

**Memorandum**

October 12, 2007

**To:** Bruce Chrisman  
**From:** William Griffing *W. Griffing*  
**Subject:** Revised FESHM Chapter 1030 – Environment, Safety, and Health (ES&H)  
Organization and Responsibilities

FESHM Chapter 1030 "Environment, Safety, and Health (ES&H) Organization and Responsibilities," has been revised to reflect current organizational ES&H assignments. The responsibilities of the Environmental Protection Officer has been added. The requirement for the supervisor to perform an ITNA on his/her employees on an annual basis has been added.

The chapter was posted for site-side review. Responses have been provided to each comment.

After final approval, please return this approval page to Elizabeth Bancroft at MS119 for posting on the web.

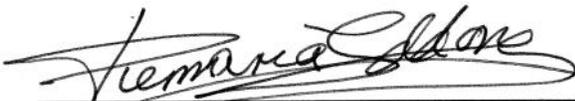
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**Recommended for Approval:**

Bruce Chrisman

10/19/07

Date

**Approved:**

Piermaria Oddone

10/19/07

Date

## ENVIRONMENT, SAFETY, AND HEALTH (ES&H) ORGANIZATION AND RESPONSIBILITIES

### INTRODUCTION

This chapter is the Fermilab policy on environment, safety and health responsibilities. The Laboratory Director is ultimately responsible for safety, but each person at Fermilab is responsible for controlling recognized hazards encountered during the performance of their activities. The necessary level of control is established by a combination of common sense and formal training. This combination allows each person to recognize hazards and unsafe situations, and provides the means to control hazards and conditions in a manner intended to maintain continual safety.

It is Fermilab policy that each employee is accountable to a supervisor who is a member of the line management. Each member of line management is accountable to the next higher level of management in their respective division/section. Ultimately, the Head of each division/section is accountable to the Director.

This policy statement includes guidance on:

- A. The ES&H responsibilities of individuals.
- B. The tenant/landlord relationship.
- C. The method for determining the ES&H responsibility for products.
- D. The method for reassigning ES&H responsibilities.

In situations where the responsibilities of individuals or organizations are unclear or ambiguous, the Director or his designee will assign the responsibilities.

### ES&H RESPONSIBILITIES OF INDIVIDUALS

1. Each Laboratory employee and experimenter shall:
  - a. Conduct activities safely and in an environmentally sound manner.

- b. Notify his/her supervisor if he/she feels unqualified or insufficiently trained to do the task at hand.
- c. Be aware that telephone extension 3131 is to be used for emergency assistance.
- d. Raise concerns, suggestions, and ES&H issues to management, Senior Safety Officer (SSO), ES&H Section, or DOE without fear of reprisal.
- e. Participate in activities described in this section on official time.
- f. Immediately stop any activities that pose an imminent danger to personnel or the environment, and report them to supervision.
- g. Stop activities or conditions of others that pose imminent danger to personnel or the environment and report them to supervision.
- h. Be aware that persistent unsafe activities or safety violations are to be reported to supervision.
- i. Be aware of calibration dates on any ES&H instrumentation and refrain from the use of instrumentation for which the calibration has expired.
- j. Be held accountable to supervision for willful disregard of ES&H procedures.
- k. Report occupationally incurred injuries and illnesses to the Fermilab Medical Department at the first opportunity.
- l. Participate in incident investigations are requested by supervision.
- m. Have access to Fermilab ES&H program documents and Work Smart Set of Standards, DOE S&H publications, the OSHA 300 log, and investigation reports for incidents in which they were involved.
- n. Be trained to safely perform potentially hazardous tasks and to recognize the associated hazards. Develop an awareness of these hazards, and protect others in the area. Bring to the attention of supervision conditions that may develop into unsafe situations.
- o. Refer contacts from representatives of an outside agency to the ES&H Section.

2. The responsibilities assumed by individuals sponsoring special events such as cultural shows and employee morale parties are given on the Facilities Request Form, a copy of which is available from the Directorate or the Accommodations Office.
3. Building Managers have specific responsibilities, a number of which are related to the Environment, Safety and Health program. The specific responsibilities associated with building managers are set forth in FESHM 2050.
4. Supervisors shall:
  - a. Ensure that individuals under their supervision are trained or otherwise qualified to do their assigned activity safely.
  - b. Ensure that individuals under their supervision are trained to recognize hazards they are reasonably expected to encounter in the performance of their duties. This is accomplished by completing an Individual Training Needs Assessment (ITNA) for each employee. An ITNA shall be performed when employee is first assigned to a supervisor or when job assignments change. It shall also be reviewed and revised annually. This can be performed as part of the employees' performance evaluation. See FESHM 4010 for more information.
  - c. Monitor activities for safe operation and take action to enforce safety rules.
  - d. Stop work processes involving imminent hazards to personnel or the environment when discovered and notify upper management.
  - e. Describe the job activities of individuals under their supervision to the Medical Office. This is done by completing a Work Activity Analysis Form (WAAF), which can be found at <http://www-esh.fnal.gov/pls/default/WAAF.html>. The supervisor shall assure that the employee follows the job restrictions provided by the Medical Office.
  - f. Encourage reporting of ES&H concerns and take prompt action to address those concerns.
  - g. Ensure that employees report occupational injuries and illnesses to the Fermilab Medical Department at the earliest opportunity.
  - h. Investigate all accidents and take actions to prevent recurrence.

5. The spokesperson for each experiment is accountable to the host division/section head for the safe operation of the experiment. Details of this accountability are spelled out in the Fermilab Procedures for Experimenters. Highlights of these requirements are as follows:
  - a. Ensure individuals associated with each experiment receive ES&H training specified by Fermilab.
  - b. Monitor experimental activities for performance in accordance with ES&H requirements.
  - c. Request resources from the host division/section head to maintain a safe work environment which is in compliance with Fermilab ES&H standards.
  
