Written Electrical Safe Work Practices Program

University of South Carolina Lancaster

Section 1. Program Statement

1.1 Electrical Safe Work Practice Program

The University of South Carolina at Lancaster's Maintenance and Custodial Department will maintain a safe and healthy work environment in an ongoing effort to protect each employee from potentially hazardous or unsafe conditions. It is the goal of The USC Lancaster to insure that employees will at no time suffer any adverse health effects or injuries related to their work environment.

In the ongoing control of personal injury associated with electrical equipment operation, repair, and maintenance, it is the USC-L Maintenance and Custodial Department's primary objective to operate, maintain and repair all electrically operated equipment in a safe and proper manner. Guidelines and procedures outlined in this manual have been developed to ensure that employees are properly trained in electrical safe work practices, have the proper equipment to safely work on electrical equipment and that unqualified employees are restricted from exposure to potentially dangerous electrical equipment.

1.2 Purpose

The purpose of this Electrical Safe Work Practice Program is to establish and maintain a program that will assure compliance with all federal and state regulations, and to limit the number of accidents and losses associated with the operation, maintenance and repair of electrical equipment.

1.3 Objectives:

The objectives of the Electrical Safe Work Practice Program include:

To ensure that electrical equipment is free from recognized hazards that are likely to cause death or serious injury.

To determine the required safety equipment to protect employees from electrical hazards and ensure that equipment is available and utilized.

To ensure that electrical equipment is properly marked and labeled throughout the campus.

To ensure that disconnecting means and circuits are marked to indicate their purpose.

To ensure that proper working clearances are maintained around electrical equipment.

To determine and designate specific job classifications as qualified or unqualified with respect to potential electrical exposures.

To ensure that qualified and unqualified employees who face the risk of electrical shock (that is not reduced to a safe level by electrical installation requirements) are properly trained.

To ensure that whenever feasible, employees de-energize electrical equipment according to established procedures in the USC-L Maintenance Department's Lockout/Tagout Program.

To ensure that qualified employees utilize safe work practices that prevent contact with hazards, or infeasibility the electrical equipment is not de-energized.

Section 2 Regulatory Requirements

2.1 Regulatory Requirements

Requirements and regulations pertaining to Electrical Safe Work Practices are found in the following publications:

Occupational Safety and Health Standards for General Industry (29 CFR 1910.269 and 1910.301 thorough 1910.399)

Section 3 Responsibility/Resources Employed

3.1 Department Manager

The USC Lancaster Safety Director is ultimately responsible for the Electrical Safe Work Practice Program at USC-Lancaster.

3.2 Safety Coordinator

The USC Lancaster Safety Director is responsible for developing the written Electrical Safe Work Practice Program, with assistance from maintenance and health and safety personnel. The Safety Coordinator will audit the entire written program annually, and will ensure that required training is conducted for all affected employees in the department.

3.3 Supervisors

Each departmental Supervisor is responsible for the day to day implementation and enforcement of the Electrical Safe Work Practice Program in their area of jurisdiction. Each department Supervisor is responsible for notifying the Safety Coordinator when new installations and/or equipment need to have revision/additions made to the documented and implemented procedures. All procedures must be approved by the departmental Supervisor before being implemented. Supervisors are responsible for the annual review of employees' proficiency in following established work practices and procedures, and notifying the Safety Coordinator when employees need initial and refresher safety training. Documentation of annual reviews should be forwarded to the Safety Coordinator. Supervisors must ensure that required safety equipment is made available to employees required to perform electrical related duties.

3.4 Qualified Employees

Qualified employees are responsible for following procedures established in the Electrical Safe Work Practice Program.

3.5 Unauthorized Employees

Unauthorized employees are individuals who face the risk of electrical shock, but are not qualified to make repairs to the electrical equipment or associated supply lines, etc.

Section 4.0 Training

4.1 Qualified Employees

Qualified Employees are defined as individuals that are permitted to work on, or near exposed energized parts. The work conducted by Qualified Employees may involve either direct contact, or contact by means of tools and materials. Training shall be of the classroom or on-the-job type, and will introduce and establish proficiency in the departmental Electrical Safe Work Practices. Training documents will be kept on file indefinitely in the Custodial Services and Ground Maintenance office. All Qualified Employees shall be trained, and become familiar with the following information:

The skills and techniques necessary to distinguish exposed live parts from other parts of electrical equipment

The skills and techniques necessary to determine the nominal voltage of exposed live parts

The clearance distances specified for various voltages to which the qualified person will be exposed

Lockout/Tagout procedures used to de-energize electrical equipment before work is conducted.

