard communication).

- Contractors possess the safety equipment required for the job, including adequate personal protective equipment and clothing.

This type of review can serve as the basis for an approved list of contractors, and it will enable the laboratory to take a proactive approach to minimizing accidents and injuries involving both contractor and laboratory personnel.

4.0 Contractor On-Site Performance Evaluation

In establishing a contractor safety program, the laboratory should develop a means of evaluating a contractor's on-site safety performance. Best practices related to contractor oversight and evaluation are presented below:

- Contractors are required to conduct periodic self-assessments and inspections to ensure that work is conducted in accordance with safety requirements.

- The laboratory conducts periodic audits or inspections to verify compliance with safety requirements.

- To address safety issues and areas of noncompliance, SHEMP Managers work through contractor supervisors whenever possible (except in cases of imminent danger).

- Contractors are required to investigate all accidents and report accidents/ incidents to a representative from the laboratory.

- The laboratory tracks injury/illness statistics for contractors to evaluate performance and identify needed improvements.

- Contractor safety performance is evaluated when the job is completed. Contractors who fall short of standards and expectations are not rehired.

4.1 Inspection of Contractor Activities

Contractor operations should be periodically monitored (i.e., audits or inspections) to ensure compliance with applicable laboratory work practices, fire protection standards, and SHE regulations. These inspections should be conducted by the SHEMP Manager or other persons with appropriate training and familiarity with the contractor's operations. Examples of the types of issues that should be monitored for contractors are provided in a sample inspection checklist in Attachment A3-4. All areas of noncompliance should be reported promptly to the contractor supervisor so that corrective actions can be taken.

In addition to periodic inspections, the laboratory should ensure that a mechanism is in place to track contractor violations. For instance, the laboratory should use a standard form to report significant infractions and review the forms periodically to identify any recurring problems or systemic weaknesses in the contractor's SHE programs.

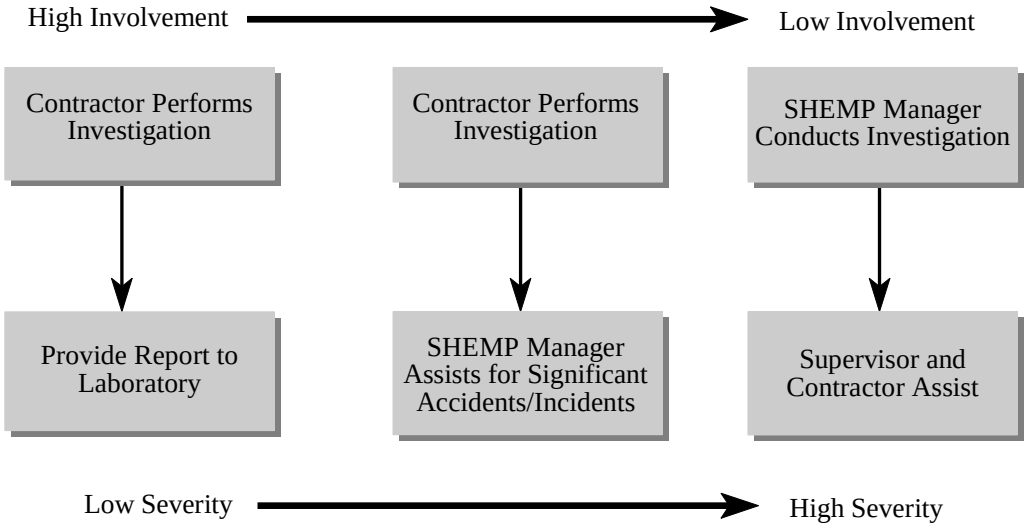
4.2 Accident/Incident Investigation

Another way that the laboratory can monitor contractor performance is through a review of accidents and incidents involving contractors. For all accidents, injuries, and incidents involving contractors, the contractor should be required to report the accident immediately to the SHEMP Manager. In addition, investigations should be conducted for significant accidents/incidents so that root causes can be identified. The level of laboratory participation in the investigation of accidents involving contractors can range from low to high as shown in Figure A3-4.

Each laboratory should determine how involved staff will be in the investigations. In all cases, however, laboratories should maintain copies of all contractor accident investigation reports on file and use these reports to evaluate contractor performance, as needed. Another method to track contractor activities is through the use of a laboratory injury and illness log (i.e., OSHA Form 200-F) for contractors.

For more information on accident/incident investigation refer to Chapter G.

Figure A3-4: Contractor Involvement in Accident/Incident Investigation



Attachment A3-1: Contractor and Visitor Safety Orientation Checklist

Purpose: To provide a standardized checklist that can be used by laboratories to ensure that contractor and visitor safety orientation is being conducted.

Instructions: Complete this checklist at the time of contractor or visitor safety orientation.

Contractor and Visitor Safety Orientation Checklist

	Date:
Name of Contractor or Visitor:	**Number of Workers Involved:**
Description of Work to be Done:	
Location of Work:	**Date Work is to Begin:**

	Topic	Completed	Not Applicable
1	Emergency alarms—sound and location		
2	Headcount evacuation — local headcount locations — central headcount locations		
3	Emergency numbers		
4	Accidents and injuries		
5	Laboratory security and restricted access		
6	General laboratory safety rules		
7	Traffic safety		
8	Standard personal protective equipment		
9	Special protective equipment		
10	Respirators		
11	Proper use of tools and equipment		
12	Waste disposal		
13	Hazards of specific work area		
14	Material safety data sheets		
15	Hot work permits		
16	Equipment isolation		
17	Confined space entry		

	Yes	No
Have safety and insurance agreements been completed and approved?		
Have contractor responsibilities been reviewed?		
Other:		

Orientation conducted by:	Date
Orientation received by:	Date

Attachment A3-2: Contractor and Visitor Handbook

Purpose: To provide a sample of the contents that should be included in a contractor and visitor handbook.

Instructions: Use this table of contents when developing a contractor and visitor handbook or when determining if current materials are complete.