6. Each division/section head is accountable to the Director for carrying out their ES&H responsibilities and shall:
  - a. Implement the requirements of this manual.
  - b. Establish and maintain ES&H programs to deal with applicable aspects of environmental protection, industrial safety, industrial hygiene, radiation safety, emergency preparedness, fire protection, waste management and transportation of hazardous materials.
  - c. Advise the Directorate on implementation of Laboratory ES&H policies.
  - d. Establish a self-assessment program in accordance with FESHM 1040.1.
  - e. Establish internal procedures for assuring the safety of division/section activities.
  - f. Establish committees that consider ES&H problems and recommend solutions to the line management.
  - g. Ensure full compliance with Fermilab ES&H policies and procedures and the Laboratory's Work Smart standards unless a variance or exception is obtained (FESHM 1010).
  - g. Maintain, repair and calibrate division/section owned instrumentation and equipment.
  - h. Ensure that the division/section ES&H programs contain provisions for:

- (1) Identification and correction of potential safety and environmental hazards.
  - (2) Procedures for correction of hazards found on inspection or from lessons learned from the investigation of incidents or accidents, and for following up on those corrections.
  - (3) Identification of plans to deal with emergencies.
  - (4) ES&H review and hazard analysis of new & existing operations.
  - (5) Training of personnel in ES&H procedures.
- i. Ensure that personnel within the division/section shall:
- (1) Assign sufficient resources to assure the implementation and maintenance of ES&H programs.
  - (2) Comply with the provisions of the Fermilab Self-Assessment Program (FESHM 1040.1).
  - (3) Provide sufficient resources to carry out landlord/tenant responsibilities.
  - (4) Ensure all operational procedures are consistent with Fermilab ES&H policies.
  - (5) Ensure dissemination of ES&H directives and information to all personnel.
- j. For experiments for which it is the "host" division, assure that each user group carries out experiments in compliance with Procedures for Experimenters (PFX)

7. The Division/Section Senior Safety Officer (SSO) shall:

- a. Have the authority to stop activities that pose an imminent danger to employees, the public, or the environment, in accordance with the technical appendix to this chapter.
- b. Advise the division/section head on restarting an activity that has been stopped.
- c. On items of imminent danger take immediate corrective action then, report directly to the division/section head and the ES&H Director.
- d. Advise the division/section management on ES&H matters.

8. The Division/Section Environmental Protection Officer (EPO) shall:

- a. Represent their assigned Division/Section on the Environmental Protection Subcommittee.
- b. Assist D/S personnel in determining significant aspects for projects originating from within the D/S.
- c. Disseminate information regarding the Environmental Management System to their organization.
- d. Participate as Chairman for specific Environmental Management Program *ad hoc* panels.
- e. Collect relevant information from their organization for consideration by the Subcommittee or panels.

8. The ES&H Director has the following responsibilities:

- a. Represents the Director in all matters of environment, safety and health, serving as the Senior ES&H Officer for the Laboratory.
- b. Has the authority to stop activities that pose an imminent danger to employees, the public, or the environment, in accordance with the technical appendix to this chapter.
- c. Reports directly to the Director on items of imminent environment, safety, or health danger, and any serious violation of the Laboratory ES&H programs.
- d. Advises members of the Directorate, division/section heads and division/section safety officers on ES&H matters.
- e. Is primary consultant for division/section heads regarding recruiting, interviewing, and appointing SSOs
- f. Develops ES&H programs together with line organizations to comply with the Laboratory's Work Smart set of standards and to otherwise promote responsible ES&H practices.
- g. Serves as Emergency Coordinator for all incidents involving activation of the Emergency Operations Center.
- h. Develops, budgets, and administers the Fermilab ES&H Award Program. Specifically:

(1) ES&H awards may recognize individual or group achievement.

- (2) The plan should include flexibility to accommodate recognition of deserving unique events and rare milestones.
  - (3) It is expected that specific ES&H awards will change periodically, particularly initially, to determine what works best to motivate Fermilab personnel to prevent accidents and avoid injury.
  - (4) Expenditures for ES&H awards will have full backup documentation and be subject to audit. The Business Services Section will be consulted concerning documentation and audit readiness.
- i. Is assigned specific line responsibilities which are set forth in the technical appendix to this chapter.
  - j. Is the head of the ES&H Section, and as such, requests from the Director sufficient resources such that the ES&H Section is able to:
    - (1) Perform ES&H audits in accordance with the ES&H Assurance Program.
    - (2) Provide assistance to division/section personnel, upon request, for support of special surveys and measurements.
    - (3) Perform specific line responsibilities that are included in the technical appendix to this chapter.

9. The Director shall:

- a. Be ultimately responsible for establishing a workplace that reflect an integrated approach to environment, safety, and health which is in compliance with applicable federal/state laws and regulations, and the Work Smart Standards contained in the Fermilab Research Alliance, LLC (FRA) contract with DOE.
- b. Approve Laboratory ES&H policies. Review and, if appropriate, approve of exceptions to Fermilab ES&H policies.
- c. Be the final arbiter for interpreting policies set forth in this chapter.
- d. Appoint the Laboratory Safety Committee (LSC) whose charge and membership are included in a technical appendix to this chapter. This committee shall:
  - (1) Be led by the Chief Operating Officer.
  - (2) Advise the Director regarding all elements of the Laboratory ES&H program.
  - (3) Meet on a monthly basis.

- (4) Make itself available for consultation regarding all ES&H policies, procedures, and standards and regulations.
  - (5) Operate, in part, through a number of subcommittees whose charges and memberships are included in a technical appendix to this chapter.
- e. At his discretion, appoint members of the Directorate who shall:
- (1) Assign responsibilities for activities to divisions/sections.
  - (2) Assign landlord responsibilities for all spaces to divisions/sections.
  - (3) Formally designate landlords and tenants.
  - (4) Review Laboratory ES&H policies periodically.
  - (5) Provide sufficient resources to assure the maintenance of appropriate ES&H programs.
  - (6) Support ES&H self-assessment activities.
- f. Review and approve variance requests before submitting them to the appropriate regulatory authority.