The proper use of personal protective equipment, insulating and shielding materials, and
I nsulated tools

The prohibition of conductive apparel when working on, or around electrical equipment

The safe and proper use of portable electrical equipment, including handling, visual inspection, grounding, conductive work locations, and extension cords

Electrical test instruments and other equipment, including rating and visual inspection

When applicable, emergency procedures, such as manhole and pole top rescue

ELECTRICAL SAFETY EMPLOYEE TRAINING LIST

1. Greg Parker
2. Butch Lucas
3. Larry Duncan

4.2 Unqualified Employees

Unqualified employees are defined as individuals that are not permitted to physically work on exposed energized electrical parts, but may have this type of equipment in there work area. All unqualified employees shall be trained, and become familiar with the following information:

The risks associated with energized equipment

The tasks that can be done only by qualified workers

How to protect themselves when working around electricity

The importance of obeying electrical hazard signs and tags

All Maintenance and Custodial Staff have awareness level training concerning Electrical Safety.

4.3 Training Frequency

Designated Qualified and Unqualified employees will receive training at least annually. In addition, retraining will be provided whenever there is a change in the equipment or process that may present a new hazard, or when there is a change in electrical energy control procedures. Additional training will also be conducted whenever a periodic inspection reveals that there are deviations from, or inadequacies in the employees' knowledge or use of the electrical safe work practices outlined in this program. Training will re-establish employee proficiency and introduce new or revised control methods and procedures as necessary. If a task is preformed less than once per year, re-training will occur before the employee(s) perform the assigned work.

4.4 Random/Periodic Evaluations

The entire Electrical Safety Work Practices Program will be periodically evaluated by the Department of Environmental Health and Safety. Periodic evaluations will be made to ensure the electrical safe work practices are being properly implemented. Unqualified employees will be randomly evaluated during health and safety audits and any infractions will immediately be brought to the employees' attention, and will be documented in the inspection report.

Section 5.0 Protective Measures/Equipment

5.1 Test Instruments and Equipment

Only qualified employees may perform testing work on electrical circuits or equipment.

All test instruments and equipment and associated leads, cables, power cords, probes, and connectors shall be visually inspected for external defects and damage before the equipment is used. If any defect or damage is noted that may expose the employee to injury, the item shall be removed from service, and no employee shall use the item until repairs and tests have been made.

Test instruments and equipment and their accessories shall be rated for the circuits and equipment to which they will be connected and shall be designed for the environment in which they will be used.

5.2 Protective Equipment

Employees working in areas where there are potential electrical hazards shall use electrical protective equipment that is appropriate for the specific parts of the body to be protected and for the work being performed.

All qualified employees working on live electrical parts shall utilize approved electrical insulating gloves.

All qualified employees are required to wear electrically rated steel-toed boots at all times.

All employees will utilize safety glasses while performing electrical related work.

All qualified employees will utilize insulated tools or handling equipment if the items might make contact with conductors or live electrical parts.

All qualified employees will utilize approved fuse handling equipment that is insulated for the circuit voltage to remove or install fuses when the fuse terminals are energized.

Insulating materials, such as switchboard matting, insulated blankets will be used when deemed necessary in work procedures.

5.3 Protective Practices

The following is a list of electrical safe work practices that will be followed at the University of South Carolina.

Whenever feasible, Lockout/Tagout procedures shall be used to de-energize electrical equipment before work is conducted.

When normally enclosed live parts are exposed for maintenance or repair, they shall be guarded to protect unqualified persons from contact with live parts. Barricades may be used if necessary. If barricades are not sufficient, then attendants shall be used.

Safety signs and tags shall be used to warn employees of electrical hazards which may pose a danger.

Qualified employees may not approach, or take any conductive object without a approved insulating handle, closer than 4 feet to any exposed energized parts. Approved electrical gloves, sleeves must be utilized if approaching closer than 4 feet.

When an unqualified person is working in an elevated position near overhead lines, the location shall be such that the person and the longest conductive object he or she may contact cannot come closer than 10 feet to any unguarded, energized overhead line.

Conductive items, such as jewelry, watch bands, bracelets, rings, key chains, necklaces, may not be worn if they might contact exposed energized parts.