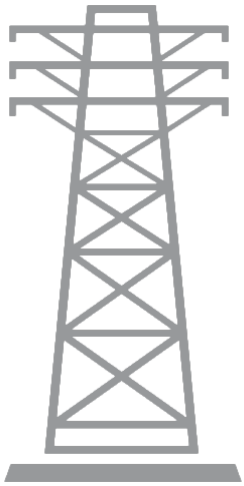
Electrical Safety

Safety Meeting Packet

A wide variety of jobs and industries are required to interact with electricity. From linemen who are working directly on powerlines to office staff who may be at risk due to office construction. Electricity is a notorious workplace hazard that can expose workers to serious injury like electric shock, electrocution, burns, fires, and even explosions. Because of this, electrical safety is an essential component to establishing a safe work environment. The Occupational Safety and Health Administration (OSHA) has created many standards that are designed to protect workers that interact with electricity.

Conductors and Insulators

Substances that offer little resistance to the flow of electric current are called "conductors." Examples of conductors include metals and even the surface of the earth. "Insulators" are substances that slow or stop the flow of electricity. Examples of these include: glass, plastic, clay, and dry wood. Small amounts of impurities in water like salt, acid, solvents, or other materials can turn water and other substances that act as insulators into conductors or better conductors. Therefore, it is very important to be extremely careful when working with electricity in a damp or wet environment.



Electrical Shocks

Sometimes a person's body mistakenly becomes part of an electric circuit and causes an electrical shock. The shock is the result of the body completing the current path. During an electrical shock, electricity flows between parts of the body or through the body to a ground or the earth.

The severity of an electric shock depends on the following:

- amount of current flowing through the body
- current's path through the body
- length of time the body remains in the circuit, and
- current's frequency

A current of 5 milliamperes causes a slight shock, but anywhere from 50 to 150 milliamperes causes extreme pain, respiratory arrest, and severe muscular contractions. Between 1,000 to 10,000 milliamperes can cause cardiac arrest, severe burns, and death.

When an electrical shock causes a person's muscles to contract, it has a "freezing" effect that makes the person unable to pull free. This is very dangerous because it increases the length of exposure and can also cause blisters to form, which further reduces the body's resistance and increases the electric current.

Protection

Employers must determine the best methods to protect workers when they are interacting with electricity. Common protection strategies include: the use of insulation, guarding, grounding, electrical protective devices, and safe work practices.

Safety Guidelines for Electricity

For those employees who consistently complete electrical work, regularly inspecting and maintaining the condition of equipment can prevent fires, electrocutions, burns, and other injuries. Employees should:

- Always inspect power cords, making sure to look for damages like exposed wires, before plugging equipment in.
- Use ground fault circuit interrupters (GFCIs) when using electricity near construction sites, water, or other high-risk areas. GFCIs detect disruptions in the electric circuit and will shut off power when detected.

- Always pull power cords by the plug and not the cord. This will help maintain cords and will prevent a possible accident.
- Use surge protectors in outlets to protect your equipment from high variances in voltage.
- Keep electric equipment away from sources of water. Water is a strong conductor and increases the chance of an electric accident. Workers should also avoid completing work while wet.

For additional information on electrical safety, please see the OSHA standards below:

- 29 CFR 1910.137
- 29 CFR 1910 Subpart S

Dangers at The Jobsite

When working on a jobsite or outside with electric equipment, extra precaution should be taken as more risks are assumed in these conditions. Employees should:

- Use double insulated tools to add extra protection for workers.
- Remain at least 10 feet away from overhead wires and assume any overhead wires are live.
- Turn around and avoid any fallen powerlines if possible.
- Always make sure electrical equipment is grounded. This protects against a buildup of voltages.
- Use circuit breakers to stop circuits with too much electrical currents.
- Wear rubber insulated clothing when working directly with electricity or powerlines.

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Electrical Safety

Safety Meeting Attendance Acknowledgement

Company Name _____

Department / Division _____

Meeting Date & Time _____ _____ ☐ AM ☐ PM

Meeting Location _____

Name & Title of Individual Conducting Meeting _____

Key Meeting Discussion Points / Important Reminders:

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Internal Procedures Reviewed:

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By signing this document, you confirm your attendance at the meeting and acknowledge the issues addressed above!

Employees in Attendance		
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(Sign):	(Sign):	(Sign):
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Employees not present: _____

Suggestions/Recommendations to improve workplace safety and health: _____

Actions Taken: _____

Manager/Supervisor: _____ Date: _____

Disclaimer:

The information provided above was assembled using multiple resources. However, these materials do not contain ALL the information available regarding the required safety standards under local, provincial, state, or federal law for your industry.