## LANDLORD/TENANT RELATIONSHIP

This section defines the landlord/tenant relationship.

1. The Director, or designee, shall assign each space at Fermilab to a designated division/section as landlord. The landlord is responsible for:
  - a. The maintenance and safe operation of the space.
  - b. Appointing a building manager or managers for each assigned space. Building managers shall have the responsibility for:
    - (1) Inspecting their areas.
    - (2) Requesting resources to bring their areas into compliance and to maintain compliance with Fermilab ES&H standards.
    - (3) Ensuring that hazards associated with their areas are posted.
  - c. Arranging documented periodic ES&H inspections of the space in accordance with the division/section Self-Assessment Plan and correcting deficiencies found on those inspections or inspections performed by other agencies. Deficiencies that cannot be immediately corrected shall have interim abatement action taken. Corrective actions shall be tracked through ESHTRK.

- d. Assuring access to assigned areas by emergency personnel.
2. If personnel from a division/section are assigned to a building or area where another division/section is designated as landlord, the Directorate may formally designate the second division/section as tenant. The tenant shall:
    - a. Comply with ES&H policies of the landlord division/section or have a signed memorandum of understanding with the landlord division/section agreeing to reassign to the tenant the ES&H responsibilities for the space.
    - b. Appoint a building or area liaison, preferably resident in the building, to act as building contact person with the landlord's building manager.
    - c. Cooperate with the building ES&H inspections and correct any problems found which are caused by the tenant's personnel or equipment.
    - d. Identify unusual technical equipment to the landlord so that potential ES&H problems can be addressed.
  3. The Director or designee shall review all landlord/tenant assignments at least annually.
  4. Users and visitors residing in on-site housing are tenants. These tenants are subject to all applicable Laboratory regulations and policies. The Housing Office is designated as the landlord.
  5. Fermilab employees working off-site are required to comply with the ES&H policies of the organization responsible for managing the work site. See FESHM 1011 for additional guidance regarding travel to host laboratories within the continental United States and foreign countries.

## **ES&H RESPONSIBILITY FOR PRODUCTS**

This section defines the method for determining the ES&H responsibility for products. In this context, the term "product" is to be taken in a very broad sense and is meant to include equipment, services and software.

1. The division or section accepting the product into its area for installation or use is responsible for:

- a. Determining the specifications to be met by the product consistent with Laboratory ES&H policies and standards.
  - b. Reviewing compliance with manufacturer's standards and product use information.
  - c. Assuring that the product is operated within the safe operating limits.
  - d. Providing a decommissioning plan, for the product, where appropriate. This plan shall comply with ES&H standards.
2. The organization (division, section, experiment, user, subcontractor, vendor) or individual producing the product is responsible for:
- a. Assuring that the product is designed and built to meet the stated applicable ES&H standards.
  - b. Assisting in start-up activities and initial performance testing and operational training.
  - c. Providing documentation in support of item (a).
  - d. Vendor and subcontractor responsibilities are delineated in Fermilab's standard terms and conditions.
3. The division/section which is shipping, receiving or storing equipment is responsible for specifying ES&H requirements insofar as necessary to ship, receive and store the equipment in compliance with Laboratory ES&H policies. It is the responsibility of the division/section that requests the equipment to provide the resources to meet the requirements.

### **SCIENTIFIC DEMONSTRATIONS/SHOWS BY EMPLOYEES**

Scientific demonstrations /shows under the auspices of any division or section require an evaluation by a safety professional from the ES&H Section. This evaluation is only necessary in those cases where Fermilab equipment is used, a Fermilab employee participates in the show in his official capacity or the show or demonstration is within the confines of Fermilab property. In these cases, the demonstration or show can proceed only after the activities are reviewed by the ES&H Section and a review letter issued. The review letter will remain in effect as long as there are no changes in the specifications, methodology, equipment and manner in which the demonstration is conducted.

This requirement does not apply to demonstrations or shows where an employee uses equipment other than Fermilab owned and the employee acts in his capacity as a private citizen and outside the confines of Fermilab property.

## **NON-ENGLISH SPEAKING INDIVIDUALS**

Supervisors and experiment spokespersons are responsible for assuring that all of the people for whom they are responsible comprehend the ES&H hazards to which they are exposed and the protective measures available. Familiarization with ES&H hazards may assume a wide variety of forms. These include, but are not limited to, standardized training or informal explanations through a translator, oral or written instructions, or demonstrations of procedures. Since each case involving a foreign-speaking employee, user, or sub-contractor is in some way unique, a highly prescriptive method for approaching this responsibility would not be useful and no attempt is made to develop one here.

## TECHNICAL APPENDIX TO ES&H ORGANIZATION AND RESPONSIBILITIES

### PROCEDURE FOR STOPPING AND RESTARTING ACTIVITIES

1. Any person who discovers an activity that they believe poses an imminent danger to the safety and health of individuals or to the quality of the environment shall immediately request termination of that activity. This shall be accomplished verbally with the individuals engaged in the activity or through the managers of the activity.
2. Individuals who have been asked to terminate an activity because it appears to pose an imminent danger shall immediately comply with the request. The activity may resume after the hazard has been abated.
3. Disagreements shall be rapidly escalated up through management chains.
4. In the case of subcontract work, the Fermilab employee responsible for managing the contract shall be notified as soon as possible following termination of the activity. Where formal notification is required to terminate subcontract work, use the SUBCONTRACTOR ES&H STOP WORK ORDER included in the technical appendix to FESHM 7010 ([http://www-esh.fnal.gov/FESHM/7000/7010TA\\_Form5.pdf](http://www-esh.fnal.gov/FESHM/7000/7010TA_Form5.pdf)). The activity may resume after the hazard has been abated.
5. Requests to stop an imminent danger activity by any safety or environmental professional from the ESH Section shall be obeyed immediately regardless of disagreements. Discussions to resolve disagreements or differences of opinion can occur only after the activity is stopped and people are removed from the hazard.
6. The Director of ES&H is available to counsel participants and to facilitate implementation of these procedures.

