ESSENTIAL 29: Electrical Safety



Key Takeaways:

– Learning about how electricity works regarding hazards on the job
– Understanding basic safety controls and practices at work
– Recognizing and understanding how to respond to electrical emergencies

Course Description

This lesson will provide an overview to prepare workers for working safely with and around electricity. However, this lesson will not address arc-flash hazards and controls, lock-out/tag-out procedures, or high voltage (220V or 440V) electrical safety.

annually, there are nearly 230 electrical related fatalities. The National Institute for Occupation Safety & Health (NIOSH) discovered that, “61% of electrocutions occur in two occupation divisions: 46% among craftsmen and 15% among laborers. These two groups also had the highest rates of electrocution death: 1.4 per 100,000 workers each.”

NIOSH also stated that “Electricity is the flow of an atom’s electrons through a conductor. Electrons, the outer particles of an atom, contain a negative charge. If electrons collect on an object, that object is negatively charged. If the electrons flow from an object through a conductor, the flow is called electric current. Voltage is the fundamental force or pressure that causes electricity to flow through a conductor and is measured in volts.”

Typically, fatal electrical accidents happen in the high-risk workforce when an aerial lift or boom, or scaffolding set up, results in the unexpected connection with a power line, creating a circuit.

You should always remember that electrical hazards can cause burns, shocks and electrocution (death).
– Always assume that overhead wires are energized at lethal voltages. Do not assume a wire is safe to touch, even if it is down or appears to be insulated.
– Do not touch a fallen overhead power line. Instead, always call the electric utility company to report fallen electrical lines.
– Maintain at least 10 feet (3 meters) distance from overhead wires during cleanup and other activities. While working at heights or handling long objects,

always survey the area before starting work for the presence of overhead wires.
– In the case that an overhead wire falls across your vehicle when you are driving, stay inside the vehicle and continue to drive away from the line. When an engine stalls, never leave your vehicle. Warn anyone nearby not to touch the vehicle or the wire. Call, or get another person to call, the local electric utility company and emergency services.
– Do not operate electrical equipment when you are standing in water.
– Do not repair electrical cords or equipment unless qualified and authorized.
– Always get a qualified electrician to inspect electrical equipment that has gotten wet before energizing it.
– In the case that you are working in damp locations, inspect electric cords and equipment to ensure that they are in good condition and free of defects, and use a ground-fault circuit interrupter (GFCI).
– Remember to be cautious when working near electricity.