HEALTH & SAFETY ADVISORY

Requirements for working on live electrical equipment

The Ontario Ministry of Labour, Immigration, Training and Skills Development (MLITSD) does not consider the disruption of normal building operations, increased expenses associated with providing temporary power, or inconveniencing the client, to be acceptable reasons to say "it is not reasonably possible" to de-energize the system (see Point 2 below).

If your work is part of a routine or major maintenance shutdown, it is reasonably possible to disconnect the equipment.

Whoever determines that "it is not reasonably possible" to de-energize the system must be able to provide the reasoning for the decision and explain why the work must be performed in an energized condition.

If the work involves diagnostic testing, it is important to de-energize and lock out the equipment once the testing is completed before doing any repair work (refer to O. Reg. 213/91 s. 190 for lock-out and tagging).

The following are the only circumstances in which working on or near exposed energized parts of electrical equipment is permitted, according to O. Reg. 213/91 s. 191:

1. When diagnostic testing needs to be carried out
2. When it is not reasonably possible to disconnect the equipment, installation, or conductor from the power supply before working on or near the exposed energized parts
3. When the equipment, installation, or conductor is rated at 600 volts or less, and if disconnecting the power would put workers in more danger than leaving it connected

See O. Reg. 213/91 s. 191 for additional requirements that may apply to working live.

The *Occupational Health and Safety Act* requires employers to take every precaution reasonable in the circumstances to protect the health and safety of workers. In situations where working on or near energized equipment is permitted, the employer must protect workers by ensuring the following steps are taken:

- Conducting an assessment to identify the hazards
- Determining and implementing measures and procedures to protect the worker from the hazards
- Ensuring that workers have adequate training to carry out those measures and procedures (see O. Reg. 213/91 s. 182)
- Ensuring that workers have the required personal protective equipment (PPE) and adequate training to use it. For Ontario requirements, refer to CSA Z462, *Workplace electrical safety* standard

When choosing the appropriate PPE for working on energized electrical equipment, you need to assess the potential for both electric shock and arc flash.

Fused leads provide additional protection in case of accidental misuse of a multimeter or metre failure. Multimeters used in testing must bear the CSA logo, and for under 1000V, the correct CAT I through IV multimeter must be selected (refer to the ECAO/ IBEW Trade Safety Advisory).

There are other requirements for work around or near electrical hazards. These can be found under *Electrical Hazards* in O. Reg. 213/91 s. 181.

This advisory was developed by the Infrastructure Health and Safety Association (IHSA).