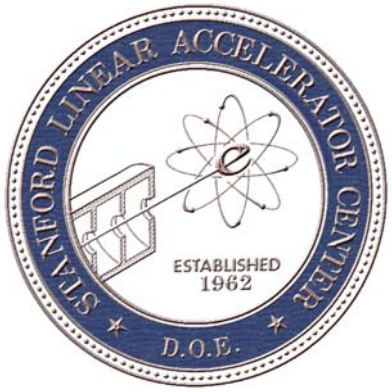

Engineering and Technical Support Directorate
Integrated Safety and Environmental Management (ISEMS) Plan

This Plan was reviewed and approved by:

_____ _____
Persis Drell, Laboratory Director Date

_____ _____
Lowell Klaisner, Program Director Date
Engineering and Technical Support

Annual Review and Update

Engineering and Technical Support Directorate
Integrated Safety and Environmental Management (ISEMS) Plan

The Engineering and Technical Support Directorate ISEMS Plan was reviewed with no substantive changes in either content and/or ES&H resource commitment.

_____ _____
Lowell Klaisner, Program Director Date

_____ _____
Barb Fuller, Directorate ES&H Coordinator Date

The Directorate ISEMS Plan was reviewed and has the following substantive changes in either content and/or ES&H resource commitment:

_____ _____
Lowell Klaisner, Program Director Date

_____ _____
Barb Fuller, Directorate ES&H Coordinator Date

1. Introduction:

This plan is implemented as part of SLAC's overall Integrated Safety and Environmental Management (ISEM) System. It supports two key SLAC Environment, Safety and Health (ES&H) Policy Documents:

- The *SLAC Integrated Safety and Environmental Management System Description*[1]
- The *SLAC SLAC Environment, Safety, and Health Manual*, especially Chapter 1, "General Policy and Responsibilities", and Chapter 2, "Work Authorization"[2]

More importantly, we follow ISEMS principles and core functions because they have proven effective in protecting individuals, the public, and the environment. Purposes of this plan are to describe how:

- We integrate ES&H considerations into the planning and work of the Engineering and Technical Support Directorate
- Our operations meet ES&H Policy requirements in the ES&H Manual and other relevant safety policy documents
- We reinforce responsibility and accountability for safety by line management and each individual
- The work of our Directorate is authorized per Chapter 2 of the ES&H Manual
- Activities are analyzed for potential hazards
- Hazards are controlled through the use of tailored controls:
  - Engineering controls
  - Administrative controls
  - Personal Protective Equipment
  - Training and oversight
- Controls are implemented and work is done only within controls
- We implement effective self-assessment and continuous improvement programs (see Chapter 33 of the ES&H Manual)
- Staff competency is assessed and documented
- The Directorate and Department ES&H Coordinators support the Directorate program and interrelate.
- Requests for funding include adequate resources to assure safety is integrated with program objectives.

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1 *SLAC Integrated Safety and Environmental Management System Description* (SLAC-I-720-0A008-001), http://www-group.slac.stanford.edu/esh/general/isems/sms.pdf

2 *SLAC Environment, Safety, and Health Manual* (SLAC-I-720-0A29Z-001), http://www-group.slac.stanford.edu/esh/eshmanual/

2. Institutional Policies and Organization

SLAC Mission and ES&H Policy

SLAC Mission[3]

Photon Science Discoveries
To make discoveries in photon science at the frontiers of the ultrasmall and ultrafast in a wide spectrum of physical and life sciences.

Particle and Particle Astrophysics Discoveries
To make discoveries in particle and astroparticle physics to redefine humanity's understanding of what the universe is made of and the forces that control it.

Operate Safely; Train the Best
To operate a safe laboratory that employs and trains the best and brightest, helping to ensure the future economic strength and security of the nation .

Engineering and Technical Support Directorate Mission[4]

The Engineering and Technical Support Directorate has a mission to transform the existing facilities into a modern laboratory where people are productive and share a pride in their workplace. The Engineering and Technical Support Directorate develops the core competencies of the laboratory by adequate funding, world class facilities and staffed by leaders in the fields.

- Klystron Microwave
- Pulsed power systems
- Metrology
- Accelerator and experimental control systems

See Section 3.4 (below) for a more detailed description of these activities and their related hazards and controls.

[3] http://home.slac.stanford.edu/welcome/mission.html
[4] http://www-group.slac.stanford.edu/ets/

SLAC ES&H Policy[5]

SLAC has committed itself to achieving its mission in the context of a respectful workplace that supports the value of each individual and that persistently strives for excellence in health, safety and environmental matters.