### SPECIFIC LINE RESPONSIBILITIES OF THE ES&H DIRECTOR

The specific responsibilities assigned are:

1. Function as the editor and distributor of the Fermilab ES&H Manual ([FESHM 1050](#)).

2. Appoint, with the concurrence of the Laboratory Director, senior personnel as designees to represent the officer in all matters concerning ES&H at times when he is unavailable.
3. Use the Fermilab ES&H Assurance Program to determine the degree of compliance by divisions/sections with their own ES&H programs and with the Laboratory ES&H program.
4. Review all requests from division/section heads to operate in a fashion that is not in compliance with established Fermilab safety procedures or policies and make recommendations to the Laboratory Director.
5. Maintain liaison with the DOE on Laboratory ES&H.
6. Maintain appropriate ES&H records as required by regulations.
7. Keep abreast of proposals and changes in ES&H regulations that may affect Laboratory operations.
8. Study the ES&H aspects of all Laboratory activities and consider suggestions for improving performance.

### **SPECIFIC LINE RESPONSIBILITIES OF THE ES&H SECTION**

The ES&H Section shall carry out these specific line responsibilities:

1. Procurement, distribution, maintenance and calibration of radiation monitoring equipment.
2. Procurement, distribution, maintenance and calibration of industrial hygiene monitoring equipment stored within the ESH Section.
3. Maintenance, repair and calibration of personal oxygen monitors.
4. Maintenance of the personnel dosimetry program.
5. Procurement and maintenance of radioactive sources for loan to Fermilab personnel and to visiting experimenters.
6. Supervision of shipments of radioactive material coming to or from the Fermilab site.

7. Storage and disposal of radioactive waste.
8. Maintenance of active programs for the development and refinement of radiation detectors, equipment dosimetry systems, measurements of shielding characteristics, etc., and for the development of methods of calculating shielding, radioactivation and radiation doses.
9. Coordination and interactions with external governmental agencies regarding ES&H compliance.
10. Storage of hazardous wastes held longer than 90 days and disposal of all hazardous wastes and regulated chemical (State of Illinois) special wastes.
11. Environmental monitoring and preparation of the annual Environmental Report to the Director.
12. Industrial hygiene sampling, upon request or oversight of industrial hygiene sampling by other ES&H professionals.
13. Management of all asbestos removal projects at the Laboratory.
14. Administration of the prescription safety eyewear and safety toe protective footwear program.
15. Maintenance of an inventory of safety signs.
16. Maintenance of appropriate safety records as required by applicable regulations and as assigned by the Directorate.
17. Provision of ES&H assistance to division/sections as requested.
18. Maintain central emergency planning and response organizations that include the Fire Department, Security Department, and Communications Center; with input from other personnel within the ES&H Section as appropriate.
19. Provision of Lab-wide ES&H training, maintenance of appropriate database, and related consultative services.
20. Administration of the respiratory protection program.
21. Administration of Fermilab's Occupational Medicine and Workers' Compensation program.
22. Administration of Environmental Permits.

## CHARTERS

### LABORATORY SAFETY COMMITTEE (LSC)

The Laboratory Safety Committee has the responsibility for reviewing safety policies and programs and for reporting its findings and recommendations to the Laboratory Director.

In carrying out this responsibility, the Laboratory Safety Committee coordinates the activities of its subcommittees, reviews ES&H policies of general Laboratory-wide significance, and reviews the ES&H aspects of Laboratory activities that may be of concern to the public.

The Laboratory Safety Committee responds to requests from, and suggests topics for review to, the Laboratory Director, the Laboratory ES&H Section Head, division/section heads, and members of the committee.

The Chief Operating Officer chairs the LSC. He/She appoints members of the committee, normally for a 3-year term. Membership shall include 1) as ex-officio members-the Senior Laboratory Safety Officer, and the Laboratory Fire Chief, 2) the chairperson of each subcommittee, and 3) a representative of each division/section.

### CRYOGENIC SAFETY SUBCOMMITTEE

The Cryogenic Safety Subcommittee is responsible for recommending controls for purchase, handling, storage, and use of flammable and non-flammable fluids whose normal boiling point is below  $-150\text{ C}$  ( $123\text{ K}$ ).

The Cryogenic Safety Subcommittee is responsible for reviewing design guides and operating rules for engineering systems operated at cryogenic temperatures (below  $-150\text{ C}$ ).

The Cryogenic Safety Subcommittee is responsible for performing cryogenic safety reviews of major systems and facilities. Special effort is made to determine all hazards at the earliest stages of design and fabrication in order that corrective action may be taken in an economical fashion.

The Cryogenic Safety Subcommittee responds to requests from, and suggests topics for review to, the Laboratory Director, the Chair of the Laboratory Safety Committee, the head of the Laboratory ES&H Section, and division/section heads.

The LSC Chair will appoint subcommittee members, normally for a three-year term.

The Chair of the LSC will appoint a Deputy Subcommittee Chair, normally a member of the subcommittee, for at least 2 years. The Deputy Subcommittee Chair will normally serve two years and will represent the Subcommittee chair at meetings of the subcommittee and the LSC when the Chair is not available.

The Chair of the LSC will appoint a Subcommittee Chair, normally the Deputy Subcommittee Chair, for a two-year term.

## **ELECTRICAL SAFETY SUBCOMMITTEE**

The Electrical Safety Subcommittee (ESS), a standing subcommittee of the Laboratory Safety Committee (LSC), is responsible for the overall specification and content of the Fermilab Electrical Safety Program. In this role, the ESS recommends guidelines and general procedures for the operation and maintenance of electrical systems that include the AC Power Distribution System and utilization equipment. These guidelines are intended to ensure the protection of personnel and property from the hazards inherent in the improper or careless use of electricity. The Program, guidelines and procedures are primarily realized by selected FESHM Chapters, for which the ESS has the responsibility of authorship. The Subcommittee is also charged to lead the development of electrical safety training and to provide necessary assistance to implement the training program.