Contractor and Visitor Handbook—Table of Contents

I. Introduction
   A. Scope and application
   B. Laboratory SHE policy
   C. Duties and responsibilities

II. Laboratory emergency procedures
   A. Alarm system and evacuation procedures
   B. Emergency numbers and contacts
   C. Fires/explosions/spills
   D. Medical emergencies

III. Laboratory security and access
   A. Identification badges
   B. Vehicle safety requirements
   C. Restricted access areas
   D. Working alone and working off-hours

IV. Laboratory hazards
   A. Hazardous chemicals
   B. High-noise areas
   C. Asbestos
   D. Confined spaces
   E. Biological hazards
   F. Radiation hazards

V. General SHE policies and procedures
   A. Laboratory safe work practices
   B. Housekeeping
   C. Personal protective equipment
   D. Tools and equipment

VI. Hazardous work (non-routine tasks) policies and procedures
   A. Site permitting
   B. Lockout/tagout
   C. Confined space entry
   D. Hot work

VII. Hazard communication
   A. MSDSs
   B. Signs and labels
   C. Training

VIII. Oversight and evaluation
   A. Workplace inspections
   B. Laboratory audits
   C. Accident/injury reporting and investigation

Attachment A3-3: Contractor Selection Checklist

Purpose: To provide a standardized checklist that can be used by laboratories when selecting contractors.

Instructions: Complete this form during the contractor selection process to evaluate their SHE performance.

Contractor Selection Checklist

Contractor:		
Description of Contract Work:		
Information Requested	**Received (√)**	**Acceptable (√)**
1. Incident and severity rates		
2. Experience modification rate		
3. Proof of insurance		
4. References		
5. SHE programs applicable to the task		
List programs reviewed:		
6. SHE training records applicable to the task		
List records reviewed:		
7. Equipment maintenance records/programs for contractor equipment brought on-site		
Other:		

	1995	**1996**	**1997**
Fatalities			
Restricted work-day cases			
Days away from work			

_____ Contractor Name	is approved to conduct the contract work described above.
_____ **SHEMP Manager**	_____ **Purchasing Manager (or designee)**

Attachment A3-4: Contractor Inspection Checklist

Purpose: To provide laboratories with a standardized checklist to use when evaluating contractor performance.

Instructions: Use this form during an inspection to evaluate the performance of a contractor while working in the laboratory.

Contractor Inspection Checklist

Contractor:	**Laboratory/Location:**
Person(s) Conducting Inspection:	**Date:**

	Program Administration	**Yes**	**No**	**N/A**
1	Are safety meetings held?			
2	Have accidents/incidents involving contractors been reported and investigated?			
3	Are self-inspections conducted?			
4	Are emergency procedures understood and communicated?			
5	Has SHE training been conducted and documented?			
6	Are appropriate SHE programs or plans in place?			
7	Have contractor orientations and/or pre-job meetings been conducted?			
Housekeeping				
1	Is the laboratory orderly?			
2	Are materials properly stored and stacked?			
3	Are aisles, passageways, and roadways unobstructed?			
Fire Prevention				
1	Are fire extinguishers available?			
2	Are smoking and open-flame policies adhered to?			
3	Is grounding/bonding in place for the storage and transfer of flammables?			
4	Are flammables stored in approved containers and/or cabinets?			
Personal Protective Equipment				
1	Are contractors wearing the appropriate PPE?			
	• Eye protection			
	• Hard hats			
	• Safety shoes			
	• Hearing protection			
	• Fall protection			
	• Protective clothing and gloves			
	• Welding helmets/goggles			
	• Respirators			

Contractor Inspection Checklist (continued)

Contractor:	**Laboratory/Location:**
Person(s) Conducting Inspection:	**Date:**

Program Administration		**Yes**	**No**	**N/A**
2	Are safe-work-permitting procedures followed? • Confined space entry • Lockout/tagout • Hot work			
Hazard Communication				
1	Are containers properly labeled?			
2	Are MSDSs available for contractor chemicals?			
3	Are chemicals properly stored?			
4	Are compressed gas cylinders secured?			
5	Have contractors received hazard communication training?			
Equipment				
1	Are hand and portable power tools in good condition?			
2	Are GFCIs in use or is there a ground assurance program?			
3	Are scaffolds properly erected and in good condition?			
4	Are ladders in good condition?			
5	Are fork trucks and heavy equipment properly inspected and used by trained personnel only?			
Other deficiencies noted:				
Corrective action required:				

Inspection Report Sent To:

Name _____ Position _____

Date _____

1.0 Introduction

Regulations, litigation, and employee awareness of potential workplace hazards have forced employers to maintain accurate documentation of laboratory safety, health, and environmental (SHE) programs and their implementation. As such, written programs, policies, guidelines, and records are key components of sound laboratory SHE programs. Numerous regulations and standards require that laboratories maintain specific documentation to establish programs and demonstrate compliance. This chapter presents the requirements for documentation, as well as guidance for establishing and maintaining a data control system.

EPA Program Requirements
To ensure accurate documentation related to SHE programs and their implementation, each laboratory must:

- Follow federal, state, and local regulations for recordkeeping, including record retention, confidentiality, availability, and updating.
- Follow requirements of U.S. EPA Directive 2100—Information Resources Management Policy Manual, Chapter 10—Records Management.
- Establish a document control and retention procedure for SHE records.

Program Administration
To effectively manage recordkeeping and document control, responsibilities should be assigned for:

- Identifying federal, state, and local requirements for recordkeeping relative to SHE programs and their implementation
- Developing, maintaining, and updating required written programs
- Incorporating SHE requirements into existing standard operating procedures (SOP)
- Maintaining all required records, (e.g., accident/injury, training, exposure monitoring, medical, and equipment)
- Completing OSHA Form 200-F
- Establishing effective document control and retention procedures for SHE-related records

2.0 Recordkeeping Requirements

EPA laboratories must follow all federal, state, and local regulations, and maintain the corresponding documentation. Specific recordkeeping requirements are provided in the following sections and depicted in Figure A4-1.

In addition, EPA Directive 2100 defines the EPA records management program, including requirements and standard Agency practices.

2.1 Written Programs and Procedures

All laboratories are responsible for having up-to-date programs and procedures in place to ensure that their activities are conducted in compliance with applicable SHE requirements and policies. This documentation is not limited to compliance programs, but should also include SOPs and emergency response plans. Figure A4-2 presents examples of the written programs and procedures.