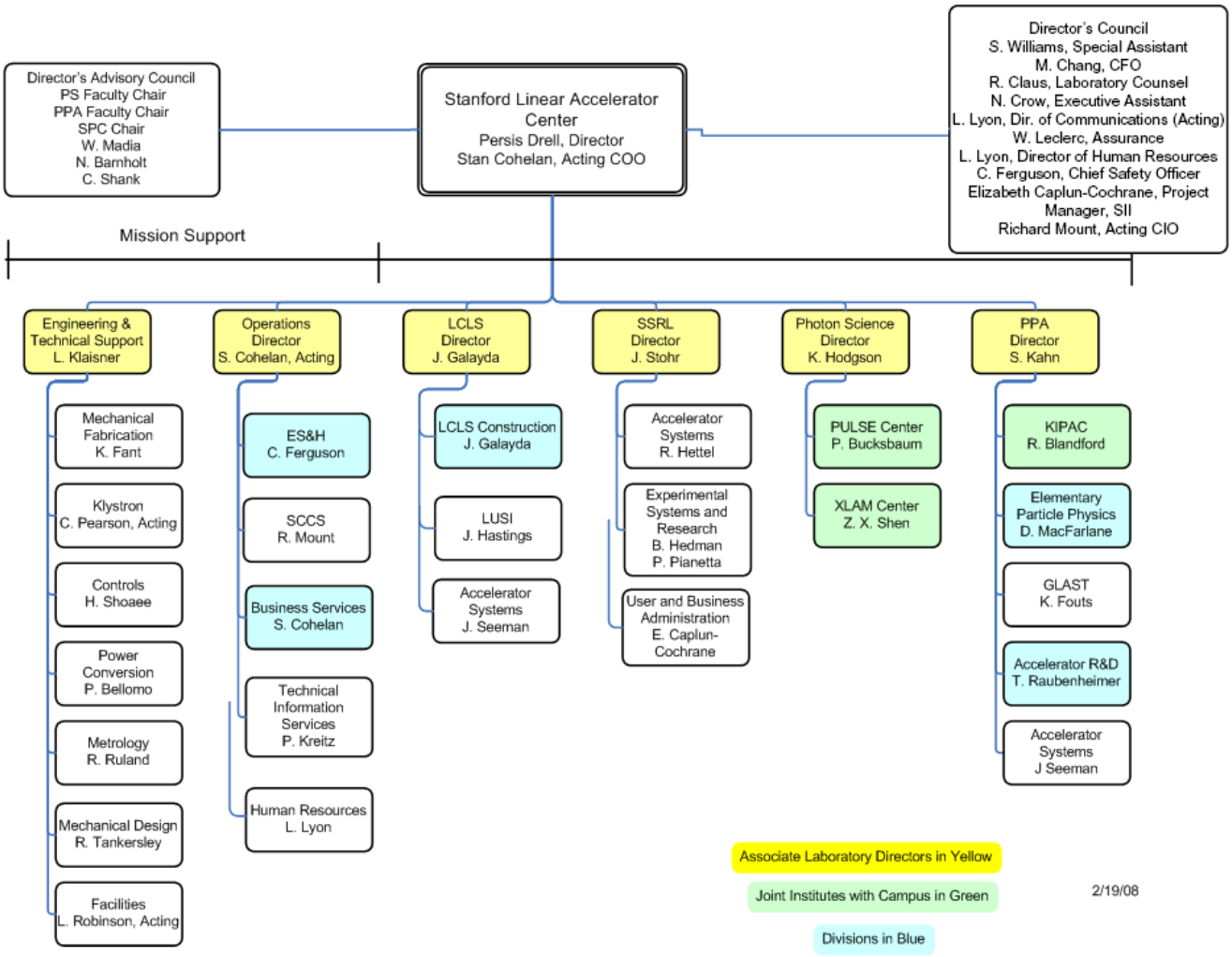
SLAC is committed to protecting the health and safety of those working at SLAC, the public and the environment as it carries out its scientific mission.

Through employee involvement and management commitment, SLAC will:

- Seek to protect human health, prevent pollution, and strive to eliminate negative ES&H impacts associated with our facilities and activities throughout their life cycles
- Exercise vigilance to ensure compliance with all applicable, laws, regulations, and best management practices
- Seek to maintain a healthful and safe workplace, free of occupational injury and illness
- Conduct sustainable programs to minimize pollution to environmental media, to protect our material resources, cultural resources, and biota
- Conserve natural resources and minimize our environmental footprint by evaluating the impact of products, services and their providers, by reducing energy and water usage, by reusing and recycling materials, by purchasing and using recyclable materials and energy-efficient devices, and by exercising pollution prevention measures, whenever technically feasible and economically justifiable
- Conduct operations such that the production of radioactive materials and radiation is maintained as low as reasonably achievable
- Integrate ES&H into project planning, design, construction, use and closure of facilities to minimize ES&H impacts associated with the project
- Conduct our activities in a sustainable manner and will partner with those businesses that offer sustainable practices and strengthen this commitment through contract language, where practical

