City of New London

Electrical Safety

Policy

May 21, 2003

I. PURPOSE

The purpose of this policy is to safe work practices that are intended to prevent electric shock or other injuries resulting from either direct or indirect electrical contacts when work is performed near or on equipment or circuits which are or may be energized and to comply with the ILHR/OSHA Standard on electrical safe work practices 29 CFR 1910.331 through 1910.335.

II. AUTHORITY & REFERENCE

Occupational Safety and Health Administration (OSHA) 29 CFR 1910.331 through 1910.335

Industry, Labor and Human Relations (ILHR) 32.15

III. APPLICATION

This policy applies to both Qualified persons and Unqualified persons (See the definitions below) who are working on, near, or with the following electrical installations:

1. Premises Wiring. Installations of electrical conductors and equipment within or on buildings or other structures, and on other premises such as yards, carnival, parking and other lots and industrial substation;

2. Wiring for Connection to Supply. Installations of conductors that connect to the supply of electricity;

3. Other Wiring. Installations of other outside conductors on the premises;

4. Optical Fiber Cable. Installations of optical fiber cable where such installations are made along with electrical conductors; and

5. Exposed Energized Parts. Installations that involve work performed by unqualified persons on or near exposed energized parts.

IV. RESPONSIBILITY FOR COMPLIANCE

The development and administration of this electrical safety policy will be the responsibility of the Human Resource Coordinator.

The administrative responsibility of this individual will include:

1. Identification and location of hazardous exposures.

2. Supervision of employee training.

3. Selection and use of personal protective equipment.

4. Periodic evaluation of the policy to determine its continued effectiveness.

V. DEFINITIONS

Qualified Person – means a person permitted to work on or near exposed energized parts who has been trained in and familiar with:

1. The skills and techniques necessary to distinguish exposed live parts from other parts of electric equipment;

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

3. The knowledge, skills and techniques to work safely on energized circuits;

4. The proper use of special precautionary techniques, personal protective equipment, insulating and shielding materials, and insulated tools; and

5. The clearance distances for work performed near overhead lines that are specified in the OSHA standard that appears in 29 CFR 1910.333 (c) and the corresponding voltages to which the person will be exposed.

Unqualified Person - means a person with little or not training in avoiding the electrical hazards of working on or near exposed energized parts.

On or Near – means close enough to exposed line parts (by either personal contact or contact by tools or materials) for an employee to be exposed to any hazard they present.

VI. GENERAL REQUIREMENT

Appropriate safe work practices will be employed to prevent electric shock or other injuries resulting from either direct or indirect electrical contacts, when work is performed near or no equipment or circuits that are or may be energized. Those specific work practices will be consistent with the nature and extent of the associated electrical hazards.

VII. WORK ON OR NEAR EXPOSED DEENERGIZED PARTS

1. Live parts to which an employee may be exposed will be deenergized before any employee works on or near them, unless deenergizing will introduce additional or increased hazards or is not feasible due to equipment design or operational limitations (See below for examples).

   Live parts that operate at less than 50 volts to ground need not be deenergized if there will be no increased exposure to electrical burns or to explosion due to electric arcs.

   a. Examples of increased or additional hazards include interruption of life support equipment, deactivation of emergency alarm systems, shutdown of hazardous location ventilation equipment, or removal of illumination for an area.

   b. Examples of work that may be performed on or near energized circuit parts because of infeasibility due to equipment design or operational limitation include testing of electric circuits that can only be performed with the circuit energized and work on circuits that form an integral part of a continuous process that would otherwise need to be completely shut down in order to permit work on one circuit or piece of equipment.

2. Whenever any employee is exposed to contact with parts of fixed electric equipment or circuits that have been energized, the circuits energizing the parts will be properly locked out.

3. Safe procedures for deenergizing circuits and equipment will be determined before circuits or equipment are deenergized.

