

New electrical regs

They're already in force

Effective April 1, 2006, sections 181-195 of the Construction Regulation have been revised. The following are some of the changes.

Qualifications for electrical work

The revised regulation states that only workers who are in the process of becoming certified or already carry a certificate of qualification can connect, maintain, or modify electrical equipment or installations. More specifically, you must

- ✓ be an electrician certified under the *Trades Qualification and Apprenticeship Act*, OR
- ✓ be otherwise permitted to connect, maintain, or modify electrical equipment or installations under the *Trades Qualification and Apprenticeship Act*, the *Apprenticeship and Certification Act, 1998*, or the *Technical Standards and Safety Act, 2000*.

Workers that don't meet either of these requirements may still insert a plug into, or remove it from, a convenience receptacle.

Operating equipment near powerlines

When equipment can encroach on the permitted minimum distances from powerlines the constructor must have written procedures in place to prevent this from occurring. Copies of the procedures must be available for every employer on the project. The employer must provide, and explain, the procedures to the equipment operator before the operator starts work.

These conditions don't apply if protective devices and equipment are installed under the authority of the owner of the electrical conductor and written procedures are implemented adequate to protect the operator from electrical shock and burn.

Working on locked-out equipment

De-energizing, locking out, and tagging are the first line of defence before work is done on or near exposed energized electrical equipment.

Employers must

- ❑ establish and implement written procedures to ensure that workers are adequately protected from electrical shock and burn, and

- ❑ have a copy of the written procedures available for workers on the project.

Locking out de-energized conductors or equipment is not required if the devices were manufactured without provision for a locking device. But a written procedure must ensure that the circuit cannot be inadvertently energized:

- ❑ In the case of a conductor, it must be adequately grounded with a visible grounding mechanism.
- ❑ In the case of equipment with a power supply of 300 or more volts but not more than 600 volts, the work must be supervised by a competent worker to ensure that the circuit is not inadvertently energized.

Working on or near live equipment

Working on or near live equipment is only permitted when

- it is not reasonably possible to disconnect the equipment, installation, or conductor from the power supply
- the equipment is rated at a nominal voltage of 600 volts or less, and disconnecting the equipment would create a greater hazard to workers

than proceeding without disconnecting it

- the work consists only of diagnostic testing.

The constructor must ensure that written procedures for work on or near live equipment are established and implemented to protect workers from electrical shock and burn and must have copies of the procedures available for employers on the project.

The employer must provide, and explain, the written procedures to workers before they start work on or near live equipment.

Unless the work consists only of diagnostic testing or involves a nominal voltage under 300 volts, an adequately equipped competent worker who can perform rescue operations, including cardiopulmonary resuscitation, must be stationed where he or she can see the worker(s) performing the live work.

Live work on equipment nominally rated greater than 400 amperes and greater than 200 volts, or greater than 200 amperes and greater than 300 volts, can only be done if

- 1) the owner of the equipment provides the employer and the constructor with a record showing that it has been maintained according to the manufacturer's specifications
- 2) a copy of the maintenance record is readily available at the project
- 3) the employer has determined from the maintenance record that work on the equipment



- can be performed safely without disconnecting it, and
- 4) before beginning live work, the worker has verified that points 1), 2), and 3) have been complied with.

Tools and equipment for live work

Tools, devices, and equipment, including personal protective equipment, used for live work must be designed, tested, maintained, and used so as to provide adequate protection for workers.

A worker exposed to the hazard of electrical shock must wear rubber gloves certified and tested for working live. The gloves must be

- ❑ adequate to protect the worker against electrical shock and burn
- ❑ air-tested and visually inspected for damage and adequacy immediately before each use.

Unless work is carried out under the *Electrical Utility Safety Rules*, Class 0 and Class 00 gloves are now exempt from regular re-certification. Rubber gloves rated for use with voltages above 5,000 volts AC must be tested and certified to ensure that they can withstand the voltages for which they are rated

- at least once every three months if they are in service, or

Continued on page 10 . . .

...continued from page 9.

- once every six months, if they are not in service.

Workers must be trained in the proper use, care, and storage of rubber gloves and leather protectors.

Extension cords

All extension cords used at a project require a grounding conductor and at least two other conductors.

Polarized tools and GFCIs

All cord connections to electrical tools and equipment must be polarized unless the tools and equipment are double-insulated. Two-pronged polarized tools can be identified by one prong being larger than the other.

Portable electrical tools used outdoors or in wet locations must be plugged into

- a receptacle protected by a ground fault circuit interrupter (GFCI) of the Class A type, or
- a Class A type GFCI located in the cord feeding the tool, as close to the tool as possible, when the source of power is an ungrounded portable generator having a maximum output of 1.8 kilowatts or less.

Note: The Electrical Safety Authority (ESA) does not permit ungrounded generators to be used as a stand-alone electrical supply for the operation of portable electrical equipment.

Exemptions

Exemptions from some regulated requirements are possible if work on electrical transmission or distribution systems is performed in accordance with the *Electrical Utility Safety Rules* published by the Electrical and Utilities Safety Association of Ontario (August 2004).

For complete information on these and other requirements, see sections 181-195 of the Construction Regulation. Go to www.csa.org and click on the green book. Click on "Contents" and choose the Regulations for Construction Projects. Go to Part II, General Construction, and scroll down to Electrical Hazards. ■



Anywhere, Anytime

Graff
CONCRETE CUTTING SERVICES

1-888-457-8120
www.graffconcrete.com

TORONTO LONDON HAMILTON



7 deaths from injury in 2006

MOL stats as of 24 March 2006

Cause	Month	Sector	Age	Description
Fall	January	Low-rise residential	23	Shingler fell 22 ft from residential roof.
Fall	February	Low-rise residential	54	Self-employed electrician working on ladder fell 20 ft.
Fall	March	Low-rise commercial	47	Owner fell 23 ft after bucket of boom truck tipped.
Crushed	March	Road construction	45	Truck driver unloading gravel was buried when load shifted.
Drowning	January	Road construction	56	Heavy equipment operator building winter road drowned after crawler-dozer fell through ice.
Electrocution	January	Heavy industrial	39	Insulator installing insulation around 120-volt lines made contact and was electrocuted.
Struck by	February	Industrial	60	Piece of wooden structure used to position pipe in trench failed and struck worker's head.

FINES

Director fined—H&S policy & program

A Guelph-based company that installs steel roof shingles was fined \$50,000 and a director was fined \$2,500 for violations of the *Occupational Health and Safety Act*.

\$50,000

In 2004, a worker helping to install a new steel roof disconnected a lifeline to move to another location. Before he could reconnect the lifeline, his foot got caught underneath some strapping and he lost balance. He fell, suffering lacerations and breaking bones and teeth.

\$2,500

The firm pleaded guilty to failing to ensure that the worker wore a lifeline. A company director pleaded guilty to failing to ensure that the company prepared and reviewed at least annually a written occupational health and safety policy and developed and maintained a program to implement that policy.

Constructor fined despite subs

A London-based contractor was fined \$50,000 for a violation that resulted in serious injuries to a young worker.

\$50,000

In 2004, a worker installing flooring in a partially-built house fell more than 11 feet from the second storey to the concrete garage floor, breaking both wrists and a facial bone. A Ministry of Labour investigation found that the worker was not protected from a fall.

The worker was employed by a house framing company, subcontractor to a homebuilding company. The homebuilder in turn was a subcontractor to the project's constructor. Following a trial, the *constructor* was found guilty of failing to ensure that the worker was protected from falling.