As related to the National Electrical Code (NEC), the Fermilab Electrical Safety Subcommittee is the Authority Having Jurisdiction (AHJ) at the Laboratory. The AHJ is responsible for interpreting Code rules and should attempt to resolve all disagreements on application of the Code. The authority of AHJ may be delegated to competent individuals or groups with the full knowledge of the Subcommittee. The AHJ in its decisions is subject to the oversight of the Fermilab Chief Operating Officer. Particular issues that the AHJ is not able to resolve, or disagreements with decisions of the AHJ, may be brought to the attention of the Chief Operating Officer by the Subcommittee for final resolution.

The ESS will review activities and recommend action for items that have a significant effect on electrical safety. Subcommittee responsibilities include, but are not limited to:

- Advising Laboratory management of the requirements and training needed to implement the Fermilab Electrical Safety Program
- Advising Laboratory management of the need to fund and support the requirements and training needed to implement the Fermilab Electrical Safety Program

- Assisting the Divisions and Sections in the interpretation of electrical requirements of DOE orders, criteria and guides and other codes, standards and practices
- Coordinating with the ES&H Section, as necessary, for the publishing of information regarding electrical safety
- Updating and reviewing changes to the FESHM Electrical Safety Chapters 5040 thru 5048
- Updating and reviewing changes to the Fermilab Energy Control Program, FESHM Chapter 5120
- Providing advice on reducing risk of electrical hazards and the development of safe operating procedures relevant to electrical safety
- Reviewing operations for electrical safety, as requested
- Making recommendations concerning test and lockout procedures for electrical equipment and/or system operation and maintenance as requested
- Participation in accident investigations and the generation of Occurrence Reports when there is an underlying electrical safety issue
- Reviewing all external Occurrence Reports involving electrical safety issues
- Reviewing and or offering advice on wiring methods and devices, protection devices and protection circuitry (including grounding, electro-magnetic fields and special occupancies)
- Participating in the resolution of electrical safety questions.

The Electrical Safety Subcommittee will respond to requests from the Chair of the Laboratory Safety Committee and Division/Section Heads. The Chair of the Electrical Safety Subcommittee has the autonomy to consider items for review, call for meetings and enlist other subject matter experts to deal with specific topics requiring a particular area of expertise.

The Subcommittee shall be composed of no more than eleven (11) Laboratory employees with voice and vote, who have knowledge in one or more of the following areas:

- Electrical Codes
- Electrical Safety
- Electrical Standards
- OSHA Electrical Requirements
- Electrical Practices and Methods used in industry
- Electrical specialties (grounding, high voltage, high frequency, electronics, etc)
- R&D applications, which include the fabrication, construction and use of unique or novel laboratory devices, instruments, machines and facilities.

While considering the advice of the Subcommittee, the LSC Chair:

- Will appoint the Chair of the Subcommittee, normally for a two year term

- Will appoint Subcommittee members, normally for a three year term
- May appoint selected knowledgeable individuals to indefinite terms on the Subcommittee
- May appoint, in addition to the regular membership, Subcommittee Associate members, normally for a one year term
- May remove a Subcommittee member who has not actively contributed to the work of the Subcommittee.

While considering the advice of the Subcommittee, the ESS Chair:

- Will appoint the Deputy Chair of the Subcommittee, normally for a one year term
- Will appoint a Recording Secretary, normally for a one year term
- May seat and charge one or more *Ad Hoc* Committees to address site-wide or other particular electrical issues
- Will appoint *Ad Hoc* Committee Chairs. These Chairs need not necessarily be ESS members.

All appointments have the potential of being extended beyond the initial term of appointment.

The Deputy Chair will represent the Chair at meetings of the Subcommittee and the LSC when the Chair is not available. The Recording Secretary shall keep minutes of meetings and records of other Subcommittee activities, including on-site inspections.

*Ad Hoc* Committees may be comprised of non-ESS members, but at least one shall be an ESS member. All *Ad Hoc* Committee reports and recommendations shall be approved by a majority of the ESS members.

The frequency of ESS meetings will be no less than four per calendar year. On the basis of the issues to be discussed and the technical expertise of those members present, the Chair will decide if the attending members constitute a working quorum. The meetings will be open to the Laboratory at large unless the Chair designates an executive session. Subcommittee members are encouraged to invite interested parties as appropriate. The DOE Fermi Site Office will be advised of meeting times and invited to send a representative. The Recording Secretary shall distribute the approved minutes each meeting to the LSC Chair, Division/Section Heads, Senior Safety Officers, Division/Section Electrical Coordinators and Subcommittee members.

To view the Committee/Subcommittee Membership please go to:  
<http://www-esh.fnal.gov/pls/default/committees.html>

## EMERGENCY PREPAREDNESS SUBCOMMITTEE

The Emergency Preparedness Subcommittee is charged with the following responsibilities:

1. Provide assistance to the LSC in the development of emergency preparedness policies and procedures.
2. Review and comment on proposals or additions and changes to the policies and procedures of the Fermilab Emergency Preparedness Plan.
3. Support the planning and execution of emergency response drills and exercises.

The LSC Chair will appoint subcommittee members for an indefinite term.

## ENVIRONMENTAL PROTECTION SUBCOMMITTEE

The Environmental Protection Subcommittee (EPS) is responsible for coordinating the implementation of Fermilab's Environmental Management System. It is charged with meeting regularly, typically monthly, to discuss environmental protection issues and to develop solutions that will ensure compliance and establish sound environmental management practices throughout the Lab through the Environmental Management Program (EMP) process. The Subcommittee is charged with considering potential proactive environmental protection actions that have implications beyond simple compliance, fulfilling the Director's Policy on the environment. The scope of its review authority extends over all issues of environmental protection. Meeting minutes shall document all interpretative decisions and/or recommendations. Concerns about policy and recommendations concerning policy changes shall be reported by the Subcommittee Chair to the Director in accordance with procedures expressed in the Fermilab ES&H Manual Chapter 1050.