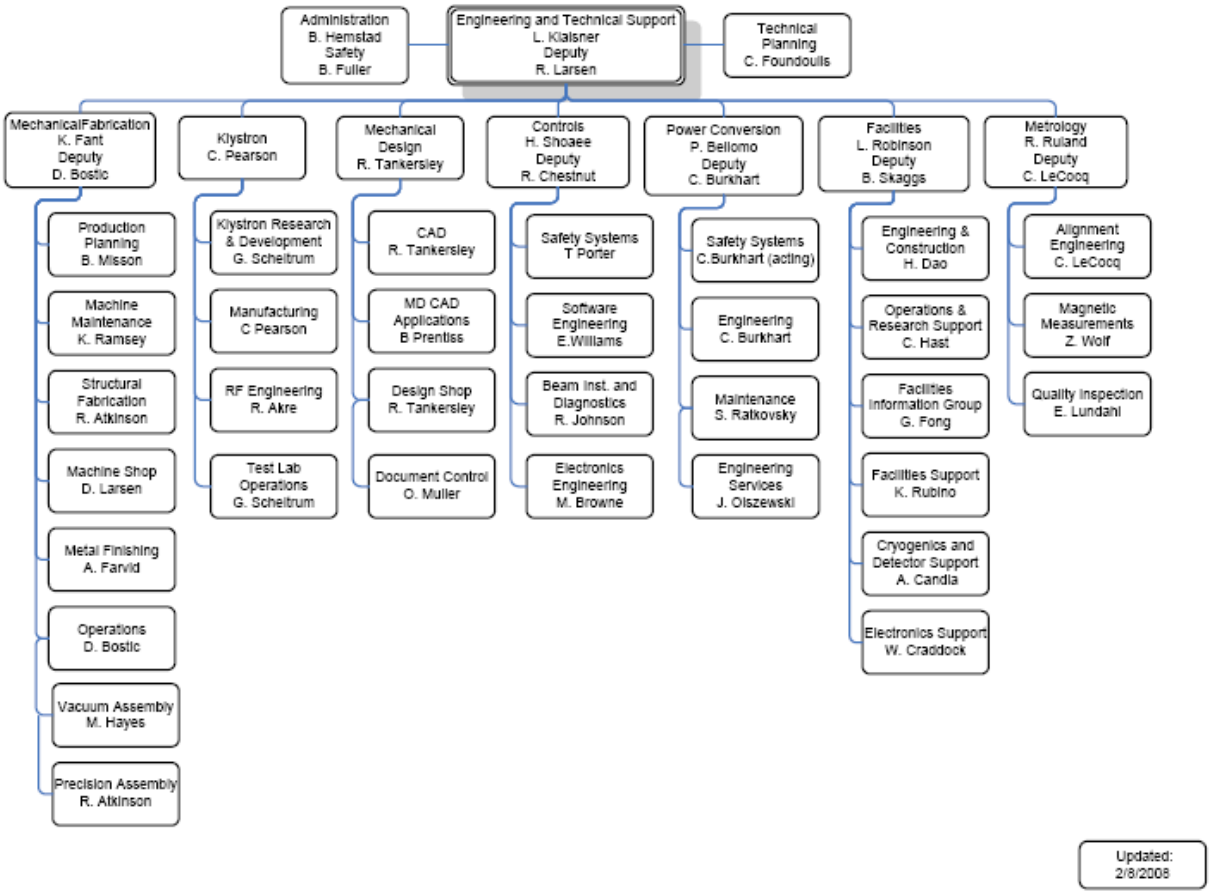
[5] http://www-group.slac.stanford.edu/esh/about_esh/eshpolicy.htm

SLAC Organization:[6]



[6] http://www-group.slac.stanford.edu/do/org/default.htm

Engineering and Technical Support:[7]



[7] http://www-group.slac.stanford.edu/ets/

3. Integration of Environment, Safety, and Health into Engineering and Technical Support Directorate

Safety (to include all aspects of ES&H), like research integrity, scientific discipline, and fiscal responsibility, is a product of culture and sound management. To achieve a truly integrated systems approach to doing work safely, ES&H must be an integral part of work from initial planning through final execution. SLAC uses ISEMS' seven guiding principles and five core functions to achieve ISEMS. All are reflected in the detailed policies and procedures of the Laboratory. The key ES&H policies for our Directorate and to which we are committed include:

- SLAC ISEMS Plan
- ES&H Manual

Line Management is responsible and held accountable for incorporating these principles and ES&H Policy into the management of our work. Working safely is a condition of employment and we cannot sustain our success unless all are committed to this end. Only in so doing will we ensure adequate protection of individuals, the public, and the environment.

