

Worksite: _____ Instructor: _____ Date/Time: _____

Topic C031: Electrical Safety

Introduction: The most common electrical hazard in today's workplace is from ground fault electrical shock. Electrical accidents are usually caused by unsafe equipment and/or installation, unsafe workplaces caused by environmental factors, and unsafe work practices.

In order to reduce electrical shock-related injuries, remember to follow lockout, blockout, tagout procedures while repairing, or working in an area with an energized source.

Appropriate training ensures that workers recognize electrical hazards and use safe work practices to control or eliminate those hazards. Only "qualified" persons can work directly with exposed energized parts and should be familiar with the inherent hazards of electricity such as high voltages, electric current, arcing, grounding, and the lack of guarding. Things to keep in mind are::

Personal protective equipment: When employees work where there are potential electrical hazards, they must be provided with electrical protective equipment. Workers must use equipment appropriate for the work being done and the body parts needing protection.

Tools: To maximize his or her own safety, an employee should always use tools that are insulated and work properly. Tools must be inspected before use, and if found faulty or questionable, properly tagged and removed from service. Tools that are used by employees to handle energized conductors must be designed and constructed to withstand the voltages and stresses to which they are exposed.

Circuit over-current protection devices: Circuit protective devices, such as fuses, circuit breakers, and GFCIs, automatically limit or shut off current flow in the event of a ground-fault, overload, or short circuit in a wiring system. They prevent overheating of wires and components that could create hazards for workers.

Grounding is required to protect employees from electrical shock, to safeguard against fire, and to protect against damage to electrical equipment. There are two kinds of grounding: **Service or system ground:** one wire, the neutral conductor, is grounded. This type of ground is designed to protect machines, tools, and insulation; **Equipment ground:** provides a path for current from a tool or machine to ground. This safeguards workers in the event of an electrical malfunction.

Guarding: Any "live" parts of electrical equipment operating at 50 volts or more must be guarded to avoid accidental contact. Entrances to areas with "live" electrical parts must be marked with warning signs. The signs should forbid entrance except by qualified persons.

Insulation: Employees should check their equipment daily for insulation breakdown such as broken or exposed wires and damaged insulation on extension cords. Electrical conductor insulation must be suitable for the voltage and conditions under which the item will be used.

Underground and overhead lines: When the exact location of underground lines are unknown, employees using jackhammers or hand tools that may contact a line must be provided with insulated protective gloves. If work is to be done near overhead power lines, the lines must be de-energized and grounded or other protective measures must be provided before work is started. Unqualified employees and mechanical equipment must stay at least 10 feet away from overhead power lines.

Conclusion: Electricity travels in open circuits, and its normal route is through a conductor. The severity of the shock received is affected by three primary factors: the amount of current, the path of the current, and the length of time the body is in the circuit. It is important to be well-trained in the recognition of electrical hazards and how to eliminate or protect yourself from them.

Employee Attendance: (Names or signatures of personnel who are attending this meeting)

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_____	_____	_____
_____	_____	_____
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These guidelines do not supersede local, state, or federal regulations and must not be construed as a substitute for, or legal interpretation of, any OSHA regulations.