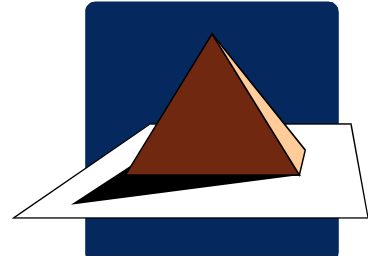


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“Service Measured To The Standard”

~ OSHA ELECTRICAL SAFETY TRAINING, I ~

When discussing electrical safety, OSHA 1910 Subpart S, §1910.301-335, is the reference for governmental guidelines. Yet, Subpart S is not the only section dealing with electrical safety. In general, OSHA 1910 addresses the “Occupational Safety and Health Standards for General Industry”. Within OSHA 1910 are several sections: Electrical, Subpart S; Personal Protective Equipment, Subpart I; Lockout, Subpart J; and Special Industries (such as Telecommunications and Power Generation, Transmission and Distribution), Subpart R. In addition to OSHA 1910, there is another OSHA guideline, OSHA 1926, which covers construction industry electrical safety.

Have you reviewed these additional sections? There is a difference in the required training for Subpart S and Subpart R. Subpart S contains safety standards and training requirements for industries having an electric utilization system. OSHA defines a utilization system as “a system which provides electric power and light for employee workplaces, and includes the premises wiring system and utilization equipment”. Utilization equipment is defined as “equipment which utilizes electric energy for mechanical, chemical, heating, lighting, or similar useful purposes”. In other words, utilization systems are those used directly to operate the process equipment within a process unit, building, etc.

Typically, these systems would be 600-Volt equipment and some 5kV and 15kV equipment found in small to medium-sized industries. Thus, the training is scaled for work hazards associated with lower voltages and lower fault energies.

Subpart R is written for specialty industries and their unique hazards such as telecommunication and public utilities. Yet, if your plant is not a utility, you may not be exempt from Subpart R and its training requirements. How does a utilization system differ from a Subpart R system? Under the Note of §1910.269 (a) (1) (i) (A), the text reads, “The types of installations covered by this paragraph include the generation, transmission, and distribution installations of electric utilities, as well as equivalent installations of industrial establishments...”. Larger facilities, with or without generation, typically have higher voltage distribution systems and some transmission systems. When their employees, or their contractor, perform work on these systems, there is a good possibility that their training requirements need to include those identified under Subpart R.

Who is qualified to work on or with electrical equipment? All individuals working on or near energized equipment—both company or contractor employee and their supervisors—must be trained based on the equipment, the

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type of work and the hazards. Furthermore, they should (required under OSHA 1910 Subpart R) be audited to insure—and document—their understanding of all applicable electrical safety guidelines.

Not all electrical workers are considered qualified to perform work on just any type of electrical equipment. A person qualified to work on UPS systems may not be qualified to rack in a 15kV circuit breaker. A qualified person must be familiar with the construction and operation of the equipment and the hazards involved as per §1910.332(b)(3). Thus, an individual's or a subgroup's required training needs must be assessed to include both general electrical safety refresher training as well as training on task specific equipment.

Who needs to be trained? Electricians must be trained. In addition, the list may include blue-collar supervisors, electrical engineers and technicians, industrial machine operators, mechanics, riggers, welders, etc. See §1910.332 Table S-4. “Workers in these groups do not need to be trained if their work or the work of those they supervise does not bring them or the employees they supervise close enough to exposed parts of electrical circuits operating at 50 Volts or more to ground for a hazard to exist.” Remember, instrument technicians should be included in the electrical training assessment. This group can be assigned to work on 120-Volt control and trip circuits associated with level, pressure, or temperature switches.

Listed below are some of the key points a training course should include:

- Proper use of voltage-testing equipment to check circuits energized or de-energized
- How to recognize exposed live parts from other parts of the equipment
- Lockout procedures and policy
- Discussion on working on a non-locked out de-energized circuit, including the fact that the work must be performed as if the circuit were energized
- How to inspect, test, and re-energize equipment
- Knowledge of what personal protective equipment is required to minimize electrical shock hazards
- Knowledge of clearance distances for corresponding voltages for both unqualified and qualified persons
- Safety-related work practices that pertain to respective job assignments
- Electrical training on new equipment
- Refresher training on infrequent work activities

A key to safety is to properly **assess** the training needs, **train** and **test** the individuals, **audit** their understanding of the training in the field, and **certify** their completed training. You can refer to Cornerstone's Newsletter entitled “*A.T.T.A.C. Training*” for additional training information.

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