12.0 ELECTRICAL SAFETY TRAINING PROGRAM

12.1 GENERAL REQUIREMENTS

a. Site Superintendent

The Site Superintendent should provide training in the various electrical safe work practices described in these guidelines and should insure that employees do not perform any work, until they have received safety and health training covering the Company's site-specific safety procedures and site electrical safe work procedures. Employees' safety training should consist of on-the-job training or classroom-type training or a combination of both. A list of various resources for electrical safety information is provided in Exhibit 14.8 on page 145. The Site Superintendent should certify that Foremen and employees have been trained by preparing a certification record which includes the identity of the person trained, the signature of the person who conducted the training, and the date the training was completed. The certification record should be prepared at the completion of training and should be maintained on file by the Safety Coordinator. The certification record should be made available upon request by an OSHA Compliance Officer.

Such training should include the following subjects:

- Company's site-specific safety procedures.
- Company's electrical safe work procedures.
- Recognition and avoidance of dangers relating to installing, upgrading, testing, operating, and/or servicing electrical cables, equipment, components, or systems.
- Procedures to be followed in emergency situations.
- First aid, CPR, and bloodborne pathogen training.

b. Site Safety Coordinator

The safety coordinator should conduct both classroom and hands-on Foremen train-the-trainer sessions covering each of the topics listed on the foreman's certification form. The foreman's certification record should be signed by the foreman and the safety coordinator at the completion of training and should be maintained on file by the safety coordinator for the duration of the project. The safety coordinator should also assist the foreman in conducting both classroom and hands-on employees training sessions covering the Company's electrical safe work procedures. The employee's safety training records should be signed by the employee and the foreman or safety coordinator at the completion of training and should be maintained on file by the safety coordinator for the duration of the project. The Company's Foremen and employee training records should be made available to the OSHA's compliance officer, upon request.

c. Foremen

The Site Superintendent should ensure that all Foremen, attend the Train-the-Trainer session given by the Site Superintendent and/or the Safety Coordinator and sign the safety training verification form - see sample form at the end of this section.

Foremen are responsible for the prevention of accidents for work under their direction and safety training of the employees they supervise. Each Foreman should include safety measures in the planning of his or her assigned work for the coming week and should discuss such safety measures with crew members at the regular toolbox meetings usually held on Monday mornings. Foremen should conduct daily job briefings with crew member to discuss description of work, lockout/tagout, job task hazards, required test instruments, personal protective equipment, other protective equipment, set-up & controlling approach boundary, and safe work practices to be followed. Before assigning an employee to any new or unfamiliar job, the Foreman should show and explain the safe procedures and precautions that must be taken before the employee can proceed with the task.

d. Qualified Employees

Each employee working on or near electrical equipment will be given both classroom and on-the-job electrical safety training sessions covering the Company's safety requirements listed within this manual, applicable OSHA 1910 and 1926 Electrical Safety Standards, and NFPA 70E provisions for Electrical Safety Requirements for Employee Workplaces. In addition, employees, who face a risk of the hazards of electricity should be trained to:

- Understand the specific hazards and degree of possible injuries associated with each job task.
- Know and comply with the required job task electrical safety procedures to safeguard themselves and other site workers.
- Follow emergency procedures to safely respond to electrical accidents and perform first aid and CPR.

1. Qualified Employee

A Company employee is considered to be a qualified person, when he or she has been trained and is knowledgeable of the construction and operation of equipment or a specific work method, and trained to recognize and avoid the electrical hazards that might be present with respect to that equipment or work method.

Employees should be familiar with the proper use of special precautionary techniques, personal protective equipment, insulating and shielding materials, and insulated tools and test equipment.

An employee can be considered qualified with respect to certain equipment and methods, but still be unqualified for others. Employees permitted to work within limited approach of exposed energized conductors and circuit parts should, at a minimum, be additionally trained in the following:

- Skills and techniques to distinguish exposed energized parts from other parts of electric equipment.
- Skills and techniques necessary to determine the nominal voltage of exposed energized parts.
- Approach distances and the corresponding voltages to which the qualified employee will be exposed.
- Decision-making process necessary to determine the degree and extent of the hazard and the personal protective equipment and job planning necessary to perform the task safely.
- Lockout/tagout procedure for the job task and their duty in applying their personal locks and tags.

A Company apprentice, who is undergoing on-the-job training and, who in the course of such training has demonstrated an ability to perform duties safely at his or her level of training and is under the direct supervision of a qualified company employee, may be considered to be a qualified employee for the performance of these duties.

2. Unqualified Employees

Unqualified employees should be trained in and be familiar with Company's electrical safety procedures, when they are assigned to work close to the limited approach boundary, near to uninsulated overhead energized lines, and when assigned to operate or stand near vehicular or mechanical equipment capable of having parts of its structure elevated near energized overhead lines.

e. Subcontractor Superintendents

The Subcontractor's Superintendent should ensure that his or her Foremen conduct safety orientation training sessions, weekly safety toolbox talks, and daily job briefings to maintain employee safety awareness. The Subcontractor's Superintendent should conduct a Foremen Train-the-Trainer session covering the Subcontractor's site-specific safety procedures and other project safety and loss control requirements.

