

High Voltage

All electrical systems have the potential to cause harm.

Dynamic electricity is the uniform motion of electrons (a current) through a conductor. Conductors are materials that allow the movement of electricity.

Most metals are conductors. Your body is also a conductor. Don't be a conductor.



Pause for Safety

- Hazards**
- Electrocutation
 - Electric shock
 - Burns
 - Falls

PPE



Additional PPE



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- Controls**
- Safe work procedure, critical work procedure
 - All exposed workers must have Proper Awareness Training
 - Hazard Assessment
 - PPE
 - Lockout
 - ERP (Emergency Response Plan)
 - Fire Extinguisher



Strategies and Procedures



Injuries can happen in various ways:

- Direct contact with exposed energized conductors or circuit parts.
- Electricity arcs (jumps) from an exposed energized conductor through the air.
- Thermal burns can result from an electric arc from materials set alight by an electric arc flash.
- Contact burns from electrical shock can burn internal tissues while leaving only very small injuries on the outside of the skin.
- Thermal burns from the heat radiated from an electric arc flash.
 - Ultraviolet (UV) and infrared (IR) light emitted from the arc flash can also cause damage to the eyes.
- An arc blast can include a potential pressure wave released from an arc flash.
 - This wave can cause physical injuries, collapse your lungs, or create noise that can damage hearing.
- Muscle contractions, or a startle reaction, can cause a person to fall from a ladder, scaffold or aerial bucket.
 - The fall can cause serious injuries.

High voltage work

- When working under or near High Voltage a spotter is required.
- A hazard assessment must be completed by all involved with the work including sub-Contractors.
- Do not perform direct work on high voltage lines or energized equipment.
 - Such work is to be performed only by utility professionals.
- The utility owner must be contacted before work commences.
- Proper lockout must be used by sub-Contractors working on our high voltage equipment.
 - No high voltage work will be done if proper isolation/lockout cannot be performed.



General electrical safety

- Inspect portable cord-and-plug connected equipment, extension cords, power bars, and electrical fittings for damage or wear before each use.
 - Repair or replace damaged equipment immediately.
- Always tape extension cords to walls or floors when necessary.
 - Nails and staples can damage extension cords causing fire and shock hazards.
- Use extension cords or equipment that is rated for the level of amperage or wattage that you are using.
- Always use the correct size fuse.
 - Replacing a fuse with one of a larger size can cause excessive currents in the wiring and possibly start a fire.
- Be aware that unusually warm or hot outlets may be a sign that unsafe wiring conditions exists.
 - Unplug any cords or extension cords to these outlets and do not use until a qualified electrician has checked the wiring.
- Always use ladders made with non-conductive side rails (e.g., fiberglass) when working with or near electricity or power lines.
- Place halogen lights away from combustible materials such as cloths or curtains.
 - Halogen lamps can become very hot and may be a fire hazard.
- Risk of electric shock is greater in areas that are wet or damp.
 - **Install Ground Fault Circuit Interrupters (GFCIs)** as they will interrupt the electrical circuit before a current sufficient to cause death or serious injury occurs.
- Use a portable in-line Ground Fault Circuit Interrupter (GFCI) if you are not certain that the receptacle you are plugging your extension cord into is GFCI protected.
- Make sure that exposed receptacle boxes are made of non-conductive materials.
- Know where the panel and circuit breakers are located in case of an emergency.
- Label all circuit breakers and fuse boxes clearly.
 - Each switch should be positively identified as to which outlet or appliance it is for.
- Do not use outlets or cords that have exposed wiring.
- Do not use portable cord-and-plug connected power tools with the guards removed.
- Do not block access to panels and circuit breakers or fuse boxes.
- Do not touch a person or electrical apparatus in the event of an electrical accident.
 - Always disconnect the power source first.

