

Electrical Safety: Protecting your People and Investments

The Electrical Safety Authority describes Compliance Requirements and Steps for Due Diligence

Without awareness and compliance to the Electrical Code, electricity has the potential to be the single most dangerous force where we live, work and play. This is primarily because the public takes electricity for granted, unaware of its inherent dangers. Few people realize the hazards that electrical equipment and wiring pose when improperly installed. As a facility owner or manager, it is your responsibility to ensure that everyone entering your facility is safe from these hazards, whether your facility is an industrial, institutional, office, residential, or recreational building.

What is the Electrical Code?

The Canadian Electrical Code (CE Code) sets out rules by which everyone in Canada must, by law, adhere to when working with electricity or installing and maintaining electrical equipment. Some Provinces make their own revisions to the CE Code, which, again by law, must be adhered to in that Province. In Ontario, the Ontario Electrical Safety code (OESC) governs all electrical work and equipment. The OESC is subject to updates and improvements through regular bulletins and is published every four years as a new volume including all interim updates. At the time of this printing, everyone in Ontario must use the 24th Edition of the OESC for any electrical work.

Who is the Electrical Safety Authority?

The Electrical Safety Authority (ESA) is the agency responsible for overseeing electrical safety in Ontario through inspections and services. ESA has taken on this responsibility since April 1999, when Ontario Hydro was dissolved. As such, ESA must play a vital role in making the public more aware. Today, ESA is recognized around the world as a leader in safety and inspection excellence.

What are the steps to ensuring compliance and due diligence?

Step 1; be aware. By law, everyone who owns, operates, maintains or installs electrical power systems and equipment is responsible for ensuring compliance with the Electrical Code. This liability cannot be transferred. By following these rules, businesses are reducing risks to their people, the public and their investments. The OESC provides standards that ensure safe electrical installations and work, safe electrical equipment, and safe electrical practices.

Step 2; ensure safe electrical work. The OESC apply to all new construction, renovation, and maintenance of electrical installations and equipment in Ontario. All electrical work must be filed for any electrical work done in your facility. This includes requirements for:

- installing electrical parts and components,
- installing new electric equipment,
- performing routine maintenance, and
- upgrading electrical service.

Step 3; ensure safe electrical equipment. The Electrical Code stipulates that all electrical equipment sold or used in Canada must be approved by a recognized certification agency. Unapproved electrical equipment may contain substandard parts, materials and/or workmanship that expose your people and business to electrical shock and fire hazards. In spite of controls and monitoring, unapproved equipment still makes it to store shelves, factory floors, offices and homes. Do not assume that your supplier or contractor has provided approved equipment. Know that your own people can recognize approval information.

What are the consequences of non-compliance?

There are legal penalties for failing to comply with the Electrical Code. More importantly, compliance helps you keep workers and occupants safe in your facilities, and also supports you in demonstrating your safety due diligence. Furthermore, a compliant business benefits from:

- improved operation,
- less downtime,
- fewer interruptions caused by equipment failures,
- less worker absence due to accidents
- a lower risk of liability in the event of an accident, and
- good employee and customer service

How can ESA help you?

ESA wants to help maximize the safety of everyone by helping property owners and managers improve safety in their facilities. By increasing your understanding of the role you have in ensuring electrical safety, and by offering advice on how compliance and due diligence can be made easier and more cost effective, ESA is bridging the gaps in electrical safety knowledge. There are numerous ways ESA can help you take the steps described above.

Technical Advice: ESA can supply copies of the OESC and related bulletins, and answer questions about the Electrical Code. Remember, in Ontario you should be using the most up to date version of the OESC in order to be compliant.

Continuous Safety Services: ESA is the recognized authority for inspecting electrical installations in Ontario to ensure they comply with the Code. To meet the needs of facility owners and managers in simplifying and managing electrical inspections, ESA introduced optional Continuous Safety Services (CSS) for Commercial and Industrial customers in 1996. A properly implemented CSS program tracks and records electrical work, simplifies the inspection process and recognizes the unique needs of these customers for ensuring safe work places, and demonstrating due diligence. In addition, CSS reduces the costs of permits and inspections for ongoing, routine maintenance in any type of facility. The program provides regular contact with our inspectors for advice on code interpretation and places the most up to date information on electrical hazards at your fingertips.