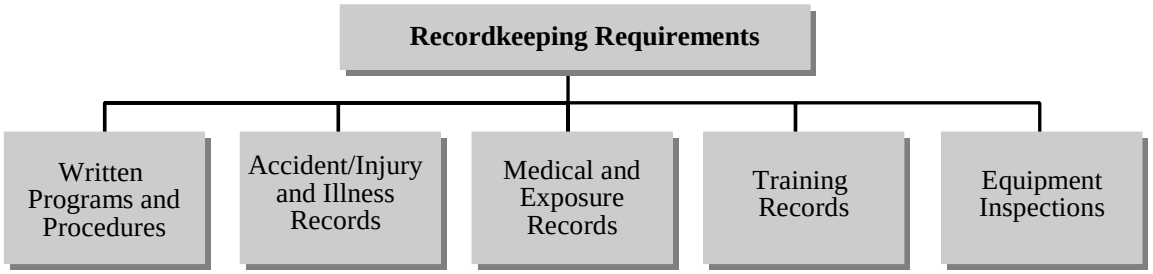
2.1.1 Written Programs

Each laboratory will be responsible for developing comprehensive laboratory SHE programs, as described in Chapter C of this manual. Chapter C provides the minimum program requirements, as specified by regulations and EPA policy.

Although every laboratory is required to develop and maintain a written chemical hygiene plan (CHP), written programs for other areas may not be required for all laboratories. Therefore, the chemical hygiene officer (CHO), or a similarly qualified person at each laboratory, should be responsible for determining the applicability of these programs to laboratory operations, and for ensuring that written programs are developed if required.

For all written programs, including the CHP, up-to-date copies must be maintained at each laboratory and be available to all personnel, their designated representatives, or other interested parties. Typically at EPA laboratories, copies of written

Figure A4-1: Specific Recordkeeping Requirements



programs are maintained in the library and in the CHO's office. Copies should also be available for each field (e.g., trailer) laboratory. The CHP must be reviewed and evaluated at least annually and updated as necessary.

2.1.2 Standard Operating Procedures

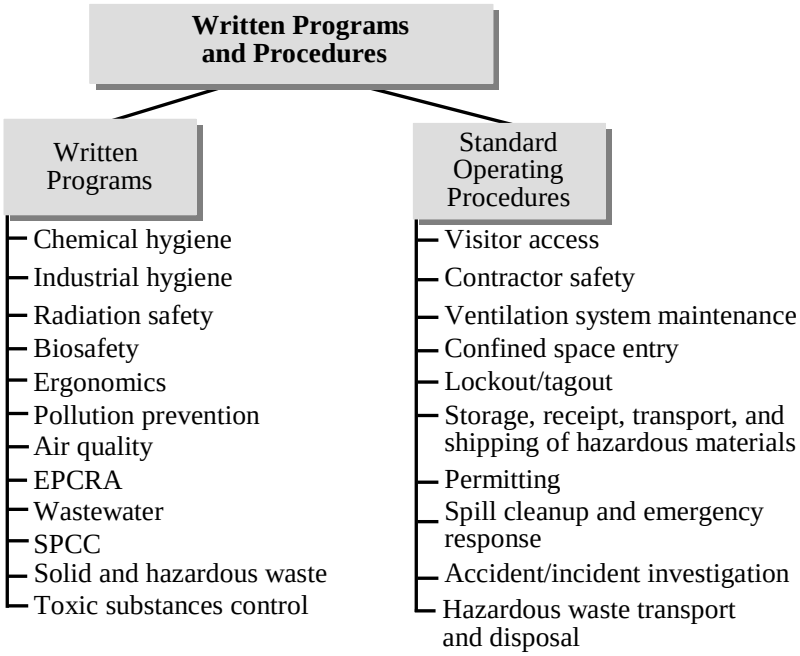
Stand-alone compliance programs may not always be sufficient to effectively manage SHE. Compliance systems and activities should be integrated with other operational control systems as much as possible. Laboratories should identify functions, activities, and processes that are associated with potentially significant SHE issues or impacts, and develop SOPs to address these issues. For instance, these activities may include certain maintenance operations, construction activities, contractor work, or emergency response functions.

At laboratories, there are SOPs that may be required above and beyond written compliance programs as shown in Figure A4-2.

No specific format is required for SOPs; however, each should address the procedure to be followed, the PPE needed, the training and medical monitoring required, and any special approval or review process involved (e.g., hazardous work permits). SOPs may be incorporated into the laboratory's CHP or other programs to the extent feasible.

All SHE SOPs must be readily available for examination during inspections, audits, and program reviews. As with written compliance programs, SOPs should be reviewed and updated as needed (i.e., at least annually) to reflect changes in requirements, operating conditions, or SHE hazards and risks.

Figure A4-2: Examples of Written Programs and Procedures



2.2 Accident/Injury and Illness Records

All accidents, incidents, and injuries involving EPA staff, visitors, and contractors will be reported, investigated, and documented. This will help to ensure that adequate investigation of root cause is completed, unsafe conditions are corrected, and that employees receive proper medical attention when necessary. Specific guidance related to accident investigation is presented in Chapter G of this manual. However, there are recordkeeping requirements and guidelines for all occupational accidents, incidents and injuries. Records related to this process include, but are not limited to, the following:

- EPA Form 1440-9 "Supervisor's Report of an Accident/Illness"
- OSHA Form 200-F, "Log of Federal Occupational Injuries and Illnesses"
- OSHA Form 102-F, "Annual Summary of Federal Occupational Injuries and Illnesses"
- Forms related to Workers' Compensation claims, such as the "Federal Employee's Notice of Traumatic Injury" or "Federal Employee's Notice of Occupational Disease"

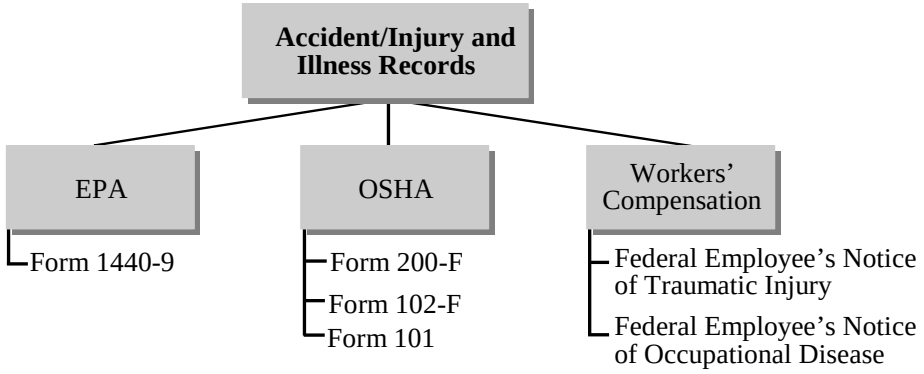
Records related to accidents and incidents must be maintained for five years following the end of the calender year to which they relate. These records may be stored at a Federal Records Retention Center that has reasonable access. However, in all cases, records must be available for inspection and copying by representatives of the U.S. Department of Labor (DOL), or the Department of Health and Human Services, or states accorded jurisdiction under OSHA. Additional guidance for completing the OSHA forms is presented in the following sections.

