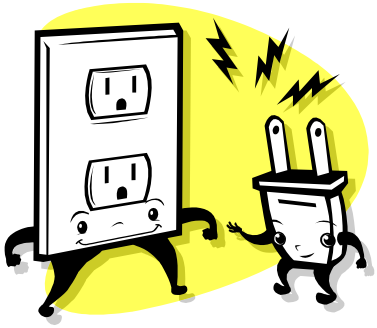

Fact Sheet:
Electrical Hazards and Avoiding Electrical Accidents

Electrical Hazards are a major cause of on-the-job injuries and accidents.

- Safety requires understanding how electricity works and when it's hazardous.

Electrical Current Travels Through Insulated Conductors

- Conductors are the wires and cables that carry electricity from the power plant.
- Conductors are wrapped in insulators—electricity- resistant materials like rubber, plastic, and glass that keep the electric current on its path and prevent accidents.
- Don't use anything electrical that has a missing or frayed cord or wire insulation.

Grounding Connects Electrical Equipment to Earth

- Grounding keeps the power on a low-resistance path and helps protect against shock.
- Most electrical equipment is grounded with metal frames and covers and/or 3-pronged plugs.
- In outdoor or wet area, special electric outlets called ground fault circuit interrupters (GFCIs) provide added protection.
- GFCIs monitor current and are designed to shut off power if an imbalance could cause shock.

Uninsulated or Ungrounded Electrical Equipment Can Cause Shock

- Shock occurs when you touch the ground plus a live wire or poorly insulated tool or machine at the same time.
- When electric current goes through your body, it cause shock and may result in:
  - Pain
  - Loss of muscle control that can lead to falls or contact with powered equipment
  - Nerve, muscle, or tissue damage
  - Internal bleeding
  - Cardiac arrest or death
  - The longer your contact with live power, the greater the shock (especially if the current enters your body near your heart).

Protect Yourself From Shock

- Inspect electrical equipment before use to be sure insulation is in good condition.
- Check that plugs have a good, tight connection.
- Never bend a 3-pronged plug or force it into a 2-pronged outlet.
- Use only wiring that is approved for use in outdoor or wet areas, and plug into ground fault circuit interrupters (GFCIs).
- Water, even moisture in the air, can turn you, your equipment, or even wooden items into conductors.

    - Don't touch anything electrical with wet hands or if standing in a wet area.
    - Wear rubber boots for work in a damp area that contains electrical equipment.
- Don't contact anything electrical with anything metal.
    - Don't wear jewelry or a metal hard hat around electricity.
- Use insulated, nonconductive tools around power sources.

Prevent Electrical Fires

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

Obey Restrictions On Electrical Circuit Access

Control panels and circuit breaker/ fuse boxes for live electrical parts of 50 volts or more must be in approved cabinets or enclosures or in separate rooms or behind partitions or at least 8 feet above ground.

- Obey warning signs and locks; keep out unless authorized.

Treat Electrical Equipment with Care and Respect

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

Work on Energized Electrical Equipment Only If Trained and Qualified

OSHA defines ***qualified workers*** as those trained to identify expose live parts and their voltage and know the safety procedures to use with them.

- Electrical circuits and equipment are usually de-energized and locked or tagged out before being worked on.
- Only qualified workers can perform tests or other work on "live" parts.
- If you are ***not*** a qualified worker:
    - Stay away from energized equipment, and at least 10 feet from power lines.
    - Don't try to remove a lock or work on locked out equipment.

Conclusion

Be aware of electrical hazards. Your actions can help you avoid electrical accidents.