ES&H considerations must be part of all planning processes, commencing with identification of work scope, identification of hazards, what standards apply, what controls are to be implemented, the competencies required to work safely, and finally the assurance that each of these elements are in place before work is authorized to proceed.

SLAC's line management focuses on safe accomplishment of mission, understanding assignments, and carrying out the core safety management functions correctly and efficiently. These principles are dependent both upon management commitment and employee/individual involvement and accountability. Management commitment is demonstrated by:

- The documented ISEMS and ES&H policy statements that are communicated throughout the organization
- Managers' accountability for safe work performance,
- The visible presence of managers addressing safety issues.
- Fostering employee involvement in development and implementation of the ISEMS,
- Emphasizing the importance of individual accountability for performing work safely through goal setting, accountability in the personnel evaluation system, and ES&H training.

Employees/individuals must be actively and continually involved in the development and deployment of the ISEMS processes that implement the ISEMS function. As individuals and

as work teams, staff members actively participate in the activities of the ISEMS processes that address workplace safety, public safety, and environmental protection. They continually examine the ISEMS management processes used to conduct their individual work efforts for continual improvement and actively pursue these improvements with line management. Individual accountability for performing work safely is emphasized.

The following sections describe key ISEMS issues unique to our Directorate:

3.1 Description of the Engineering and Technical Support Directorate's Work Activities

As called out in the Mission Statement, Engineering and Technical Support facilitates support of SLAC's mission through the expertise of its seven (7) departments, incorporating such diverse functions as: manufacturing services to fabricate, assemble and process devices for SLAC and other related institutions; manufacturing services for toxic or radioactive materials; maintenance and repair of accelerator mechanical and vacuum systems; surveying and accelerator alignment; magnetic measurement; engineering, project management, operations, maintenance and physics support to buildings, facilities and experiments; engineering and manufacturing support for the Laboratory RF systems; provide power conversion talent and systems for high energy physics storage rings and light sources; and R&D on new structures for future accelerators.

Approximately 240 buildings and 119 containers are within Engineering and Technical Support's jurisdiction.

More descriptive material for hazards and controls associated with these operations is called out in Section 3.4 below.

3.2 How Line Management authorizes work following ES&H Manual Chapter 2 – Work Authorization

Work authorization is achieved for every individual task through the Job Hazard Analysis and Mitigation (JHAM) forms (routine and non-routine), where individuals and supervisors review, approve, and sign off on the work to be done. This process ensures that those persons carrying out the work have had the proper training and are equipped with the appropriate Personal Protective Equipment (PPE) to complete the task safely.

Additional methods by which safety is ensured before work proceeds are Area Hazard Analyses (AHA), and department-generated work permits and procedures, both for their own employees and for those outside their department. An example of department-specific

work authorizations is in Mechanical Fabrication Department (MFD), where only trained and authorized users are permitted to work on the sheet metal equipment in the Weld shop.

Klystron Department requires that their work authorization form be filled out by any persons outside their own department before approval is given to proceed. Tasks that will require a Work Authorization Form are:

- All experiments performed utilizing Klystron facilities that are managed, or operated by non-Klystron personnel.
- New installations managed or performed by non-Klystron personnel.
- Facility modifications, upgrades or maintenance performed by non-Klystron personnel.
- Work for which Klystron has unusual safety concerns.

Defining roles and responsibilities is also an important part of work authorization. An example from Facilities is assigning clear responsibility for each activity to either line management or project managers; and using qualified University Technical Representatives (UTRs) to oversee construction activities.

Finally, all of our departments present projects or proposals to the appropriate citizen committees and safety officers as required by Chapter 2 of the ES&H Manual. Safety protocols in addition to roles and responsibilities are discussed and documented at pre-job planning meetings which include the necessary stakeholders (e.g., line and project managers, UTRs, ES&H coordinators, and ES&H SMEs).

More detailed discussion concerning operations and related hazard controls is found in Section 3.4 below.

3.3 Inventory of Work Hazards

Hazards shared by most of the Engineering and Technical Support Directorate work groups are grouped under the general category of “office hazards” and include the possibility of slips, trips, falls, strains and sprains, repetitive stress injuries, and small cuts or abrasions.