If you have any questions on how to implement a Continuous Safety Services program in your facility please contact **Judy Smith** at:

Phone: 416-991-4149, Fax: 905-712-7886, e-mail: judy.smith@electricalsafety.on.ca

Electrical Product Approvals: ESA is one of several recognized agencies for approval of electrical equipment for use or sale in Ontario. Whether equipment is being installed in your facility or being made for you anywhere else in the world for use in Ontario, ESA can provide product approval services as well as a list of other, recognized approval agencies.

Electrical Safety Training: Meeting the requirements of the Ontario Electrical Safety code and demonstrating that you have taken initiative to keep staff and occupants safe from electrical hazards can support you in proving due diligence. ESA offers seminars and training courses that range from more common workplace safety training for everyone, to very technical courses for electricians and maintenance staff. For example, one of our most successful programs for commercial, industrial, office, and institutional facilities in our “**Electrical Safety Basics**” seminar. This seminar helps everyone in your organization understand how to work safely with electricity and recognize unexpected hazards. We are constantly striving for improvements and valuable additions to these programs.

Key Regulations from O.E.S.C. 24th Edition:

2-003 Record of Electrical Installation Work

The owner, owner’s agent, or operator shall maintain a record of all electrical installation acceptable to the inspection department in any public building, commercial or industrial establishment, apartment house, or other building in which the public safety may be involved, and shall produce this record to any inspector at any time and from time to time upon request, as specified by the Inspection Department.

2-004 Inspection

1. A *contractor*¹ shall file with the inspection department a completed application for inspection of any work on an *electrical installation*².
 - a) Before or within 48 hours after commencement of the work whether or not electrical power or energy has been previously supplied to the land, building or premises on which the work was performed; and
 - b) Shall pay the fees prescribed by the inspection department

¹ Contractor means any person who as principal, servant, or agent, by himself or herself or by associates, employees, servants or agents performs or engages to perform either for his or her own use and benefit or for that another and for or without remuneration or gain any work with respect to any electrical installation or any other work to which this Code (ie OESC) applies.

² Electrical installation means the installation of any wiring in or upon any land, building, or premises from the point or points where electrical power or energy can be supplied from any source, to the point or points where such power or energy can be used therein or thereon by any electrical equipment and shall include the connection of any such wiring with any of the said equipment, and any part of the wiring aforesaid, and shall also include the maintenance, alteration, extension, and repair of such wiring.

2-006 Periodic Inspection

1. An application for inspection may be made by the owner, owner's agent or occupant of any manufacturing, mercantile, or other building where electrical installation work of a routine nature in connection with the maintenance or operation of the building or the plant therein is required to be performed at frequent intervals.
2. Acceptance of the application by the inspection department shall authorize the commencement and carrying out of such work during the period for which the acceptance is issued and Rule 2-004 does not apply.

2-007 Reporting of Serious Electrical Incidents

1. An owner, contractor or operator of a facility shall report to the Inspection Department any serious electrical incident of which it is aware within forty-eight hours after the occurrence.
2. No person shall, except in the interests of public safety, saving life, relieving human suffering, continuity of service or preservation of property, interfere with or disturb any wrecking, article or thing be carried away or destroyed by any person unless permission so to do is given by an inspector.

2-024 Approval of Electrical Equipment

1. Subject to the other provisions of this Rule, electrical equipment is deemed to be approved if:
 - a) A certification organization has issued a report certifying that the equipment conforms to the applicable standards for the equipment;
 - b) The report referred to in the clause (a) is available to the Inspection Department from the certification organization;
 - c) The equipment complies with all standards of design and construction and all terms and conditions set out in the report; and
 - d) The equipment bears the certification organization's mark which identifies equipment certified for use in Canada.