The Subcontractor's new-hire safety orientation session should have employees sign the attendance sheets and should:

- Acquaint the employee with the work site, the nature of the job, the hazards that he or she may encounter, and the equipment and safe practices to be used to minimize accidents.
- Review the contents of the Subcontractor's, Company 's and Customer's site-specific project safety and loss control rules stressing the sections applicable to the employee's job tasks.
- Advise of the requirements for working safely and that failure to follow safe practices may result in disciplinary action including dismissal for serious, willful, or repeated violations of company safety rules and procedures.

Additionally, each new employee should review safety precautions with his or her Foreman initially upon reporting, and after 2 to 3 weeks of employment, when the employee has become familiar with the job. The weekly toolbox safety talks should be conducted by Foremen to discuss and emphasize hazards of current work. Foremen should also conduct daily job briefings with crew members.

12.2 TRAINING RECORDS AND DOCUMENTATION

The Site Superintendent has the responsibility of ensuring that the Safety Coordinator keep safety training records up-to-date and readily available for review during an OSHA inspection. The Safety Coordinator should inspect the Subcontractor's safety training documentation to ensure compliance.

12.3 COMPANY'S FOREMAN TRAIN-THE-TRAINER VERIFICATION FORM

Company's Safety & Loss Control Program

- ☐ Targeted safety performance goals
- ☐ Safety roles & responsibilities
- ☐ Hazard communication
- ☐ Medical & first-aid
- ☐ Fire prevention & protection
- ☐ Drug- & alcohol-free workplace
- ☐ OSHA compliance
- ☐ Security procedures
- ☐ Safety training
- ☐ Safety awards
- ☐ Accident reporting & investigation
- ☐ Employee warning, reprimand & termination

Federal or State OSHA Safety & Health Standards

- ☐ 1910 Electrical safety standards
- ☐ 1926 Electrical safety standards

Electrical Equipment Manufacturers' Instructions

- ☐ Installation
- ☐ Testing
- ☐ Operation
- ☐ Servicing

Basic Electrical Safety Concepts

- ☐ The effects of current flow in human tissue
- ☐ The effects of arc flashes
- ☐ Impedance of human tissue
- ☐ Impedance of human contact
- ☐ Concept of approach boundaries
- ☐ Flashover distances at various voltages
- ☐ Concept of flash-protection boundary
- ☐ How to calculate a flash-protection boundary
- ☐ Hazards associated with testing circuits
- ☐ Effective construction of safety grounds
- ☐ Hazards associated with grounding
- ☐ Effects of pressure on an enclosure
- ☐ Care and inspection of a voltmeter
- ☐ Effects of voltage on current flow
- ☐ Effects of voltage on arc flash & arc blast
- ☐ Unknown electrical hazards
- ☐ Relationship of exposure to hazards and injury
- ☐ Protective characteristics of PPE
- ☐ Visual indications of an electrical hazard
- ☐ Different types of electrical hazards

Company's Site-Specific Safety Procedures

- ☐ First-aid & CPR training & certification
- ☐ Personal protective equipment
- ☐ Fall protection
- ☐ Ladders & stairways
- ☐ Scaffolds
- ☐ Aerial lifts
- ☐ Excavation & trenching
- ☐ Traffic control & work zone protection
- ☐ Directional boring
- ☐ Motor vehicle & mobile equipment
- ☐ Material handling & storage
- ☐ Tools - hand and power
- ☐ Confined space entry
- ☐ Lockout/tagout
- ☐ Housekeeping & waste disposal
- ☐ Hazardous materials
- ☐ Emergency & rescue action plans

Customer's Project Requirements

- ☐ Interfacing with project & facility personnel
- ☐ Existing electrical system as-built drawings
- ☐ Existing electrical system & equipment SOP's
- ☐ Work permit procedures

Company's Site Electrical Safety Procedures

- ☐ Compliance with OSHA & consensus standards
- ☐ Project specs, drawings, vendor guidelines
- ☐ Provide electrically safe work condition
- ☐ Use of Company's site lockout/tagout procedures
- ☐ Testing for voltage
- ☐ Performance of job hazard survey
- ☐ Preparation of job task work procedure
- ☐ Conduct of crew members job briefing session
- ☐ Assurance PPE & protective equipment being used
- ☐ Set-up and control access to approach boundaries
- ☐ Issue appropriate test instruments for voltage
- ☐ General installation requirements
- ☐ Below ground operations
- ☐ Confined space entry work
- ☐ Ceilings and overhead cable trays
- ☐ Installations through fire penetrations
- ☐ Aerial cable installation
- ☐ Temporary electric power & lighting
- ☐ Hazardous classified locations
- ☐ Check-out and start-up procedures

I have attended the Company's Foreman safety training session that addressed all of the topics lists or those specific topics checked off and have been issued my own personal copy of the Company's Safety Program Manual, site-specific safety procedures, and site electrical safety procedures.

Foreman's Name (Printed):_____ Date: __/__/__ Project Name:_____
Foreman's Signature:_____ Instructor's Name:_____