

1 - Avoiding Electrical Accidents: Safety Training

EH&S – MGA

Goals: This safety session should teach you to:

- A. Know what precautions to take to avoid electrical accidents.
- B. Understand that only specific qualified employees may perform certain tasks with exposure to live power.

OSHA Regulations: 29 CFR 1910.331-335

1. Electricity Has the Power to Shock, Burn, and Cause Fires or Explosions

- A. Most electrical equipment has insulated conductors and is grounded to prevent accidents.
 - 1. If you touch equipment that isn't grounded or has defective insulation, your body may conduct the electricity. That can result in shock, which may cause:
 - a. Pain, loss of muscle control, internal damage, cardiac arrest, or death
 - b. Burns to internal body tissue
 - 2. Electrical equipment can also:
 - a. Burn your skin
 - b. Cause fires or explosions if exposed to flammable substances

2. Protect Yourself From Shock

- A. Inspect electrical equipment before use to be sure insulation is in good condition.
- B. Check that plugs have a good, tight connection.
- C. Never bend a 3-pronged plug or force it into a 2-pronged outlet.
- D. Use only wiring that is approved for use in outdoor or wet areas, and plug into ground fault circuit interrupters (GFCIs).
- E. Don't touch anything electrical with wet hands or while in a wet area.
 - 1. Wear rubber gloves and rubber boots as protection.
- F. Don't contact anything electrical with anything metal.
 - 1. Don't wear metal jewelry or a metal hard hat around electricity.
 - 2. Don't use metal tools, including ladders, around electricity.
- G. Use insulated, nonconductive tools around power sources.

3. Prevent Electrical Fires

- A. In areas with flammable liquids, vapors, or combustible dust, use only electrical equipment identified as safe for that use.
 - 1. Be sure equipment doesn't spark or get hot enough to ignite the flammables
- B. Don't overload outlets, circuits, or motors.
- C. Don't let grease, dust, or dirt build up on machinery.
- D. Dispose promptly of oily rags, paper, sawdust, etc. Don't let them contact electric lights or equipment.

4. Obey Restrictions on Electrical Circuit Access

- A. Control panels and circuit breaker/fuse boxes for live electrical parts of 50 volts or more must be in approved cabinets or enclosures, or separate rooms, behind partitions, or at least 8 feet above ground.
 - 1. Obey warning signs and locks; keep out unless authorized.

5. Treat Electrical Equipment With Care and Respect

- A. Don't use cords to raise or lower equipment.
- B. Don't fasten cords with staples, nails, or anything that could damage insulation.
- C. Prevent damage by untangling cords and not running them along the floor or in aisles.
- D. Use extension cords only if necessary and when rated high enough for the job.
- E. Use only waterproof cords outdoors.
- F. Keep machines and tools properly lubricated.
- G. Don't reach blindly into a space that may contain energized equipment.

6. Work on Energized Electrical Equipment Only If Trained and Qualified

- A. OSHA defines qualified workers as those trained to identify exposed live parts and their voltage and know the safety procedures to use with them.
 - 1. Electrical circuits and equipment are usually de-energized and locked or tagged out before being worked on.
 - 2. Only qualified workers can perform tests or other work on "live" parts.
 - 3. If you're not a qualified worker:
 - a. Stay away from energized equipment, and at least 10 feet from power lines.
 - b. Don't try to remove a lock or work on locked out equipment.

Summation: Your Actions Can Help You Avoid Electrical Accidents

Avoid direct contact and take proper precautions to prevent shock, burns, and fires.