

ELECTRICAL SAFETY (ALL OFFICES)

OBJECTIVES

- Staff will learn how to identify electrical hazards
- Staff will learn preventative measures to avoid an electrical shock
- Staff will inspect electrical equipment in their work area

The Department of Labor estimates that there are, on average, 9,600 serious electrical shock and burn injuries each year. They also estimate approximately one fatality per day due to electrocution. Electrocution is the fifth leading cause of death in the workplace.

When used properly, electricity affords us many conveniences, but when used improperly, it could be fatal. Serious injury and death occurs regularly because of improper use of electrical equipment, use of equipment without realizing it was defective, not following safety procedures, or foolishly using equipment known to be defective.

Read this example of not following safety procedures:

This is not a joke. An employee was changing a light bulb. He wasn't sure if the light fixture was working so he inserted his hand in the socket. The employee claimed that he was electrocuted, but he is still breathing. Suffice it to say he received a serious shock.

Many people think "household" voltage, 110-120, which is common in most offices, is not particularly dangerous. **It is!** It's not only giant power lines that can kill or injure you if you contact them. You can also be killed by a shock from an appliance or power cord in your office or job site. It's not the voltage alone that determines the danger; it's a combination of voltage, amperage, resistance to the flow of current, and duration of contact. Electricity must have an uninterrupted path, or circuit to follow. If your body becomes part of the circuit, electricity will pass through you.

You can never tell when contact with electricity will be fatal, but you can be sure it will always hurt. Electric shock can cause muscle spasms, weakness, shallow breathing, rapid pulse, severe burns, unconsciousness, or death. In a shock incident, the path that electric current takes through the body gets very hot. Burns occur all along that path, including the places on the skin where the current enters and leaves the body.

ELECTRICAL SAFETY

There are a few simple things to do to protect you from an electrical accident:

- Never touch exposed electrical wiring; report any exposed wiring to your supervisor.
- Equipment must be properly maintained. Keep equipment clean and dry.
- Make sure that the equipment you use is properly grounded:
 - If an electrical device is grounded; the cord will have a three wire plug and requires a three-way receptacle.
 - Equipment does not need to be grounded if it is double insulated; this equipment will usually be labeled if it is double insulated.
- If equipment needs serving or maintenance, tell your supervisor.
- Avoid the use of extension cords; if an extension cord must be used:
 - Use heavy duty cords.
 - Check for proper grounding, exposed wires, the condition of the cord, plugs, and insulation. If damaged or mashed, do not use it.
 - Remove extension cord once task is completed.
- Always remove cords from receptacles by the plug, never pull the cord.
- Ensure cords are not pinched in doors, drawers, equipment, etc.
- Visually inspect electrical equipment before use; look for:
 - Broken or bent plugs, frayed wires, bare wires, smoke, sparks from switches, liquids spilled on or around equipment, or equipment not operating properly.
 - Periodically inspect office equipment for hazards, e.g., lamps, copy and adding machines, etc.
- Do not try to repair equipment if you are not trained to do so.
- Never attempt to repair or adjust electrical equipment while plugged into a power source.
- Never place electrical equipment or cord near any water source.
- Never operate electrical equipment in wet or damp areas, or with wet hands (wetness, decreases skin resistance and increases the chance of shock).
- Never overload circuits.

- Use Ground Fault Circuit Interrupters (GFCI) with all power tools and when working outside.

LOCKOUT/TAGOUT

- Any powered equipment is potentially dangerous even if it's supposed to be shut down. Many needless accidents occur when someone energized a piece of equipment that somebody else is repairing.
- Follow all lockout/tagout procedures before working on any electrical equipment.

EXTENSION CORDS

- Extension cords, power strips, and surge protectors are increasingly used for electrical devices. To be safe follow these precautions:
 - Make sure these products are UL (Underwriters Laboratories) approved.
 - Do not use extension cord as a replacement for fixed wiring.
 - Do not remove ground prong to fit the plug into a two prong receptacle.
 - Use heavy duty extension cord for high-wattage machines or equipment.
 - Use one long cord instead of several shorter cords; never connect extension cords in series.
 - Use extension cords appropriate for the conditions; indoor and outdoor cords are constructed differently.
 - Never splice or use electrical tape on extension cords.
 - Inspect cords frequently; if a cord is damaged, do not use it.

POLICY

Discuss all policies and procedures relating to electricity and electrical equipment.

CLOSING

- *Encourage discussion about working with electricity, the organization's electrical policy, and past events that caused or could have caused an electrical shock.*
- *Upon completion, staff should inspect all electrical equipment and cords in their work area.*