



Minnesota Electrical Association

Electrical

Toolbox Talks

Controlling Electrical Hazards

Employees must be aware of and employer will train them about the electrical hazards to which they will be exposed. Maintenance employees should be qualified electricians who have been well instructed in lockout and tagging procedures.

Insulation

Before employees prepare to work with electric equipment, check the insulation before making a connection to a power source to be sure there are no exposed wires. The insulation of flexible cords, such as extension cords, is particularly vulnerable to damage.

Circuit conductors must be insulated to prevent people from coming into accidental contact with the current. The insulation will be suitable for the voltage and existing conditions such as temperature, moisture, oil, gasoline, or corrosive fumes. All factors must be evaluated before a proper insulation choice is made.

Guarding

Live parts of electric equipment operating at 50 volts or more must be guarded against accidental contact. Employer will guard live parts by:

- locating in a room, vault, or similar enclosure accessible only to qualified people;
- using permanent, substantial partitions or screens to exclude unqualified people;
- locating on a suitable balcony, gallery or platform elevated and arranged to exclude unqualified persons; or
- elevating 8 feet or more above the floor.

Employer will mark entrances to rooms and other guarded locations containing exposed live parts with conspicuous warning signs forbidding unqualified people to enter.

Indoor electric installations that are over 600 volts and are open to unqualified people must be made with metal-enclosed equipment or enclosed in a vault or area controlled by a lock. Equipment must be marked with appropriate caution signs.

Grounding

Employer will make sure that all appropriate workers understand grounding and how to check for it and acquire it. Employees with any doubts will contact supervisor immediately.

Grounding is normally a secondary protective measure that creates a low-resistance path to the earth and substantially reduces the possibility of accidents when used in combination with other safety measures.

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(continued)

A “service or system ground,” where a “neutral or grounded conductor” is grounded at the generator or transformer and again at the service entrance is the building, is primarily designed to protect machines, tools and insulation against damage.

An “equipment ground” must be provided for further protection to workers by providing another path from the tool or machine through which the current can flow.

Circuit Protection Devices

Automatic circuit protection devices such as fuses, circuit breakers (used primarily for the protection of conductors and equipment) and ground-fault circuit interrupters (GFCI) (used in high-risk areas such as wet locations and construction sites) are used in case of a ground-fault overload.

Overhead Lines

If work is to be done near overhead power lines, the lines must be de-energized and grounded by the owner or operator of the lines, or other protective measures (such as guarding or insulating the lines) must be provided before work is started.

Unqualified employees and mechanical equipment must stay at least 10 feet away from overhead power lines. If the voltage is over 50,000, clearance should be at least 4 inches for each additional 10,000 volts.

When mechanical equipment is being operated near overhead lines, employees standing on the ground may not contact the equipment unless it is located so that the required clearance cannot be violated even at maximum reach of the equipment.

Employees who work constantly and directly with electricity must use the personal protective equipment required for the jobs they perform. This equipment may consist of rubber insulating gloves, hoods, sleeves, matting, blankets, line hose, and industrial protective helmets.

Employees must use tools that are designed and constructed to withstand the voltages and stresses to which they are exposed when handling energized conductors.

When work is performed around energized lines, employees will follow these basic procedures:

- Have the line de-energized.
- Ensure that the line remains de-energized by using some type of lockout and tagging procedure.
- Use insulated protective equipment.
- Keep a safe distance from energized lines.

Notes: For more information see OSHA 29 CFR 1910.178 and 1910.331-335, manufacturer’s guidelines, a competent safety professional or the OSHA Consulting office.

These rules are samples only. Each employee is responsible for working with his/her employees to write rules that meet the specific needs of their individual company and type of work. Each employer is responsible for assessing the accuracy of their rules and keeping them up to date. OSHA requires a minimum of an update and employee re-training annually.