



Train. Protect. Prevent.



## ELECTROCUTION HAZARDS

**THREE LEADING CATEGORIES** Contact with overhead power lines was by far the leading category of on-the-job electrical death. The second leading category of electrical fatality involves workers coming in contact with wiring, transformers, or other electrical components.

The third leading category of electrical fatalities involved workers coming into contact with electric current from machines, tools, appliances, or light fixtures. The construction occupations with the highest average number of deaths per year due to electrocution were electricians, construction laborers, supervisors/managers, electrical power installers and repairers.

**ELECTROCUTION HAZARDS** The major types of electrocution hazards in construction are contact with overhead power lines, contact with energized sources (e.g., live parts, damaged or bare wires, defective equipment or tools), and improper use of extension and flexible cords.

**WHAT IS ELECTROCUTION?** Electrocution results when a person is exposed to a lethal amount of electrical energy. An electrical hazard can be defined as a serious workplace hazard that exposes workers to the following: Burns Electrocution Shock Arc Flash/Arc Blast Fire Explosions **BE SAFE** by recognizing, avoiding and protecting against all of these electrical hazards. These **BE SAFE** terms are defined as:

**B = Burns:** A burn is the most common shock-related injury. Burns from electricity are one of three types: Electrical, Arc/Flash or Thermal Contact. **E = Electrocution:** Electrocution is fatal; it means to kill with electricity. Electrocution results when a human is exposed to a lethal amount of electrical energy.

**S = Shock:** Shock results when the body becomes part of the electrical circuit; current enters the body at one point and leaves at another. Electrical shock is defined as a reflex response to the passage of electric current through the body. **A = Arc Flash/Blast:** An arc flash is the sudden release of electrical energy through the air when a high-voltage gap exists and there is a breakdown between conductors. An arc flash gives off thermal radiation (heat) and bright, intense light that can cause burns. Temperatures have been recorded as high as 35,000 °F. High-voltage arcs can also produce considerable pressure waves by rapidly heating the air and creating a blast. **F = Fire:** Most electrical distribution fires result from problems with "fixed wiring" such as faulty electrical outlets and old wiring. Problems with cords (such as extension and appliance cords), plugs, receptacles, and switches also cause electrical fires. **E = Explosions:** An explosion can occur when electricity ignites an explosive mixture of material in the air.

The following are examples of electrocutions that have occurred in the construction industry:

Two workers were moving an aluminum ladder. One of them was electrocuted when the ladder came in contact with overhead power lines. A worker was raising a mast on a water well drilling truck when the mast came in contact with high voltage overhead lines, electrocuting the worker. Another worker was electrocuted while connecting a replacement electrical service box to the electrical. *Electricity is non forgiving; ask someone who was electrocuted.*

Work Site Review: Hazards/Safety Suggestions

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Company Name: \_\_\_\_\_

Work Site Location: \_\_\_\_\_

Date: \_\_\_\_\_ Start Time: \_\_\_\_\_ Finish Time: \_\_\_\_\_

Foreman/Supervisor: \_\_\_\_\_

Employee Signatures: (continue on back of sheet if necessary)

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(My signature attests and verifies my understanding of and agreement to comply with, all company safety policies and regulations, and that I have not suffered, experienced, or sustained any recent job-related injury or illness)

**Manager/Supervisor's Signature:** \_\_\_\_\_

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