Some personnel perform tasks that involve greater hazards such as exposure to potentially energized circuits or arc flash, work on elevated surfaces, chemical exposure, extreme cold or heat, and hazards associated with confined spaces, oxygen deficiency and excavations.

Additional hazards found in the field that are experienced by many of the groups who perform maintenance in or around the accelerator facilities or work in other industrial areas include:

- Crane/lifting
- Low voltage electrical
- High voltage electrical
- Radiation
- Magnetic field
- Earthquake
- Stairway and ladder
- Thermal and noise

Some hazards are specific to only one or a few departments. For instance, both Klystron and MFD use hydrogen furnaces in their operations, while MFD and Facilities face confined space hazards for certain tasks. Welding operations are performed in some groups and carry hazards of intense heat and radiation (non-ionizing or UV).

A few groups use moderate quantities of solvents, presenting inhalation, transpiration, and fire hazards. MFD Plating Shop hazards include chemical exposure, cyanide, and contact with hydrofluoric acid (HF).

Additional hazard information, along with associated controls, is found in the next section (3.4).

3.4 Hazard Control Development and Implementation

In general, Engineering and Technical Support groups acknowledge and develop controls for hazards by making sure there is strong communication between supervisors and individuals which ensures that no one starts a job without the proper training, comprehension of hazards and how to mitigate them, and recognition that safety is always the highest priority in any work assignment.

Through the use of JHAMs and AHAs, annual Performance Evaluations, Staff Training Assessments, and internal documentation, each person has the responsibility to assist his or her supervisor in creating a high level of safety awareness and job readiness, in addition to expressing any concerns with an assigned task.

Though engineering controls are always preferable, administrative controls, such as internal procedures or work authorizations, provide methods by which line managers can ensure uniformity while also allowing for individual input, creating a continuous improvement process (See Section 3.6, Continuous Feedback and Controls). Required PPE is provided by the supervisors and called out in the JHAMs before the job is performed.

Since Facilities is one of our largest departments and carries out many high-hazard activities while performing its mission, it is worthwhile summarizing hazard controls from their perspective, as representative of the Engineering and Technical Support Directorate in general.

Facilities uses several means to ensure workplace hazards are identified and controlled:

- Define the scope of the work and identify the hazards.
- Plan the work to control the hazards through the use of JHAMs, AHAs, work permits and procedures. All staff work is covered by either routine or non-routine JHAMs.
- Clear responsibility for each activity assigned to either line management or project managers.
- Use of design and safety reviews as an integrated part of project management.
- Close supervision of staff and contractors.
- Support from department safety personnel and ES&H Division SMEs.
- Use of qualified UTRs to oversee construction activities.
- Employees are trained for work assigned and equipped with appropriate PPE.
- Employees know and follow all safety rules.
- All employees stop and report any unsafe activities or situations observed.
- Updating of documentation and holding of debriefings after the end of a project to identify and apply lessons learned.

Work in Facilities may be divided into 5 categories:

- **Office work**, both administrative and technical – hazards are controlled via routine JHAMs.
- **Routine Maintenance** – Hazards are controlled via JHAMs and applicable permits (e.g., EWPs), in addition to joint work authorizations (e.g., building managers) as appropriate.

- **Minor Construction** – Hazards are handled via review by appropriate ES&H SMEs or safety committees and JHAMs. Documentation updates are required. This process is documented via the Minor Construction Form.
- **Subcontractor construction** – Hazards are identified via review by appropriate ES&H SMEs. Design reviews, documentation updates and debriefings are required. Citizen Committees verify that the hazards identified by the proponents are well-managed and that other hazards have not been overlooked.
- **Construction & Operation of Experimental Equipment** – Hazards are identified via review by appropriate ES&H SMEs. Work hazards are managed via routine and non-routine JHAMs. Documentation is updated. Citizen Committees verify that the hazards identified by the proponents are well-managed and that other hazards have not been overlooked.

MFD operations also include examples of high-hazard work which are carefully controlled, as noted below. Some hazards, such as the use of HF and use of hydrogen, exist elsewhere in the Engineering and Technical Support Directorate:

- **Machine shop:**
  - Rotating machinery: machine guarding, proper attire
  - Flying objects: machine guarding, eye protections
  - Dropping heavy objects on feet: foot protection
- **Plating Shop / metal finishing shop:**
  - Chemical exposure: effective ventilation, proper PPE
  - Pinch points on pump belts: guards
  - Cyanide (CN): all CN-containing solutions isolated in a single self contained room. Air scrubber on ventilation. CN detection/alarm system.
  - Contact with HF: training, PPE, and calcium gluconate. At MFD's request, Medical Department developed a training program so that Plating Shop personnel could respond quickly to any skin exposure to HF, since quick action is critical to lessen potential bone damage.
- **Brazing / precision assembly**
  - Allowing air and hydrogen to enter a furnace retort: administrative and engineering controls
  - Hydrogen use in building: administrative and engineering controls including hydrogen gas monitoring system and alarm
  - Burns: heat shields utilized

