



THE UNIVERSITY OF MAINE SAFETY AND ENVIRONMENTAL MANAGEMENT

Electrical Safety

General

Electrical safety is essential to the well being of the University of Maine community.

The hazards of electricity include electrocution, flash burns, fire, and injuries from explosions when conductors are shorted. A person need not be in contact with a live part in order to be injured. Conductors that operate at less than 50 volts to ground will not be covered in this policy if there is no significant risk of injuries of an electrical nature including explosion.

Employees, students and visitors must be protected from the hazards of electrical energy. This will be accomplished by guards, signs, maintenance, training, policies, procedures, and work practices.

Most people on campus are highly unlikely to be exposed to energized equipment or conductors and Annual Safety Training is designed to provide awareness training for these individuals.

Electrical safety in the classroom must be supervised by the instructor/competent person and they shall follow the applicable requirements of this policy.

Regulatory Guidance

OSHA 29 CFR 1910.302 through 1910.335

NFPA 70E – Current Addition

Maine DOL Directive 20-06 Electrical Installation (Rev. 09/2013)

Requirements

All installation and maintenance of electrical systems and equipment must meet with electrical codes and manufacturer's requirements.

The University of Maine *Facility Maintenance and Renovation Policy* requires that all repairs, modifications and new construction must be performed by Facilities Management personnel or contractors under Facilities Management supervision.

All portable electrical equipment (including extension cords) must be properly handled in order to prevent damage. Additionally all equipment must be visually inspected prior to use in order to ensure that no damage has occurred. Adapters which defeat the ground system cannot be used.

Experimental equipment that uses electrical energy must be constructed in such a manner that no electrical conductors are exposed.

Each department is required to assess the work space and job tasks of their employees and develop safe electrical work practices for those employee that work near or on exposed electrical conductors.

The following may be required:

1. Appropriate training for employees exposed to energized conductors.
 - Employees that work on or near exposed electrical conductors will need specific training. OSHA divides these people into two categories, qualified and unqualified. The qualified/unqualified designation will change with each situation, i.e. a person may be qualified on one piece of equipment but not on any other equipment.
 - The OSHA unqualified person may work near but not on energized equipment or conductors. An unqualified person may also work on equipment that has been deenergized by being locked out. The lock-out procedure must be approved by a qualified person, and follow the University of Maine Lockout Program procedures.
 - The OSHA qualified person is a person who has sufficient training and equipment to safely work on specific energized conductors. A person who designs lock-out procedures must also be electrically qualified.
2. Departments that allow employees to work on energized conductors must maintain written procedures for each situation and/or piece of equipment. Written permits must be issued and signed by a supervisor or higher authority, detailing the justification for working on live circuits and how employees will be protected. These permits must meet the requirements of NFPA 70E, current addition.
3. Each department shall conduct an annual written audit of their work practices and written plans.

Batteries

Although batteries or systems of batteries may be under 50 volts they can still pose a significant hazard when there is sufficient energy present to cause a fire or explosion. The potential energy stored in these systems requires appropriate precautions to prevent fire or explosion.

- These storage batteries shall be protected from short circuits. Based on risks groups of batteries may need to be located within a protective enclosure or area accessible only to qualified persons.
- The battery area shall be ventilated either by a natural or powered ventilation system to prevent the accumulation of explosive gasses.
- Appropriate personal protective equipment shall be used while working on or servicing batteries. Tools used for working on batteries shall be insulated or non-sparking.

Training

This policy includes the following training requirements:

- Electrical Safety Awareness Training obtained through Annual Safety Training
- Unqualified Person Training obtained by attending unqualified person training and reviewing department specific electrical hazards.
- Qualified Person Training obtained by attending qualified person training, and specific department safe electrical safety work practice written plans and procedures.
- NFPA 70 E Training for individuals responsible for writing and auditing safe electrical work practice written plans and procedures.

Responsibilities

Safety begins with the individual. Each employee is expected to participate fully in the electrical safety program by developing and applying the following work habits.

The **employee** is responsible for:

- Following safe operating procedures.
- Attending training in electrical safety issues.
- Observing all warning signs and regulations.
- Obtaining proper personal protective equipment and using it.
- Reporting all unsafe conditions and acts to the supervisor.

The **supervisor** is responsible for:

- Implementing this policy to applicable tasks within their respective areas.
- Coordinating the implementation of University of Maine Electrical Safety Policy within their areas.
- Ensuring employees comply with all provisions of this policy.
- Ensuring employees receive training appropriate to their assigned electrical tasks and maintaining documentation of such training.
- Ensuring employees are provided with and use appropriate PPE.

Each applicable **department** is responsible for:

- Assessing their workplace(s) for Electrical Hazards
- Providing training to employees and students at risk for injuries from electrical hazards.
- Providing appropriate personal protective equipment per the requirement set forth in NFPA 70-E, current addition.
- Conducting annual audits and maintaining training records.
- Providing or assisting in task specific training for electrical work qualifications.

The **Department of Safety and Environmental Management** is responsible for:

- Assisting departmental safety coordination & line supervisors with the identification of electrical hazards and potential injury situations.
- Assisting with required electrical safety training.
- Ensuring the University of Maine Electrical Safety Policy is reviewed, maintained and updated.

Facilities Management:

- Maintaining and installing electrical distributions systems in accordance with appropriate codes and manufacturer's requirements.
- Promptly responding to electrical safety issues.
- Assisting Departments with facility related lockout/tagout and electrical system concerns and design.

For Additional Information

Contact your Department Safety Coordinator or Safety and Environmental Management at 207/581-4055.

<http://www2.umaine.edu/SEM/policiesguides.htm>

Personal Protective Equipment Policy

Lock Out/Tag Out Program

Facilities Management Renovation Policy

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