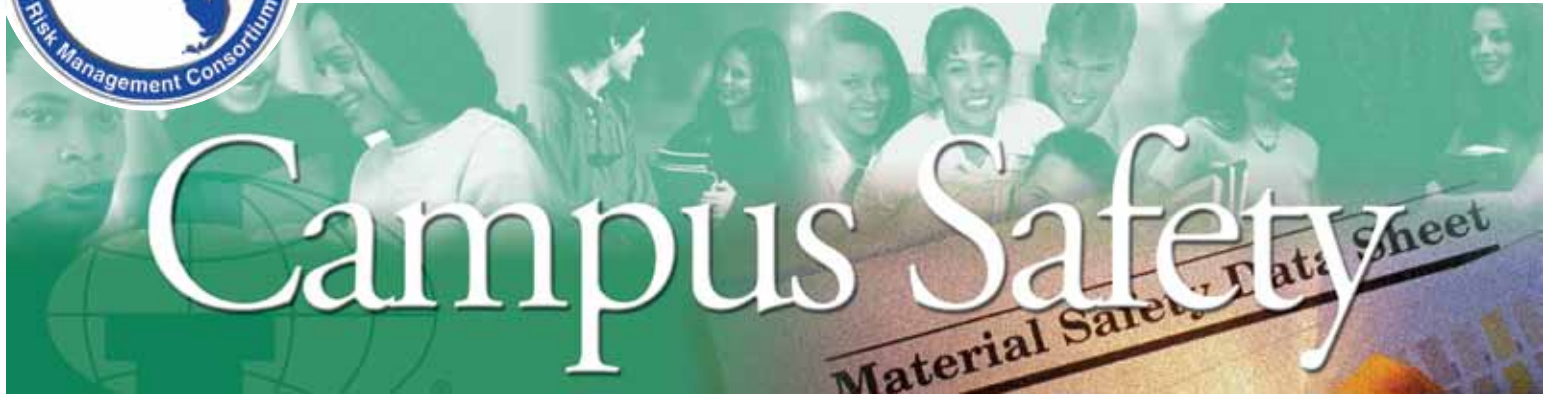




Florida College System Risk Management Consortium



Controlling Electrical Hazards

The Bureau of Labor Statistics reported in 2008: 192 workplace-related fatalities relate to electrocutions. Additionally, 102 workplace-related fatalities related to contact with overhead power lines occurred in 2008. The Occupational Safety Health Administration in 2008 identified electrical wiring as the number 6th leading violation, cited at 3,079 violations, and electrical work hazards as the 9th most cited violation, with 2,556 violations cited.

The unacceptable workplace fatality data and the number of cited workplace violations support the need to control electrical work hazards. We need to prevent electrical accidents by understanding the potential risk involved in working directly or indirectly with electricity and take preventive steps to safely work with electricity—and avoid needless injuries and fatalities.

Electricity travels in closed circuits and the general route is through a conductor (wiring, etc). A shock occurs when the body becomes part of the electrical circuit and exits the body. A shock can occur by coming in contact with either the wires of an electrical circuit (ground wire and energized wire) or the metallic part that becomes energized (hot) from being in contact with a live wire while a person has contact with the ground. The metallic part can be energized as a result of a break in the electrical insulation of wiring, or a break in the wiring of a machine or equipment that caused it to be energized. This is why it is important to inspect tools, machinery and/or extension cords for wiring breaks.

Safe Practices to Consider

- Respect electricity and understand that it can cause serious burns and death. Respecting electricity starts by understanding and knowing how to use safe practices. If

you are not trained to work with electricity, recruit someone who is—preferably a licensed electrician.