4. The circuits and equipment to be worked on will be disconnected from all electric energy sources. Control circuit devices, such as push buttons, selector switches, and interlocks, may be used as the sole means for deenergizing circuits or equipment. Interlocks for electric equipment may not be used as a substitute for lockout procedures.

5. Stored electric energy that might endanger personnel will be released before starting work. Capacitors shall be discharged and high capacitance elements shall be short-circuited and grounded, if the stored electric energy might endanger personnel.

6. Stored non-electrical energy in devices that could reenergize electric circuit parts will be blocked or relieved to the extent that the circuit parts could not be accidentally energized by the device.

7. No work will be performed on or near deenergized live parts, circuits or equipment until their deenergized condition has been verified. Verification of the deenergized condition will be made as follows:

    a. A qualified person will operate the equipment operating controls or otherwise verify that the equipment cannot be restarted.

    b. A qualified person will use test equipment to test the circuit elements and electrical parts of equipment to which employees will be exposed and will verify that the circuit elements and equipment parts are deenergized.

    c. The test shall also determine if any energized condition exists as a result of inadvertently induced voltage or unrelated voltage back feed even though specific parts of the circuit have been deenergized and presumed to be safe.

8. Before any circuit or equipment is reenergized (even temporarily) the following requirements will be met in the order listed:

    a. A qualified person will conduct test and visual inspections, as necessary, to verify that all tools, electrical jumpers, shorts, grounds, and other such devices have been removed, so that the circuits and equipment can be safely energized.

    b. Employees exposed to the hazards associated with reenergizing the circuit or equipment will be warned to stay clear of circuits and equipment.

    c. Each lock will be removed by the employee who applied it or under his or her direct supervision.

    d. If that employee is absent from the workplace, then the lock may be removed provided that it is certain that the employee who applied the lock is not available at the workplace, and that employee is made aware that the lock has been removed before he or she resumes work.

    e. There will be a visual determination that all employees are clear of the circuits and equipment.

VII. WORK ON OR NEAR EXPOSED ENERGIZED PARTS

1. In those cases where the exposed live parts are not deenergized, either because of increased or additional hazards or because of infeasibility due to equipment design or operational limitations, other safety related work practices must be used to protect employees who may be exposed to the electrical hazards involved.

   The work practices used must protect employees against contact with energized circuit parts directly with any part of their body or indirectly through some other conductive object or where employees are near enough to be exposed to any hazard they present.

2. Only qualified persons may work on electric circuit parts or equipment that has not been deenergized. These employees must be familiar with the proper use of special precautionary techniques, personal protective equipment, insulating and shielding materials, and insulated tools.

3. Whenever work is to be performed near overhead lines, the lines will be deenergized and grounded, or other protective measures will be provided before work is started.

4. When overhead lines are to be deenergized, arrangements to deenergize and ground them will be made with the organization that operates or controls the electrical circuits involved.

5. When protective measures are provided such as guarding, isolating, or insulating, those precautions shall prevent employees from contacting such lines directly with any part of their body or indirectly through conductive materials, tools, or equipment.

6. Only qualified employees will be permitted to install insulating devices on overhead power transmission or distribution lines.

7. Whenever an unqualified employee is working in an elevated position near overhead lines, the location will be such that the person and the longest conductive object he or she may contact, cannot come closer to any unguarded, energized overhead line than the following distances:

   a. For voltages to ground 50k V or below – 10ft. (305cm);
   b. For voltages to ground over 50k V – 10ft. (305cm) plus 4 inches (10cm) for every 10k V over 50k V.

8. Whenever an unqualified employee is working on the ground in the vicinity of overhead lines, the person may not bring any conductive object closer to unguarded, energized overhead lines then the distances given above.

9. For voltages normally encountered with overhead power lines, objects, which do not have an insulating rating for the voltage involved, are considered to be conductive.

10. Whenever a qualified person is working in the vicinity of overhead lines, whether in an elevated position or on the ground, the person may not approach or take any conductive object without an approved insulating handle close to exposed energized parts.