6 Typical Electrical Hazards in the Workplace

Safety Talk

What’s At Stake

Electrical shock is a leading cause of workplace fatalities and almost every day approximately one electrocution, 10 disabling injuries and 100 electrical shocks are reported.

What’s The Danger

There are four main electricity-related injuries:
1. Electrocution;
2. Shock, which is caused when contact is made with a live wire or equipment that is not grounded, allowing the current to flow through the body;
3. Electrical burns, one of the most serious, painful and disfiguring of all burns. They typically occur on hands and feet where the current enters and exits the body; and
4. Secondary injuries, which typically result from the effects of shock, such as being thrown to the ground or off of a ladder, causing indirect injuries.

Example

An appliance repairman was electrocuted when he was testing a defective washing machine. He was running the machine to determine the problem before attempting repairs. He had one hand on the control dial and the other hand on a water faucet at a sink next to the machine. It appears the wiring in the washing machine had been damaged during an earlier attempt at repairs. This defect in the wiring caused the control dial to be energized. Touching the faucet provided a path to ground, electrocuting the repairman.

How To Protect Yourself

To reduce your risk of electrical injury, it’s important to understand the many electrical hazards that can exist in a workplace. These are among the most common:

1. Inadequate wiring. This hazard exists when a conductor is too small to safely carry the current flowing through it, such as using a portable tool with an extension cord that has a wire too small for the tool. The tool will draw more current than the cord can handle, causing overheating and a possible fire.

2. Overloads. If too many devices are plugged into a circuit, the current will heat the wires to a very high temperature, which may cause a fire. If the wire insulation melts, arcing may occur and cause a fire in the area where the overload exists, even inside a wall.

3. Ground faults. Electrical currents flow in a circuit. If there is a fault—opening—in the circuit and the circuit is not grounded, a person can become part of the circuit by touching a wire or holding the energized equipment, such as an electric drill.

4. Overhead power lines. Most people don’t realize that overhead power lines are usually not insulated.

5. Live parts. Some electrical equipment is “live,” meaning you can come into direct contact with the current. These should be guarded against accidental contact, with entrances marked with conspicuous warning signs.

6. Inappropriate use of temporary wiring. Temporary wiring is more susceptible to being damaged than fixed wiring due to aging, rough edges near doors and windows, staples or fastenings used to hold it in place, abrasion from adjacent materials, and activities in the nearby area. Improper use of flexible cords can cause shocks, burns or fire.

Final Word

Electrical repairs should be carried out only by persons who are qualified and authorized to do so. However, it’s everyone’s job to be alert to potential hazards and to report problem areas

immediately so that they can be repaired.