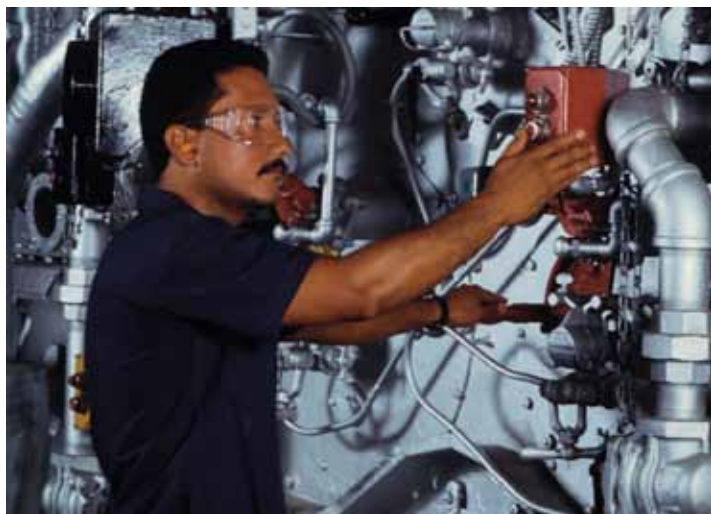
- Energized components of electrical equipment need to be guarded against accidental contact. Displaying warning signs of indoor electrical installation is important, as well as keeping electrical rooms locked at all times and allowing only authorized personnel to have access.
- Secondary safe practices begin with grounding equipment, tools and machinery. There are mechanical devices, such as ground-fault circuit interrupters (GFCI), circuit breakers and other electrical safety standards, that need to be provided as secondary means to protect workers.
- Facility maintenance personnel and any employees working near electricity need to:
 - » Know how to de-energize the line.
 - » Ensure that the line remains de-energized by lockout/tag-out procedures.
 - » Use insulated equipment (rubber insulating gloves, mats, blankets, etc.) to protect against accidental contact.
 - » Keep a safe distance from energized lines (ladders away from service drops or electrical systems).

General Safety Rules

- Use only wood or fiberglass ladders when working around electricity.



Campus Safety



- Label all electrical disconnects showing source and load.
- Clearly mark all electrical distribution panels as to what they service or energize. Recommend labeling outlets to correspond to the electrical distribution panel.
- Do not store items in front of electrical panels or transformers. Keep a minimum of a 3-foot clearance around the entire panel area, including above, front and sides of panels.
- Avoid wearing rings, metallic watchbands, etc., when working with electrical equipment or heating equipment.
- Wear safety glasses (and dielectric face shields) around energized equipment in case sparks or arcs occur.
- Never handle electrical equipment if your hands, feet or body are wet or perspiring, or when you are on a wet/damp floor.
- Use rubberized insulating matting on the floor in front of switchgear, large electrical panels, to improve safety.
- All energized machinery or tools need to be grounded. Use GFCI whenever working outdoors or where any water exists. Using GFCI extension cords is a good safe practice to protect workers.
- Avoid storing flammable liquids near electrical equipment.
- When operating a circuit breaker: use one hand, stand to the side of the panel face away, and make sure equipment can be energized before closing breaker.

- When you experience electrical trips (open circuit)—when a circuit breaker shuts off the flow of electricity—there is something that caused this action. These mechanical devices are in a circuit that monitors the amount of current and are used primarily to protect conductor and equipment, so it is important that you determine what caused the problem.
- Periodically inspect power tools, cords, plugs, and watch for sparks or arcing. Stand on dry, insulated floors and check on/off switches.
- Use GFCI and weatherproof receptacles for outdoors and any areas subjected to the outside environment, such as an electrical outlet next to open, overhead doors.
- Electrical equipment must meet the National Electrical Code. Periodic inspection is recommended by a licensed (master level preferred) electrician.
- Each location should consider having an infrared (IR) survey of the major electrical system to determine its condition. This can protect equipment, reduce loss of energy (electrical cost increase) and prevent electrical fires. It is reported that over 40,000 electrical fires occurred.

In closing, it is important to use safe practices to avoid property damage and injuries when working around electricity.