  - Welding flash to eye: welding curtains, PPE
  - Radiologically-controlled area: signage on entry ways

Some additional ways in which Engineering and Technical Support groups control hazards are as follows:

- Signage is posted for radiologically-controlled areas and other limited access situations; for equipment where specific PPE or training is required; and in other situations.
- Directorate and department safety meetings
- Periodic self-inspections by supervisors and/or ES&H coordinators
- Annual walkthrough inspections by management
- Annual emergency evacuation drill and update of Facility Emergency Plan
- Annual building manager inspections, in which facility deficiencies are identified, documented and corrected
- Ergonomic evaluations
- Back Safety Course
- Ladder safety training
- Railings on elevated working surfaces
- Fixed ladders where possible
- Fume hoods
- Spill neutralizing/cleanup kits
- Periodic recalibration of equipment
- Monthly testing of ground fault circuit interrupters (GFCIs), showers, eyewashes (and specialized equipment such as acid neutralization tanks) in addition to inspection of fire extinguishers for certification dates

Also, in the spirit of Guiding Principle 3 (Competence Commensurate with Responsibilities), our departments further reduce risk to their own staff by calling upon the expertise of departments appropriately trained for the specific hazard (e.g., Labor Pool for lifting/transporting; Facilities for high voltage AC work).

3.5 How We Ensure Our Work Is Performed Within Controls

The Engineering and Technical Support Directorate ensures that all work within our jurisdiction is performed within controls through the use of JHAMs, AHAs, periodic supervisor field inspections, performance evaluations, ES&H Coordinator involvement, and random checks by senior management.

In addition, Citizen Committees provide guidance as needed or required (e.g. Earthquake Safety), and Safety Officers (Laser, Electrical, Radiation, Fire Marshall) augment the committees and report directly to the Chief Safety Officer (see ES&H Manual Chapters 1 and 31 for current description of these functions). Finally, SMEs in ES&H and elsewhere on site are used regularly to help individual work groups move forward in a safe and efficient manner, using current knowledge and technology while complying with any applicable regulatory drivers.

3.6 Continuous Feedback and Improvement

Keeping documentation current and holding debriefings after the end of a job or project to identify and apply lessons learned are the two most important ways our departments ensure that the feedback and improvement core function is really happening. Administrative controls such as internal procedures or work authorizations provide methods by which line managers can ensure uniformity while also allowing for individual input, creating a cycle of continuous improvement.

Completion of Line Management Walkthroughs, Line Management-led ES&H Workspace Compliance Assessments, and Line Management Assessment of Work Procedures allow further feedback and opportunity for improvement.

The Director of Engineering and Technical Support will ensure that every injury is thoroughly investigated. The focus will be on why it occurred and passing on that knowledge.

Engineering and Technical Support Directorate Department Heads will investigate with the appropriate supervisor any violation of an administrative control which takes place in their areas, in addition to close calls.

The Engineering and Technical Support Directorate utilizes the Corrective Actions Tracking System[8] and Facilities Service Request System[9] to track items requiring improvement. Both systems are periodically reviewed to look for trends.

[8] https://www-internal.slac.stanford.edu/esh-db/slaccats/bin/start.asp
[9] https://www-internal.slac.stanford.edu/cef/NonSafety/Default.htm

3.7 Specific Roles and Responsibilities

3.7.1 Line Management

- Implement ISEMS as described within this Directorate-specific ISEMS Plan.
- Provide all employees and non-employees (i.e., guests, sub-contractors, users and students) a safe workplace.
- Authorize projects and other work only in accordance with SLAC ES&H Policy, especially Chapter 2 – Work Authorization.
- Supervisors will create and communicate ES&H values and expectations[10] for each employee and:
  - Develop JHAMs in consultation with their employees
  - Review AHAs pertaining to their work area
  - Specify training
  - Hold employees accountable for completion of required training and safe work performance
  - Make safety a prominent topic at "all hands" and staff meetings
  - Ensure safety aspects of each job are evaluated and that positions are filled only with candidates having requisite competence
- "SLAC contacts" and UTRs assigned to non-employees generally have the same obligations as a supervisor:
  - Require training for guests or sub-contractors appropriate to the hazards they will encounter.
  - UTRs will always oversee sub-contractors and require training sufficient to assure safe operations and compliance with SLAC ES&H Policy. (See Chapter 42 – Subcontractor Construction Safety)

3.7.2 Employees and Guests

- Thoroughly understand and competently perform the five ISEMS Core Functions as steps to sustained safe work performance.
  1. Define Work Scope
  2. Analyze and Identify Hazards
  3. Develop and Implement Controls
  4. Perform Work Within Controls
  5. Feedback and Continuous Improvement

[10] http://www-group.slac.stanford.edu/esh/about_esh/eshvalues.htm

No amount of safety documentation, work authorization, PPE, or controls can ever assure individual safety without each individual being personally responsible for safety. Individuals must always keep the five-step ISM Core Function approach to working safely foremost in their minds as they conduct daily work at SLAC.

