



## eSafetyLine

### **Shocking Effects**

Electricity is a vital part of today's modern world, and sometimes it can be easy to forget just how dangerous it can be. Given the correct conditions, it can kill. But it can also shock you painfully, damage sensitive equipment, and ignite combustible materials. The National Safety Council estimates 600 people die every year of electrical causes. Most of these accidents involve low voltage (600 volts or less). Another 3,600 disabling electrical contact injuries occur every year in the United States, along with another 4,000 non-disabling injuries.

What causes these injuries? When a person's body becomes part of an electric circuit an electrical shock occurs. Unfortunately, since the human body is about 65% water, it is a very efficient conductor of electricity. When a shock occurs electricity flows either between body parts or through the body to a ground or the earth. The injury caused by an electric shock will vary from a slight tingling to immediate cardiac arrest and death. The seriousness of the injury depends on:

- The amount of current moving through the body
- The path of the current through the body
- How long the body was part of the circuit
- The frequency of the current

The higher the frequency of the current and the longer the body remains as part of the circuit will increase the severity of the injuries. There is another issue when discussing the severity of an electric shock is the difference between immediate and long term injuries. Immediate injuries are just that; they occur at the time that the shock incident occurs. Long term can develop over time; as short as a day and potentially as long as years after the incident. Immediate injuries or symptoms include:

- Unintentional muscle contractions
- Respiratory arrest- the victim is no longer able to breathe
- Cardiac arrest- the victim's heart stops beating
- Tingling to painful sensation
- Disorientation and dizziness

Some of the more common long term injuries can include:

- Memory loss
- Disorders of the nervous system
- Various chemical imbalances
- Permanent damage to the organs of the body

All of these injuries, whether immediate or long term, are very serious and can cause death or at the very least impact an employee's quality of life. The best way to avoid these injuries is to be smart and use your head when working around electricity.

### **Discussion Questions**

What is the main difference between immediate and long term injuries from electric shock?

Why is the human body so prone to becoming part of an electrical circuit?

# MEETING / TRAINING ATTENDANCE ROSTER

COMPANY: \_\_\_\_\_

\_\_\_\_\_ SAFETY MEETING

JOB/DEPT: \_\_\_\_\_

\_\_\_\_\_ SAFETY TRAINING

DATE: \_\_\_/\_\_\_/\_\_\_\_\_

TIME: \_\_\_\_\_

TOPICS ADDRESSED: \_\_\_\_\_

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## EMPLOYEE'S SIGNATURES

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EMPLOYEE SUGGESTIONS AND RECOMMENDATIONS: \_\_\_\_\_

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ACTION TAKEN: \_\_\_\_\_

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Supervisor's Signature

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Date

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Safety Coordinator's Signature

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Date