

 WAKE FOREST UNIVERSITY	SAFETY_001	Revision Date: Developed by: Environmental Health & Safety <u>11/29/16</u>
	ELECTRICAL SAFETY	Approved by: Associate Vice President, Strategy and Operations <i>[Signature]</i> 11/29/16
Effective Date: November 1, 2001		

1. PURPOSE

This policy is intended to protect workers from the hazards of electrical circuits of 50 volts or greater.

2. REFERENCES

OSHA Standard 1910.303
 NFPA Standard 70E

3. DEFINITIONS

LOTO – Lockout Tagout Program for the University that defines how to work on equipment and systems by utilizing de-energization and locking devices to protect the worker.

PPE – personal protective equipment worn by employees.

Qualified persons – persons who are permitted to work on or near exposed energized parts who are trained and competent for the following:

- Skills and techniques necessary to distinguish exposed live parts from other parts of electric equipment
- Skills and techniques necessary to determine the nominal voltage of exposed live parts
- Knowledge, skills, and techniques to work safely on energized circuits and overhead lines that are specified in the OSHA Standard in 29 CFR 1910.333© and corresponding voltages to which the person will be exposed.

Unqualified persons – persons with little or no training and skill set necessary for working with electrical hazards near exposed energized parts

4. RESPONSIBILITIES

Environmental Health & Safety

- Assist with the development, implementation, and review and maintenance of the electrical safety program.
- Assist with scheduling contractor provided electrical safety training for qualified Maintenance and Utilities Employees.

Supervisors/Department Heads

Supervisors/Department Heads of all workers, whether qualified or unqualified are responsible for:

- Ensure workers receive adequate and appropriate training before performing assigned tasks that involve electrical safety
- Define and assign employees who are deemed Qualified and Unqualified
- Ensure that employees practice safe work practices that are compliant with OSHA Standard 1910.303 and NFPA Standard 70E.
- Develop and maintain safe work practices and protocols for specific equipment, machines, etc, that fall within the responsibility of a given work division
- Ensure workers are provided with and use of proper and adequate PPE and materials and tools

Employees

All employees, both qualified and unqualified, will be held accountable for:

- Attend scheduled training
- Use of appropriate electrical protective equipment and materials
- Follow safe electrical work practices
- Remove and report any unsafe electrical equipment from service
- Communicate to supervisors any need for additional training, assistance, or **PPE*** associated with electrical work

**PPE such as nonconductive head protection, eye and face protection and insulated gloves may be necessary for protection against electrical hazards. It is mandated by OSHA that required PPE be worn. Failure to do so is a policy violation and may result in disciplinary action.*

Qualified persons are those who have been trained in identifying, isolating, or eliminating electrical hazards when working with exposed energized parts. They have the skill set and competency to work safely.

Unqualified persons have very little training in this area and are not allowed to work on exposed energized systems.

5. PROCEDURE

Work practices should be used to prevent electric shock or other injuries that may result from contact with an energized circuit. Live parts should be de-energized before work begins. Circuits should not be de-energized if it could cause the interruption of life support equipment, deactivation of emergency alarm systems, shutdown of ventilation equipment in hazardous location, or complete removal of illumination in a given area. In this event, refer to the procedures in WFU's LOTO Policy. Approval for Energized Work must be granted and a permit issued from the office of the Director of Maintenance and Utilities.

The LOTO Program should be used to de-energize equipment.

Arc Flash Protective Measures must be incorporated and followed as required by the NFPA 70E Standard.

Special procedures should be followed when work is done near energized equipment and circuits, especially overhead power lines. Consideration should be given to housekeeping procedures, lighting, and the conductivity of materials and equipment. The hazards of confined spaces should be considered when work is done in manholes or underground faults.

Safety-related work practices should be followed when using cord and plug connected equipment and extension cords. Equipment should not be raised or lowered by its electrical cord. All electrical equipment should be inspected before use and, if found to be defective, tagged and removed from service until repaired.

Ground Fault Circuit Interrupters (GFCI) or low voltage tools should be used in conductive work locations. Special equipment may also be required in areas that may contain flammable or ignitable material or vapors.

Safety signs, tags, or barricades should be used to warn and protect workers. When these techniques do not provide sufficient protection, an attendant must be used.

Insulated tools and handling equipment (i.e. protective shields, barriers, or insulating materials) should be used when working near exposed electrical conductors.

6. TRAINING

Training is required for *anyone* who faces a risk of electric shock while performing normal job duties. *Qualified persons* should receive additional training that allows them to distinguish live parts from other electrical equipment, measure the voltage of exposed live parts, and determine minimum clearance distances. Training for electrical safety is obtained on-line for general awareness training and classroom training is provided by third party contractor for Maintenance and Utilities Employees.

7. REVISIONS

REVISION	REVISION DATE
Revised the wording of the purpose.	11/28/2016
Change in signing authority to Associate Vice President, Strategy and Operations, include Arc Flash 70E Standard as part of Procedure and reference, and include LOTO in definitions.	1/29/2015