Figure A4-3 provides a summary of the accident/injury and illness records.

2.2.1 OSHA Form 200-F

OSHA requires employers with 11 or more employees to collect and maintain injury and illness records for their own employees at each establishment. The DOL's

Figure A4-3: Accident/Injury and Illness Records



publication "Recordkeeping Guidelines for Occupational Injuries and Illnesses" explains precisely how cases are to be recorded on the required forms. However, the following guidelines apply to EPA laboratories:

- Every OSHA recordable injury and illness must be recorded on an OSHA Form 200-F, or equivalent, within six working days from the time the employer learns of the injury or illness.

- OSHA Form 200-F must be maintained at each laboratory and available for inspection. If the OSHA Form 200-F is prepared and maintained at another location, a copy of the form, updated to within 45 calendar days, must be present at all times at the laboratory.

- A supplementary form, the OSHA 101, must also be completed within six working days from the time that the employer learns of a work-related injury or illness. Workers' compensation reports, insurance reports, or other reports may be used as substitutes if they contain all the information required by the OSHA 101 Form.

- The OSHA Form 200-F must be maintained on a calendar-year basis and must be retained for five years at each laboratory.

- Each year the employer must post the annual summary of the previous calendar year's occupational injuries and illnesses. This must be posted in a conspicuous place by February 1st of the calender year and remain posted until at least March 1st.

Forms and summaries must be maintained for five years following the end of the calender year to which they relate. They are not considered confidential medical records and shall be made available to SHE committees, employees, former employees, etc., upon request.

2.2.2 Classification of Occupational Injuries/Illnesses

When determining whether to record a case on the OSHA Form 200-F, it is important to understand the classifications of injuries and illnesses.

An *occupational injury* is an injury (e.g., a cut, puncture wound, fracture, sprain or strain) that results from a work accident or from an exposure involving a single incident in the work environment. Injuries are, by definition, the result of instantaneous events.

An *occupational illness* is any abnormal condition or disorder, other than one resulting from an occupational injury, caused by exposure to environmental factors associated with employment. Occupational illnesses are, by definition, the result of exposures over time, and include illnesses or diseases caused by inhalation, absorption, ingestion, and direct contact.

Table A4-1 provides some examples of occupational illnesses and injuries. In addition, it should be noted that occupational bloodborne pathogen exposure incidents are typically classified as injuries, since

Table A4-1: Occupational Injuries and Illnesses

Occupational Injuries	Occupational Illnesses
• Animal or insect bites • Cuts or puncture wounds • Fractures or sprains • Amputations • Needlesticks • Exposures to bloodborne pathogens	• Skin diseases • Dust diseases of the lungs • Systemic effects of poisoning • Heatstroke, sunstroke, heat exhaustion • Repetitive trauma disorders • Noise-induced hearing loss

they are generally the result of instantaneous events, such as needlesticks, blood splashes, etc. However, ergonomics-related injuries, such as repetitive trauma disorders, are typically classified as illnesses since they result from long-term exposure.

2.2.3 Definition of Recordable

All occupational deaths and nonfatal illnesses are recordable. Nonfatal occupational injuries are only recordable on the OSHA Form 200-F if they involve one or more of the following:

- Loss of consciousness
- Restriction of work or motion
- Termination or transfer to another job
- Medical treatment beyond first aid
- Lost workdays

2.3 Medical and Exposure Records

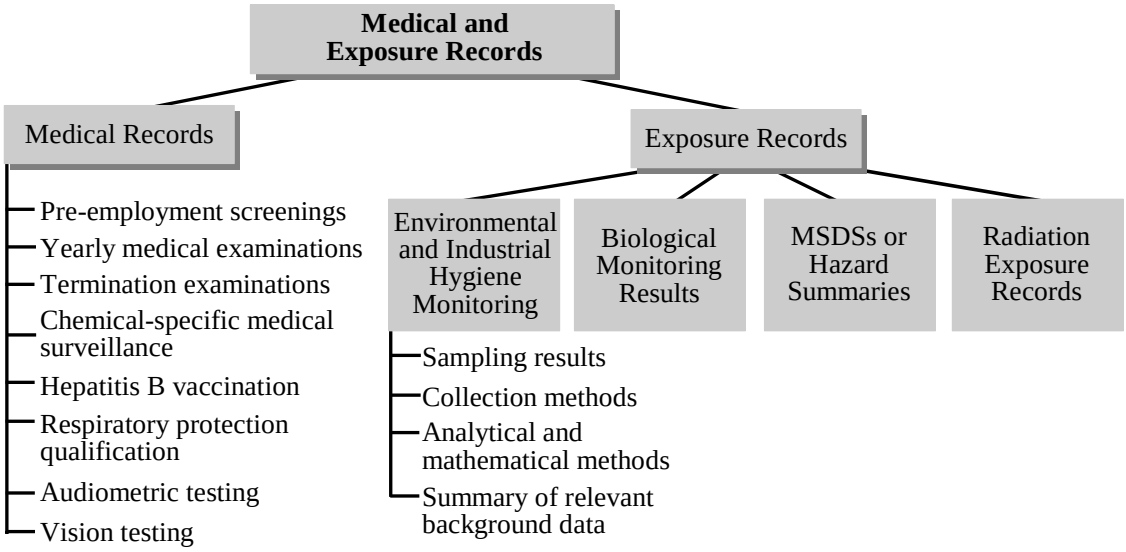
OSHA's "Access to Employee Medical and Exposure Records" standard in 29 CFR 1910.1020 requires employers to maintain medical and exposure records produced because of an employee's exposure to toxic substances and harmful physical agents. Employees or their designated representatives have a right to review their individual employee medical or exposure records at any time, upon request. Figure A4-4 summarizes medical and exposure records to be maintained.

