

Avoiding Electrical Hazards

Course Number: EE-02-200

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Introduction

This course provides an overview of basic electrical safety on the job.

Electricity is essential to modern life, both at home and on the job. Some employees — engineers, electricians, electronic technicians, and power line workers, among them — work with electricity directly. Others, such as office workers and sales people, work with it indirectly. Perhaps because it has become such a familiar part of our daily life, many of us don't give much thought to how much our work depends on a reliable source of electricity. More importantly, we tend to overlook the hazards electricity poses and fail to treat it with the respect it deserves.





Why should you be concerned about electrical hazards?

Electricity has long been recognized as a serious workplace hazard, exposing employees to electric shock, electrocution, burns, fires, and explosions. In 1999, for example, 278 workers died from electrocutions at work, accounting for almost 5 percent of all on-the-job fatalities that year, according to the Bureau of Labor Statistics. What makes these statistics more tragic is that most of these fatalities could have been easily avoided.



What OSHA standards address electrical safety?

OSHA standards cover many electrical hazards in many different industries. OSHA's general industry electrical safety standards are published in *Title 29 Code of Federal Regulations (CFR)*, Part 1910.302 through 1910.308 — Design Safety Standards for Electrical Systems, and 1910.331 through 1910.335 — Electrical Safety-Related Work Practices Standards.

OSHA's electrical standards are based on the National Fire Protection Association Standards NFPA 70, *National Electric Code*, and NFPA 70E, *Electrical Safety Requirements for Employee Workplaces*.

OSHA also has electrical safety standards for the construction industry, in 29 CFR 1926, Subpart K. OSHA's standards for marine terminals, in 29 CFR 1917, and for longshoring, in 29 CFR 1918, reference the general industry electrical standards in Subpart S of Part 1910. The shipyard standards, in 29 CFR 1915, cover limited electrical safety work practices in 29 CFR 1915.181.

Although OSHA operates a federal occupational safety and health program, 24 states and 2 territories operate their own OSHA-approved programs. In those states, the standards and other procedures governing electrical safety may not be identical to the federal requirements. They must, however, be at least as effective as the federal standards.



How do OSHA's standards minimize electrical hazards?

OSHA standards focus on the design and use of electrical equipment and systems. The standards cover only the exposed or operating elements of an electrical installation such as lighting, equipment, motors, machines, appliances, switches, controls, and enclosures, requiring that they be constructed and installed to minimize workplace electrical dangers. Also, the standards require that certain approved testing organizations test and certify electrical equipment before use in the workplace to ensure it is safe.





Purchase this course to see the remainder of the technical materials.