The Environmental Protection Subcommittee responds to requests from, and suggests topics for review to, the Laboratory Director, the Chair of the Laboratory Safety Committee (LSC), the Head of the Laboratory ES&H Section and Division/Section Heads. The EPS may also develop specific Environmental Management Programs that establish objectives and goals relating to identified impacts of Laboratory processes. Each EMP will be dealt with through an *ad hoc* panel. At least one EPS member shall serve, and act as chair, on each *ad hoc* panel. All *ad hoc* committee reports and recommendations are to be approved by a majority of the EPS members.

The Environmental Management Systems Coordinator of the ES&H Section serves an indefinite term as Chair of the Subcommittee. The ES&H Section, Safety & Environmental Protection Associate Head serves an indefinite term as an *ex officio*

member. Division/Section Environmental Officers are charged with the responsibility of disseminating information to their organization, participating as Chairman for specific EMP *ad hoc* panels, and collecting relevant information for consideration by the Subcommittee or panels. Division and Section Heads may appoint representatives as subject matter experts to serve on panels at the request of the EPS or the LSC. Other members consist of technical representatives from the ES&H Section, appointed indefinitely in an *ex officio* status, because of their role in the environmental protection program.

## **ERGONOMICS SUBCOMMITTEE**

The Ergonomics Subcommittee is responsible for providing support and guidance to the Laboratory concerning workplace ergonomics issues. The Ergonomic Subcommittee responsibilities include but are not limited to:

- Addressing ergonomic issues and concerns by responding to requests from employees, supervisors, and/or the Fermilab Medical Office
- Periodically reviewing the OSHA 300 log, worker's compensation claims, and accident/incident reports to identify hazards and suggest improvements to the ergonomics program.
- Assist in the development of training and educational aids to both workers and managers so that there is an understanding of potential risks and their prevention.

The Ergonomics Subcommittee responds to requests from, and suggests items for action to, the Chair of the Laboratory Safety Committee, the head of the ES&H Section, as well as other division/section heads.

Each division and section head shall/ is encouraged to appoint one to two members to serve for a three-year period. The Chairperson of the Ergonomics Subcommittee will serve a two- year term and appoint a Deputy Chairperson. The Deputy Chairperson will take the title of Chairperson after two years, and in turn appoint another Deputy Chairperson. Additional short-term appointments of technical experts are made as necessary.

## **FIRE HAZARD SUBCOMMITTEE**

The Fire Hazard Subcommittee (FHS) is responsible for recommending guidelines relating to life safety, equipment fire safety and compressed gas fire hazard policies at Fermilab. It is also responsible for reviewing the fire hazard aspects of designs and operating procedures for flammable and compressed gas installations operated at temperatures above -90°C (-150°F). This includes systems requiring the use of propane, natural gas, or oxygen.

Members of the Fire Hazard Subcommittee serve as members of review committees for existing or planned experiments and related apparatus. Special effort is made to identify hazards at the earliest stages of design and fabrication in order that corrective actions may be taken in the most economical fashion. They assist in program audits and fire investigations as requested on an *ad hoc* basis.

The Fire Hazard Subcommittee responds to requests from, and suggests topics for review to, the Laboratory Director, the Chair of the Laboratory Safety Committee, the head of the ES&H Section and division/section heads.

The LSC Chair will appoint subcommittee members for an indefinite term.

## **INDUSTRIAL HYGIENE SUBCOMMITTEE**

The Industrial Hygiene Subcommittee is responsible for assisting line management in the implementation of Fermilab's Industrial Hygiene policies, the Industrial Hygiene portions of the Fermilab ES&H Manual, and the Work Smart standards relevant to Industrial Hygiene<sup>[1]</sup>. It is charged with meeting on a regular basis to discuss Industrial Hygiene issues, lessons learned and to develop and recommend solutions that will not only ensure compliance but also establish sound and standardized Industrial Hygiene practices throughout the Lab to insure continuous improvement. The scope of its review authority extends over all issues of Industrial Hygiene and to those assigned by the Laboratory Safety Committee.

At times, situations may occur which will require the formation of *ad hoc* committees to address site-wide Industrial Hygiene issues. At least one IHS member shall serve on each *ad hoc* committee. These *ad hoc* committees may be comprised of IHS members as well as non-IHS members. The IHS Chair will appoint *ad hoc* committee chair(s), which are not required to be members of the IHS. All *ad hoc* committee reports and recommendations are approved by a majority of the IHS committee members.

An agenda and material for review will be distributed in advance of scheduled meetings. The Industrial Hygienist of the ESH Section chairs the meeting and prepares minutes documenting the subcommittee activities. Meeting minutes shall document all interpretative decisions and/or recommendations made, and will be distributed by the IHS chair as follows:

- Subcommittee members
- Senior Safety Officers
- Division/Section Heads
- Chair, Laboratory Safety Committee
- Other employees as necessary

The Industrial Hygienist of the ES&H Section serves as Chair. Each division and section head shall appoint one to two members to serve for an indefinite term. These representatives are charged with the responsibility of disseminating information to their organization and for collecting relevant information for consideration by the subcommittee. Subcommittee members should invite interested parties as appropriate. The DOE Fermi Area Office will be advised of meeting times and invited to send a representative.

The Industrial Hygiene Subcommittee responds to requests from the Chair of the Laboratory Safety Committee and division/section heads and can also suggest topics for review to the Chair of the Laboratory Safety Committee.