- Be knowledgeable of the Lab "Stop Unsafe Activity Policy" (See Chapter 2 – Work Authorization)
- Complete basic Employee Orientation to ES&H (EOESH) and Electrical Safety (see Chapter 24 – Training). Additionally:
  - Employees, in consultation with their supervisors, must complete a Job Hazards Analysis and Mitigation form (JHAM) and conduct a SLAC Training Analysis (STA) within 30 days of employment and fulfill all training requirements identified in their SLAC Training Analysis. (See Chapter 24 – Training.) They must also demonstrate an understanding of the requirements of the ES&H Manual chapters applicable to the work they will perform.
  - Subcontractors must complete contractor-specific safety orientation and training (if required) before they perform any work.
  - Users must complete the facility-specific safety orientation and training before beginning the "hands-on" portion of their experiment.
- Proceed with work only after line management has authorized work. Work only within controls specified by the JHAM or other work authorizations.

3.7.3 ES&H Coordinators

- Directorate
  - Reports directly to the Program Director, serves as the primary point of contact within Directorate for all matters concerning the implementation of ISEMS and the Lab's ES&H policies.
  - Administers Directorate ISEMS program
  - Helps maintain documentation required by the Directorate-specific ISEMS Plan and the SLAC Self-Assessment Programs.
  - Ensures proposed ES&H Policy is reviewed by key staff members within directorate and comments are provided to the Policy's author
  - Supports line management in identification, analysis, and control of hazards and stays informed of changes within the Directorate.
  - Administers Building Manager Program within the Directorate in the role of Building Manager Coordinator, serving as an advocate and resource for the Directorate's numerous building managers and advising the Program Director on new building manager appointments and related matters.

- Schedules Directorate self-assessments, constitutes peer review teams, and tracks deficiencies until closed out.
- Participates in external reviews.
- With the Program Director, helps define roles of department ES&H Coordinators
- Meets periodically with the ES&H Division Director.

- Department
  - Reporting directly to their Department head, serve as the primary point of contact within their Department for all matters concerning the implementation of ISEMS and the Lab's ES&H policies.
  - Administer their Directorate ISEMS program as described in the Directorate's ISEMS Plan.
  - Help maintain documentation required by the Directorate-specific ISEMS Plan and the SLAC Self-Assessment and Assurance Programs.
  - Ensure proposed ES&H Policy is reviewed by key staff members within their department and comments are provided to the Policy's author.
  - Support line management in identification, analysis, and control of hazards and stay informed of changes within their department.
  - Schedule Department head self-assessments, constitute peer review teams, and track deficiencies until closed out.
  - Participate in external reviews.
  - Meet periodically with the Directorate ES&H Coordinator and provide quarterly safety reports and other information as requested.

3.7.4 Building Managers

Building Managers[11] are an essential part of the Environment, Safety, and Health (ES&H) Program at SLAC. They are responsible for the ES&H and facility management activities for SLAC's conventional facilities. These facilities include office and laboratory buildings, structures that house technical operations and hazardous materials and equipment, modular buildings, trailers, and simple sheds.

While line managers are responsible for programmatic equipment and all work activities, building managers are responsible for ES&H and facility management activities related to the

[11] http://www.slac.stanford.edu/cgi-wrap/pep2qry?cmd=bldgmgrs

conventional facilities. The Building Manager Program[12] is directed toward the following functional areas that promote overall operation of the buildings:

- Conducting and facilitating inspections
- Emergency Preparedness
- Facility Management

3.8 Balanced Priorities – Describing how we ensure adequate resources are available for ES&H considerations.

3.8.1 Financial Resources

- ES&H considerations are an integral part of planning infrastructure improvement. The annual SLAC Infrastructure Review Committee (IRC) process issues a call for proposals each summer. Project Managers develop proposals with input from ES&H subject matter experts, end-users, Purchasing, and the Budget Office.
- Proposals are reviewed and initially prioritized by the Infrastructure Prioritization Working Group (IPWG). The group uses the DOE's Capital Asset Management Process (CAMP – DOE 4320.2) to rate projects. CAMP's major category rating criteria are 1) Health & Safety, 2) Environment, 3) Safeguards & Security, and 4) Programmatic. Impact and likelihood of risk is considered for each project in each category. Results are summarized and presented to the IRC for review and adjustment as appropriate.
- The IPWG and IRC review and prioritize projects as needed during the year in addition to the main yearly summer prioritization session. The IPWG chair and IRC coordinator are staffed by an Engineering and Technical Support (ETS) budget and financial planner.
- In addition, Directorate Building Managers may petition their Program Directors for funds (usually < $5K) to assist Directorate building managers with essential safety-related projects which are not fully funded.