2.3.1 Medical Records

EPA laboratory employees may be subject to specific medical surveillance requirements, depending on where they work and to which hazards they are exposed. In addition, EPA employees may receive medical attention following a potential exposure incident, after responding to an emergency, or if they experience signs and symptoms of overexposure. Specific medical surveillance requirements are included in Chapter C2 of this manual. OSHA also requires that, when an employee first enters into employment, and at least annually thereafter, each employer shall inform them of the following:

- The existence, location, and availability of medical records
- The person responsible for maintaining and providing access to medical records
- Each employee's rights to access medical records

Figure A4-4: Medical and Exposure Records



2.3.2 Exposure Records

An employee exposure record is a record containing the information used to assess an employee's exposure to harmful agents. These records include, but are not limited to, the following information:

- Environmental and industrial hygiene monitoring results
- Biological monitoring results that directly assess the absorption of a hazardous compound
- Material safety data sheets (MSDSs); records of the amounts of high-risk hazardous and OSHA toxic substances stored and used, with the dates of use and the names of users; or hazard summaries that describe the chemical(s) to which the employee was exposed and that identify where and when the chemical(s) were used
- Radiation exposure records for ionizing and nonionizing radiation

Each employee exposure record must be maintained for at least 30 years, unless a specific SHE standard requires a different period. However, background data, such as laboratory reports and worksheets, need to be retained for only one year. This exception applies only if the information listed in the first bullet above is retained for at least 30 years.

2.4 Training Records

EPA laboratory employees will be given initial and periodic SHE training to address regulatory requirements and to ensure that employees have sufficient knowledge to conduct their work in a safe and healthful manner without endangering human health and the environment. All EPA laboratories must maintain training records for all SHE compliance to ensure that all employees who need training receive it, that refresher courses are provided at the appropriate intervals, and that documentation is available should it be needed. Figure A4-5 presents a summary of some training topics as well as documentation information.

Some regulations, such as OSHA's Bloodborne Pathogens Standard, have additional requirements for documentation. However, as shown in Table A4-2, these requirements are typically consistent with the general requirements. Additional requirements for training and training documentation are provided in Chapter C3 of this manual.

All training records should be maintained by the CHO or the employee's supervisor for the duration of employment, at a minimum. Employee training records are not confidential, and should not be maintained with the employee's medical records.

Figure A4-5: Summary of Recordkeeping and Training Requirements

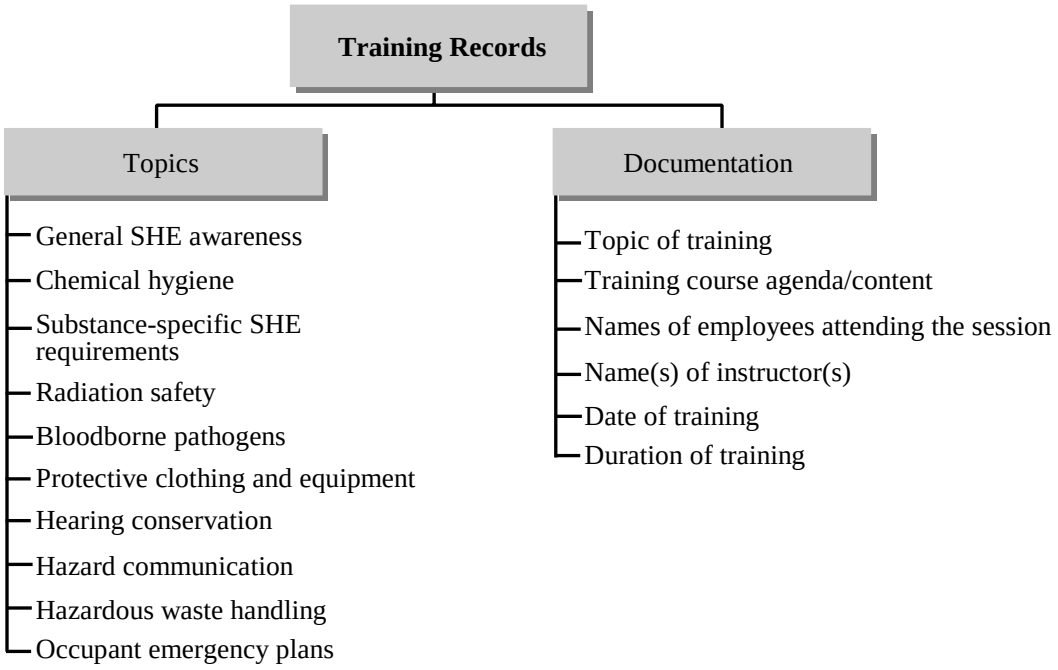


Table A4-2: Training Program Documentation Requirements

Training Program	Documentation Requirements
Bloodborne Pathogens	• Dates of the training • Contents or a summary of the training • Names and qualifications of the persons conducting the training • Names and titles of all persons attending the training
PPE	• The date of training • Subject of training (i.e., what types of PPE) • The name of the trainer • The name of the employee trained

2.5 Equipment Records

Laboratories should also ensure that proper documentation is maintained for all equipment, particularly safety and emergency equipment. Documentation should be kept for all inspections, testing, and maintenance, and should include the information in Figure A4-6.

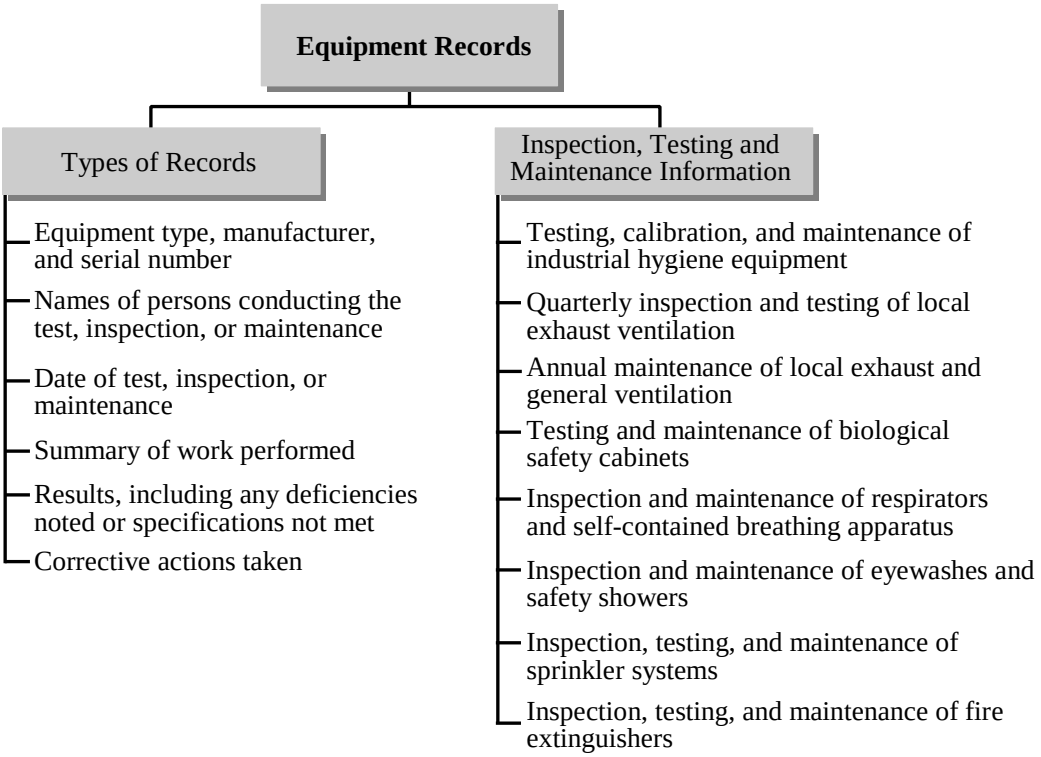
This figure also provides examples of the types of equipment records that should be maintained by each laboratory. This list is not meant to be all-inclusive, and should be supplemented with any laboratory-specific or program-specific requirements. Equipment records should be maintained for at least three years and kept in an accessible location so that users or maintenance personnel can refer to them when suspected malfunctions occur.

