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Weekly Safety Meeting

Ground Fault Circuit Interrupters (GFCI)

Let's talk about the most common electrical shock hazard--ground faults.

Ground Faults

A ground fault can cause severe electrical shock or electrocution. In normal conditions, electricity runs in a closed circuit; Electricity flows out on the "hot" wire and returns on the "neutral" wire, completing the circuit. A ground fault occurs when the electrical current does not complete its circuit and unintentionally flows to the ground. Ground faults can cause fires and are dangerous when they flow through a person to the ground.

A ground fault shock happens when a person comes into contact with the "hot" side of an electrical circuit (example, with wet hands, or while standing in water or on a wet floor).

GFCIs

GFCIs monitor the current between two circuit conductors, which is the amount of current going to and away from an electrical device. If the GFCI detects or senses a difference or change in current, or "leakage" known as a "ground fault," the GFCI shuts off, "trips, or breaks," the circuit stopping the flow of electricity immediately, thereby protecting a worker from a potentially dangerous shock.

GFCIs do not protect workers from line contact hazards (i.e., a person holding two "hot" wires, a hot and a neutral wire in each hand, or contacting an overhead power line).

Although most portable electric tools have an equipment-grounding conductor and many are double insulated, these methods are not foolproof. A grounding wire could break, or a cord could become defective. Using a GFCI overcomes these insulation problems.

One disadvantage of this protection is that it is sometimes overly sensitive to moisture and humidity. On rainy or damp days, the GFCI units will occasionally cause what is called "nuisance" tripping. The temptation then is to by-pass the GFCI to get on with our work. This is not only unwise, but a violation of OSHA standards. OSHA requires GFCI protection on all 120-volt, single-phase, 15- and 20-ampere circuits on work sites that are not part of the permanent wiring of the building or structure.

Remember:

- Be sure that all temporary wiring is installed complete with GFCI protection.
- Do not let anyone tamper with or by-pass the GFCI unit.
- To minimize nuisance tripping, keep cords out of water and use watertight or seal connectors where possible.

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- GFCIs must be placed as close to the power source as possible.
- Test GFCI before use.

Inspections:

Visual inspection of the following equipment is required:

- Cord sets;
- Cap, plug, and receptacle of cord sets; and
- Equipment connected by cord and plug.

GFCI Inspections should look for external defects such as deformed or missing pins, insulation damage, and indications of internal damage. Damaged or defective equipment should not be used until repaired. Additional inspections are required if an outlet is returned to service following repairs and after any incident which can be reasonably suspected to have caused damage (for example, when a cord set is run over).

Testing:

GFCIs have test and reset buttons for a reason; a competent person should conduct at least monthly tests and visual inspections and they should be tested and inspected before each day's use. Records of the competent person's testing must be kept.

Always make sure the tools and cords you use are in good working condition and inspect them regularly for any visible damage. Failure in the insulation or grounding protection of your tools or cords could result in ground faults. Use GFCI devices. Take a little extra care so that you will not have a SHOCKING experience.

PROTECT YOURSELF FROM ELECTRICAL SHOCKS...USE SAFE EQUIPMENT!

Safety Meeting Sign-In Sheet

Supervisor:	Subject:
Location:	Date:
Conducted By:	Trainer Signature:

Name (print clearly)	Signature	Comments / Safety Concerns / Training Requests