[1] *The primary mission of Industrial Hygienists is to protect the health and well-being of working people and the public from chemical, microbiological and physical health hazards present at, or emanating from, the workplace.*

### **INJURY/ILLNESS PREVENTION SUBCOMMITTEE**

The Injury/Illness Prevention Subcommittee is responsible for providing guidance to the Laboratory concerning the prevention of injuries. Activities include reviewing accidents and accident reports for the purpose of ensuring a complete investigation, sharing of information, and identification of any lab-wide lessons learned. The subcommittee will identify trends to the Laboratory Safety Committee, along with recommended corrective actions.

The Injury/Illness Prevention Subcommittee responds to requests from, and suggests items for action to, the Chair of the Laboratory Safety Committee, the head of the ES&H Section, as well as other division/section heads and the Director.

The Chair of the Laboratory Safety Committee normally appoints members of the Injury/Illness Prevention Subcommittee for a three-year period. Additional short-term appointments of technical experts are made as necessary.

The Chair of the LSC will appoint a Subcommittee Chair for a two-year term. The Subcommittee Chair will appoint a Deputy Chair. The Deputy Chair will take the title of Chair after two years, and in turn appoint another Deputy Chair.

### **MECHANICAL SAFETY SUBCOMMITTEE (MSS)**

The Mechanical Safety Subcommittee is an advisory group to the Laboratory Safety Committee (LSC) and is responsible for recommending guidelines for the fabrication, testing, installation, and use of mechanical systems for experimental and laboratory applications. These guidelines are intended to ensure the protection of personnel and

property from the hazards inherent in the improper or careless use of mechanical systems.

The MSS shall review activities and recommend action for items that have a significant effect on mechanical safety. Subcommittee responsibilities include, but are not limited to:

1. Pressure systems including pressure vessels, pressure piping and gas cylinders.
2. Vacuum systems.
3. Cranes, hoists, Below-the-Hook Lifting Fixtures and material handling equipment.
4. Structural supports for experiment or accelerator equipment.
5. Standards and policy statements that concern mechanical safety. This includes but is not limited to FESHM chapters 5021, 5022, 5023, 5031, 5033, 5034, 5035 and 5095.

The Subcommittee responds to requests from, and suggests topics for review to, the Laboratory Director, the Chair of the Laboratory Safety Committee, the head of the Laboratory ES&H Section, division/section heads division/section SSOs and any laboratory employee who has a concern for matters under the committee's scope. The Chair of the Mechanical Safety Subcommittee has the autonomy to consider items for review, call for meetings and to enlist other subject matter experts needed to competently deal with specific topics requiring a particular area of expertise.

The Mechanical Safety Subcommittee shall be composed of no more than eleven (11) Laboratory employees with voice and vote, who have knowledge in one or more of the areas for which the subcommittee is responsible. Members shall be selected from the laboratory at large and will attempt to provide representation of the divisions and sections most involved in mechanical systems. This shall not be construed to require an equal number of members from each division or section.

While entertaining the advice of the Mechanical Safety Subcommittee Chair, the LSC Chair:

- Will appoint the Chair of the Subcommittee, normally for a two year term
- Will appoint Subcommittee members, normally for a 3-year term
- May appoint selected knowledgeable individuals to indefinite terms on the Subcommittee.

While entertaining the advice of the Mechanical Safety Subcommittee members, the MSS Chair:

- Will appoint the Deputy Chair of the Subcommittee, normally for a one-year term.
- Will appoint a Recording Secretary, normally for a one-year term.
- May seat and charge one or more *Ad Hoc* Committees to address specific issues.
- Will appoint *Ad Hoc* Committee Chairs. These Chairs need not necessarily be MSS members.

The Deputy Chair will represent the Chair at meetings of the Subcommittee and at the LSC meeting when the Chair is not available.

The Recording Secretary shall keep minutes of meetings and records of other Subcommittee activities, including on-site inspections.

Members of the Mechanical Safety Subcommittee will be expected to contribute to the work of the committee. Members who fail to attend meetings or otherwise contribute to the work of the committee will be excused from the committee.

*Ad Hoc* Committees may be comprised of at least one MSS member as well as non-MSS members. All *Ad Hoc* Committee reports and recommendations shall be approved by a majority of the MSS members.

MSS meetings will be nominally scheduled for once per month although the frequency will be modified as committee workload changes. The meetings will be open to the Laboratory at large unless the Chair designates an executive session. Subcommittee members are encouraged to invite interested parties as appropriate. The DOE Fermi Area Office will be welcome to send a representative. The Recording Secretary shall post on the appropriate web page the approved minutes each meeting.

## **RADIATION SAFETY SUBCOMMITTEE**

The Radiation Safety Subcommittee is responsible for coordinating the implementation and improvement of the Fermilab radiation safety program. It is charged with meeting regularly to discuss radiation protection issues and develop solutions that will promote compliance and uniform implementation lab-wide in a cost-effective manner. Its scope encompasses all radiological issues concerning both occupational and environmental protection. Meeting minutes shall document decisions made that are of an interpretative nature. This subcommittee includes the responsibilities of the ALARA committee specified in the Fermilab Radiological Control Manual. Policy concerns and proposals for revision of the Fermilab Radiological Control Manual are to be reported, through the Chair, to the Director in accord with procedures expressed in the Fermilab ES&H Manual, Chapter 1050.

The Radiation Safety Subcommittee responds to requests from, and suggests topics for review to, the Laboratory Director, the Chair of the Laboratory Safety Committee, and the head of the ES&H Section, radiation safety officers, and division/section heads.

The Associate Head for Radiation Protection of the ES&H Section serves as Chair. Radiation Safety Officers (RSOs) appointed according to Fermilab Radiological Control Article 131 are ex-officio members. These members serve indefinite terms. Other members consist of technical representatives appointed indefinitely because of their role in the radiation protection program. The Chair of the LSC appoints citizen representatives from the various divisions and sections to three-year terms.