2.6 Other Records

In addition to the records discussed in the previous sections, laboratories should ensure that their document control systems address the maintenance, retention, and archiving of the following records:

- Laboratory SHE goals, objectives, and targets
- Hazard information, including the results of risk assessments, chemical inventories, job hazard analyses, etc.
- Results of PPE assessments
- Minutes from safety meetings
- Major safety suggestions from personnel
- Complaints from personnel and from the community
- Inspection and audit reports
- Spill log
- “Near-miss” reports
- Corrective action log

Figure A4-6: Summary of Equipment Records



3.0 Document Control/Availability

All laboratories should ensure that SHE-related documentation is cost-effectively collected, stored, processed, analyzed, and reported. To ensure that the documentation program meets these objectives, documentation control procedures must be established that address standardized format, sign-off, record retention requirements, provisions for archiving information, etc. An effective document control program should generate a paper trail that will provide the employee, employer, and regulatory agencies with an accurate representation of how exposures to laboratory hazards are controlled.

3.1 Document Control

Each laboratory should establish a document control system that is consistent with International Standards Organization (ISO) 9000 quality requirements and industry standards. This system will be used to create, track, store, and maintain documents related to SHE compliance. The laboratory's document control system should ensure that all SHE documents are:

- Approved for adequacy and quality by qualified personnel
- Periodically reviewed and revised or updated as necessary
- Replaced by superseded versions when they are obsolete
- Legible, dated, identifiable, orderly and readily retrievable

- Properly labeled (e.g., for legal requirements; as confidential; as a regulatory report; etc.) and archived
- Protected against damage or loss
- Maintained according to established record retention requirements

3.1.1 Identification of Requirements

As a first step in developing a document control process, members of the Health and Safety Committee and other key staff should review pertinent SHE regulations and EPA policies. This will help to ensure that all documentation requirements that apply to operations and activities have been identified. If a documentation program already exists at the facility, a periodic review should be conducted to ensure that the documentation program is current. Careful consideration of the physical form and location of records and written programs should also be included in this first phase.

3.1.2 Distribution of Documents

After documents have been developed, laboratory management should ensure that they are distributed, posted, and/or circulated to employees, principal investigator(s), regulators, and/or other affected parties. Audits, inspections, or other types of review should verify that the documents are actually used. The laboratory management must also ensure that the documents are readily available for regulatory inspections and annual program reviews. The distribution system should include a list of documents and locations with the names of staff who keep them; signed statements that employees have read program documents; and notification that individuals or groups have received copies of program documents and/or records.

3.1.3 Maintenance and Update of Documents

Documentation programs need to remain current, and the documentation itself needs to be maintained as the program is implemented. The laboratory should establish a system to ensure that written compliance programs are reviewed, updated, and approved as frequently as necessary. In addition, documents subject to certain regulations (e.g., OSHA) must be retained for specified lengths of time (e.g., medical surveillance and exposure monitoring records). The recordkeeping system should be designed to ensure that staff with "need-to-know" requirements have access to particular records and documents, and that confidential records are maintained as such, in accordance with the Privacy Act.

3.2 Information Technology

Where feasible, information technology should be used to make the management of SHE-related data more efficient and cost-effective. Initially, each laboratory should assess the information system and technology needs of their SHE activities, and should explore options for automation and database use.

1.0 Introduction

Executive Order 12196 and 29 CFR 1960.78 require the EPA to establish a program to evaluate the effectiveness of its own safety and health programs and to submit an annual summary of this evaluation to the Secretary of Labor. In addition, the unique nature and diversity of hazards at EPA laboratories make periodic inspections and walk-throughs essential. Evaluating program effectiveness will ensure that hazards are comprehensively and routinely identified, evaluated, and controlled.

The following sections provide detailed guidance on three levels of program evaluation as shown in Figure A5-1.

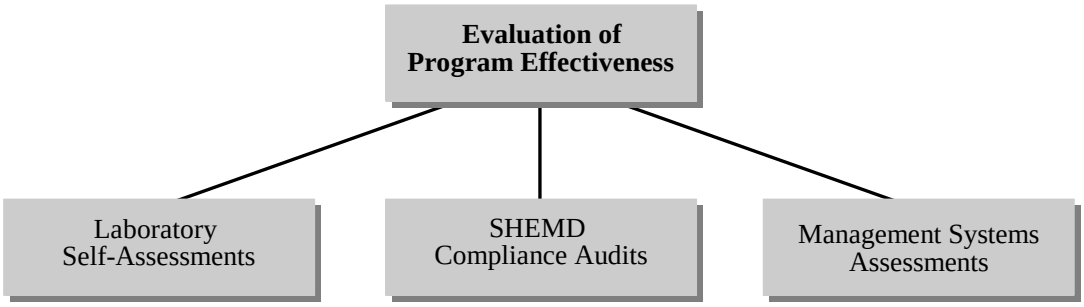
EPA Program Requirements
To ensure that necessary safeguarding is provided to protect against hazards, the following inspections, audits, and assessments will be performed:

- Semiannual inspections of each laboratory by individuals qualified to recognize and evaluate hazards, and with sufficient experience to suggest abatement procedures
- Annual reviews of program effectiveness and laboratory safety, health, and environmental (SHE) management systems
- Independent compliance audits and management systems assessments every three years, through the Safety, Health, and Environmental Management Division (SHEMD).