[12] https://www-internal.slac.stanford.edu/sem/Lighting/sebDefault.htm

3.8.2 Personal Protective Equipment (PPE)

Line managers provide the requisite PPE to their employees (as called out in their JHAMs) before they are asked to perform any task calling for this equipment. PPE is obtained either from SLAC Stores or from outside vendors and replaced as needed.

3.8.3 ES&H Division, Citizen Committees, and Safety Officers

The mission statement of the ES&H Division points out some of the core strengths and ways in which this organization serves the whole lab:

- Interpret the requirements imposed by the Work Smart Standards (WSS) Set and propose, where applicable, policies and standards for implementing those requirements at SLAC.
- Provide technical assistance to line organizations, to enable them to identify and control the hazards associated with their work processes and to fulfill their ES&H responsibilities.
- Promote an understanding of ES&H policies and practices by developing and disseminating guidance documents and by facilitating ES&H training and education of SLAC staff.
- Provide those services that are performed most effectively by a central organization (such as waste management, radiation dosimetry, occupational health management, fire services, radiation shielding, and protection system design).
- Monitor the site for compliance with the WSS Set by conducting inspections and internal audits, coordinating self assessments, and tracking corrective actions and performance indicators.
- Conduct research in areas of environmental science and safety science related to SLAC activities.
- Develop partnerships with the Department of Energy to improve ES&H performance.
- Represent SLAC in dealings with the Department of Energy and other regulators during oversight activities.

Guidance from ES&H Division SMEs, Citizen Committees, and Safety Officers, is available to line managers and all others at SLAC at no cost. This encourages an atmosphere of partnership and integrates safety and environmental awareness in the early stages of planning a project since the requisite expertise is readily available.

3.8.4 ES&H Training

As referenced in 3.8.3, an extensive ES&H training program has been developed and is provided in-house by the ES&H Division, through both lecture and Computer-Based (CBT) courses. These courses are available at no cost except when they are provided by an outside vendor.

This easy availability of both regulatory-driven and supervisor-required training enables SLAC line managers to maintain a high level of knowledge in their staff and ensure that every individual receives the initial information and any refresher training needed to perform their job safely. Because supervisors do not have to send individuals off-site for this training, they are able to manage their time and budget more effectively, thus contributing to the success of SLAC's programs.

3.8.5 Medical and Fire Protection

An on-site medical department with trained occupational health professionals, including a Medical Doctor, provides a major support to our line managers and their staff. As in the case of training, immediate availability of medical advice and treatment facilitates a stronger environment of health for the individual and enables supervisors to participate in the process more consistently and efficiently. Both the convenience of an on-site clinic and the fact that the service is provided at no cost helps ensure that our line managers seek any guidance needed to ensure a safe and healthy work site.

Additionally, SLAC also benefits from the services of an on-site branch of the Palo Alto Fire Department, who provides timely response to emergencies such as fire or hazardous material spills and works in partnership with the Medical Department in the case of injuries or illness.

3.8.6 ES&H Coordinators as Resources

The Engineering and Technical Support Directorate has developed a robust safety support system for its line managers via the Directorate and Department ES&H Coordinators, whose roles and responsibilities are described above (Section 3.7.3).

The Director of Engineering and Technical Support has a full-time Directorate ES&H Coordinator who serves as a liaison between him and the department managers and their ES&H coordinators in environmental, safety and health matters. The Directorate ES&H Coordinator represents Engineering and Technical Support on numerous environmental, safety and health committees and oftentimes receives special assignments to lead work groups with targeted assignments.

Each of the seven (7) departments in the Engineering and Technical Support Directorate has its own ES&H coordinator; all have skills which are specially suited to their work environment and enable them to better support their line managers, e.g., hoisting and rigging knowledge, training in DOE accident investigation, or specialized training as Electrical Equipment Inspectors. These department-level coordinators provide a strong communication network which enables the Directorate ES&H Coordinator to disseminate timely information and call for input in an efficient and effective manner.