### **SUBCONTRACTOR SAFETY SUBCOMMITTEE**

The Subcontractor Safety Subcommittee (S-3) is an advisory group to the Laboratory Safety Committee (LSC) and is responsible for recommending guidelines for the safety of subcontractors working at Fermilab. This includes construction and service work being done under fixed-price, Time and Material (T&M), blanket order or personal service subcontracts. The guidelines are intended to ensure that hazards inherent within the Fermilab site are communicated to all subcontractors and that hazards associated with the work are identified, analyzed and mitigated to Fermilab's acceptance, with the goal of protecting subcontractor and Fermilab personnel, environment and property. Activities in which the subcommittee is expected to be involved:

- Overview of both construction and service subcontractor safety program;
- Overview of development of orientation material;
- Reviewing changes to the FESHM construction and service subcontractor chapters;
- Participating in the resolution of subcontractor safety issues that cross organizational boundaries;
- Promotion of communication and standardization of implementation of subcontractor safety programs;
- Oversee the process for reviewing incident/accident reports and developing lessons learned;
- Review and discuss reported lessons learned;
- Assure that processes are in place so that lessons learned are shared across the laboratory including oversight personnel, subcontractors, and sub-tier contractors; and
- Provide assistance in the form of subject matter expertise to divisions/sections upon request.

The S-3 responds to requests from the chair of the LSC and division/section heads. The S-3 can also suggest topics for review to the LSC chair. The chair of the S-3 has the

autonomy to consider items for review, call for meetings and enlist other subject matter experts to deal with specific topics.

The S3 shall be comprised of eleven (11) Laboratory employees with voice and vote, who have knowledge in one or more of the areas for which the subcommittee is responsible. Membership shall be based on the needs of the subcommittee to maintain a balance with respect to division/section, safety/non-safety professional, construction/service work experience, and task manager/construction coordinator representation.

The Chairperson, in conjunction with other S3 members, will

- develop a list of candidates when terms expire or vacancies occur, for Directorate approval
- appoint ad-hoc committees as required to address specific issues
- appoint a recording secretary (non-voting), normally for a one-year term

The LSC Chair, while entertaining the advice of the S3 Chair, will:

- appoint the Chair of S3, upon the recommendation of the retiring chair
- appoint subcommittee members, normally for a two-year term, with a term limit of two consecutive terms
- have the ability to appoint knowledgeable individuals to indefinite terms on S3

Ad-hoc Committees may be comprised of at least one S3 member as well as other non-S3 members. All ad-hoc committee reports and recommendations shall be approved by a majority of the S3 members.

The S-3 will meet no less than once each calendar quarter. An agenda and any material for review will be sent out in advance of scheduled meetings. Committee members should invite interested parties as appropriate. The meetings will be open, unless designated by the Chair as an executive session. The DOE Fermi Area Office will be welcome to send a representative.

The recording secretary will prepare minutes of each meeting, including committee recommendations and distribute as follows:

- Subcommittee members
- Senior Safety Officers
- Task Managers
- Division/Section Heads
- Chair, Laboratory Safety Committee
- LSC web page

## TRAFFIC SAFETY SUBCOMMITTEE

**Purpose:** Enhance and improve safety for pedestrians, cyclists and motorists on the Fermilab site.

**Goal:** Reduce the frequency of traffic-related accidents by half, thereby decreasing the potential for personal injury and lowering annual property damage losses.

**Scope:**

- Study the interface where potential problems exist or may occur involving all modes of transportation (motorized vehicles, bicycles, pedestrians, etc.)
- Identify existing hazards and vulnerabilities
- Recommend solutions to the Directorate through the Laboratory Safety Subcommittee (LSC)

**Process:** Utilize all available methods to make reasoned recommendations regarding traffic safety.

**Study/Investigate:** Assess and study problem areas, accidents and trends, and recommend various tools to improve the situation, to include:

Parking changes	Bike lanes
Placement of crosswalks	Reflectors
FESHM Changes	Traffic enforcement changes
Signage	Lighting
Speed bumps	Education

**Members:**

The chairperson, appointed by the Chair of the LSC, will recruit and recommend members of the subcommittee from various line organizations with a particular expertise or stake in traffic safety. After recommendations are made, the Chair of the LSC will formally appoint the subcommittee members.

**Consult:**

Assure all stakeholders are involved in the process. Use resources of the ES&H Section or the Business Services Section to assist with data collection and analysis.

## ES&H REVIEW PANELS

For ES&H concerns of a limited duration or scope, ES&H review panels may be created on an "ad hoc" basis at the discretion of the division/section head. For operations where continuing review efforts will be needed (e.g., activities expected to continue for more than one year), membership of such panels is to be appointed by the division/section head with concurrence of the Chief Operating Officer. The Chair of such a review panel shall then be appointed to the relevant Laboratory Safety Committee (LSC) subcommittee. The efforts of such a panel shall be summarized in the LSC subcommittee's quarterly report as well as by any other means specified by the appointing division/section head. Charters of such review panels are to be documented.

## SENIOR SAFETY OFFICERS (SSO)

The Senior Safety Officers (SSOs) meet as a subcommittee on a monthly basis, with the ES&H Director as the Chair. Other individuals may be invited to attend the subcommittee meetings as appropriate. The ES&H Director chairs the meeting and assures that minutes are taken documenting the subcommittee activities.

The purpose of the subcommittee is to:

- Provide a forum for the exchange of ES&H information between the SSOs and the Directorate.
- Provide a means through which the Directorate can request the development of proposed solutions to ES&H problems that arise at the Laboratory.
- Monitor progress on lab-wide issues from the viewpoint of the ES&H professional staff.
- Identify ES&H concerns and topics that need to be addressed by the Laboratory.
- Provide a pipeline for information flow to and from the Directorate and assist the Directorate in establishing ES&H goals.

At times, this subcommittee may establish *ad hoc* working groups created from the SSOs and other ES&H professionals to work on technical problems associated with ES&H issues at the Laboratory.

To view the Committee/Subcommittee Membership please go to:

<http://www-esh.fnal.gov/pls/default/committees.html>