Program Administration
To effectively implement this program, responsibilities should be assigned for:

- Conducting semiannual laboratory inspections and annual chemical hygiene program reviews
- Developing, documenting, and implementing corrective actions in response to deficiencies identified during inspections, audits, or management systems assessments
- Updating programs, as necessary, to address any deficiencies or changes identified during the inspections and program reviews

Figure A5-1: Levels of Program Evaluation



- Maintaining all documentation related to inspections, audits, and assessments

- Tracking trends in inspection, audit, and assessment findings to identify opportunities for continuous improvement

2.0 Laboratory Self-Assessments

Each laboratory shall conduct periodic inspections and program reviews to ensure the continued effectiveness of SHE programs and procedures. These self-assessments should include formal, documented inspections, as well as annual program reviews, as required by the U.S. Occupational Safety and Health Administration (OSHA) Laboratory Standard and presented in Figure A5-2.

Laboratory inspections and program reviews shall be conducted by Safety, Health, and Environmental Management Program (SHEMP) Managers or other designated, qualified personnel. Staff with collateral-duty SHE responsibilities are expected to be qualified to conduct laboratory inspections. When necessary, the expertise of the SHEMP Manager and collateral-duty staff should be supplemented by employees who specialize in the operation of certain processes.

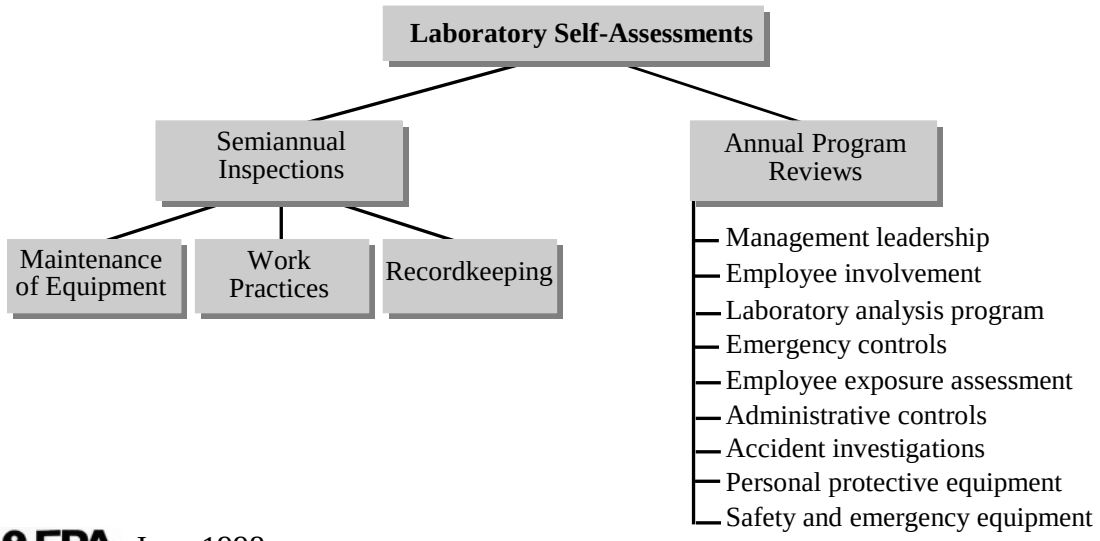
2.1 Semiannual Inspections

Visual inspections of federal workplaces are required by 29 CFR 1960. For EPA laboratories, these inspections shall be performed by the chemical hygiene officer (CHO) or other designated and qualified (i.e., adequately trained) individuals (e.g., members of the safety committee).

The inspections shall be conducted at least semiannually, since laboratories have an increased risk of accidents, injuries, and illnesses compared to the typical office environment due to the nature of the work performed. Prudent practice recommends:

- Quarterly housekeeping inspections for laboratories
- Frequent change of inspection personnel
- Semiannual inspections for other laboratories

Figure A5-2: Types of Laboratory Self-Assessments



In addition, more frequent inspections are recommended if SHE performance has been poor (i.e., if there was a significant number of violations during previous inspections).

A laboratory inspection checklist may be used to guide the laboratory inspections to ensure the integrity of the process. In addition, particular attention should also be given to the areas discussed in the following sections.

2.1.1 Maintenance of Equipment

For emergency and first-aid equipment (e.g., eyewash stations and safety showers), a visual inspection is not adequate. This equipment should be tested as part of the semiannual inspections. Additional guidance for the testing of emergency equipment can be found in Chapter G3 of this manual.

2.1.2 Work Practices

For accurate and representative results, the laboratory inspection should be conducted during normal laboratory hours and operations. Personnel may then be observed to ensure that they are following safe work practices and wearing proper personal protective equipment.

2.1.3 Recordkeeping

A sample of laboratory records (e.g., training, inspection, and standard operating procedures) should also be reviewed.

Since the purpose of the inspections is to identify and correct safety issues, previous inspection reports should be consulted to ensure that past discrepancies were corrected. All inspection reports should be dated, signed, and promptly submitted to the CHO. The review of the laboratory records and the inspections will facilitate the program review and evaluation of the chemical hygiene plan (CHP), which is required at least annually.

2.2 Annual Program Reviews

The OSHA Laboratory Standard requires an annual review of the CHP to determine its effectiveness. The evaluations should be conducted in accordance with the criteria and guidelines contained in the Management Systems Review Protocol in the EPA SHE Audit Protocol.

The program assessment differs from a simple laboratory inspection, in which only the laboratory, processes, and work practices are examined for areas of noncompliance and any hazards or risks that are inadequately controlled. Instead, a program review evaluates each of the management systems that constitute the SHE program, including the following:

- Level and effectiveness of management leadership
- Level of employee involvement in the SHE program
- Quality and effectiveness of laboratory analysis programs (e.g., inspections, surveys, job hazard analyses, etc.)
- Adequacy of engineering controls such as laboratory hoods and other local exhaust ventilations

- Assessment of employee exposures that may exceed the action-level, or in the absence of the action-level, the permissible exposure level

- Adequacy of administrative controls (e.g., recordkeeping, medical surveillance, training, etc.)

- Adequacy of accident and "near-miss" investigations

- Appropriateness, availability, and condition of personal protective equipment

- Availability, location, and condition of safety and emergency equipment

The annual program review should be conducted by the CHO and the results of the assessment should be communicated to the SHEMP Manager, laboratory supervisors and Laboratory Director, at a minimum.

3.0 SHEMD Compliance Audits

The SHEMD will conduct compliance audits of each laboratory at least every three years.

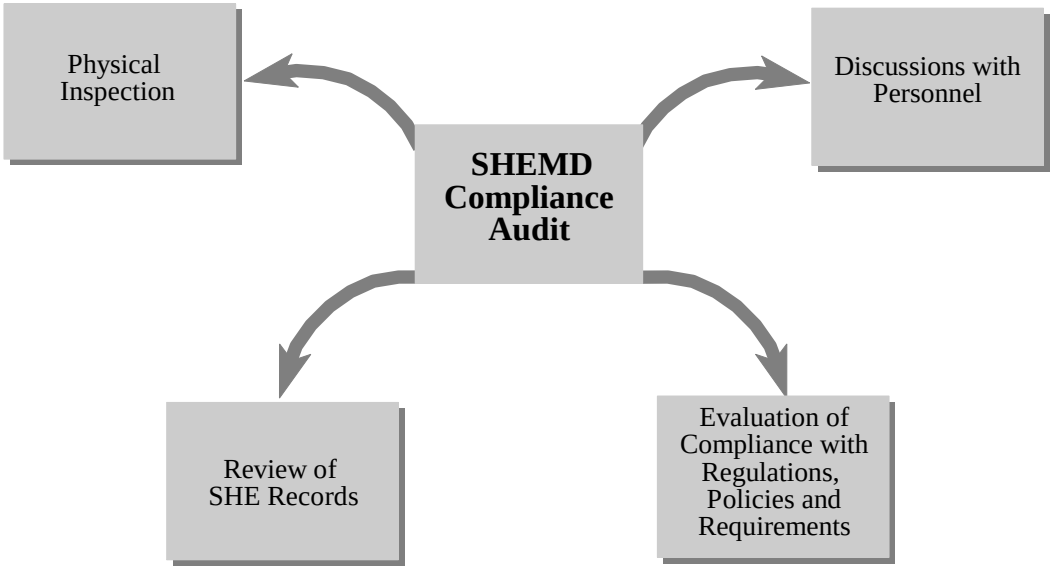
The objectives of the SHEMD audit are to:
- Determine the laboratory's compliance status with applicable SHE regulations
- Evaluate the effectiveness of SHEM systems
- Make recommendations to improve compliance and correct identified compliance problems
- Increase the overall level of SHE program awareness at the laboratory

The audit will consist of the activities as presented in Figure A5-3.

4.0 Management Systems Assessments

Each SHEMD audit will also include a review of management systems and practices.

Figure A5-3: Components of SHEMD Compliance Audits



Management systems assessments will identify risks and hazards that result from both a lack of knowledge (i.e., knowledge-based deficiencies) and a failure to take the appropriate actions (i.e., action-based deficiencies). By distinguishing between the two types of deficiencies, the review will uncover the root causes of problems in the SHE program. For example, the failure to use appropriate personal protective equipment may be linked to inadequacies in the chemical hygiene training program. By identifying the underlying problem, or "bottom line," management will be better equipped to make effective changes or revisions to the existing SHE policies.

There are several methods that can be used to evaluate the design and effectiveness of a laboratory's SHE management systems; however, a thorough review will include the following three activities, at a minimum:

- Examination of documentation
- Review of laboratory conditions
- Formal and informal interviews with employees at each level of the organization

5.0 Assessment Documentation

Written reports of inspections, audits, and assessments are necessary to document the hazards discovered and responsibility assigned for correction, and to track corrections to completion. As such, laboratories must maintain records that document the results of all inspections, audits, and assessments and the corrective actions that were implemented to address deficiencies. In addition, notices of unsafe or unhealthful working conditions must be prepared and maintained, as necessary.

5.1 Inspection and Audit Records

For laboratory inspections, the CHO and/or SHEMP Manager is responsible for maintaining all documentation related to the inspection, including the following:

- The specific procedures followed in the inspection
- The name of the person(s) conducting the inspection
- The scope of the inspection
- A description of all findings that result from the inspection
- Documentation of corrective actions taken

For SHEMD audits and management systems assessments, copies of the reports will be mailed to the laboratory, where they should remain on file.

5.2 Notice of Unsafe or Unhealthful Working Conditions

If warranted, a notice of unsafe or unhealthful working conditions must be issued no later than 15 days after completion of the inspection for safety violations and no later than 30 days for health violations. A copy of these notices must be sent to key personnel (e.g., CHO, Laboratory Director, supervisor), and where there are compelling reasons why such notice cannot be issued within this time frame, the key personnel must be orally informed. All notices must describe the nature of the hazard and the severity of the unsafe or unhealthful working condition, and, if possible, should also include reference to the applicable standard or other requirement. In addition, the notice should include a reasonable time for the correction or abatement of the condition.

All notices must be posted immediately at or near each place where the condition exists, and must remain in place until the unsafe or unhealthful working condition has been abated or for three working days, whichever is later. A copy of the notice must be filed and maintained for a period of five years after abatement.

For situations or conditions of imminent danger, the unsafe or unhealthful condition should be corrected immediately or isolated to prevent worker exposure.

6.0 Corrective Action

All areas of noncompliance identified through inspections, program reviews, audits, and assessments should be documented in an abatement plan. Noncompliance could be defined as a deviation from regulations; laboratory policies, procedures, objectives and targets; or the principles of sound management.

The CHO, with input from laboratory management and employees, will be responsible for investigating noncompliance and identifying appropriate corrective actions. The abatement plan should clearly describe the corrective actions that will be taken to address the root cause of the deficiency, mitigate potential impacts, and prevent recurrence. In addition, the documented abatement plan should include, at a minimum, the individuals responsible for the corrective action and the expected date of completion. If it is determined that the deficiency cannot be corrected, the abatement plan should clearly state the reason behind the determination, a description of any interim measures, and a description of the long-term final correction, if applicable.

If corrective actions cannot be made within 30 calendar days, SHEMP Managers should contact the SHEMD for assistance in developing an abatement plan. This plan will include the following elements:

- An explanation of the circumstances of the delay in abatement
- A proposed timetable for the abatement
- A summary of steps being taken in the interim to protect employees from being injured as a result of the unsafe or unhealthful working condition

Completion of corrective action plans should be monitored, and the effectiveness of corrective actions will be evaluated through subsequent audits and performance monitoring.

7.0 Continuous Improvement

All inspection and audit data will be used to drive the continuous improvement cycle. Data on audit results, regulatory noncompliance, etc., should be analyzed periodically to determine trends, identify improvement opportunities, and update programs and procedures as necessary.

The CHO and/or SHEMP Manager will be responsible for tracking trends in performance. Important lessons learned and issues identified through this process will be shared throughout the organization.