News, Views and Updates from the Electrical Safety Authority

PLUGGED IN

WINTER 2024

Electrical Safety Authority

The New Code is Coming

Learn more about
the new Ontario Amendments!

Convictions

Unlicensed

Seyednajmeddin Hasheminasab Zavareh (also known as Sherwin Hashemi) o/a Sherwonto Pot Lights Inc.

Toronto

Renovations at residence – 2 sites

Proposed to carry out business without being the holder of an electrical license

- $1,500.00 fine plus $225 victim surcharge – Failure to Apply for Notification of Work
- $3,000.00 fine plus $450 victim surcharge – No LEC

1710239 Ontario Corp., o/a C2C Interiors Inc.

Oshawa

Renovations at a commercial site – 1 site

- $3,500.00 fine plus $525 victim surcharge – No LEC
- $1,500.00 fine plus $225 victim surcharge – Failure to Apply for Notification of Work

Gary Poon (1710239 Ontario Corp., o/a C2C Interiors Inc.)

Oshawa

Renovations at a commercial site – 1 site

- $3,000.00 file plus $450 victim surcharge – No LEC
- Probation Order – Failure to Apply for Notification of Work

Proposed Ontario Amendments Highlights

ESA is working towards the adoption of the new edition of the Ontario Electrical Safety Code (OESC). As part of this process, we are consulting on the proposed amendments to the OESC. See Page 19.

We are highlighting a few of the proposed amendments in this article.

Section 2 – Remove exemption to licensed generators from the OESC scope

There are 428 licensed generators in Ontario; historically, all required a connection authorization from ESA to connect to the electricity grid and comply with the OESC to obtain such authorization.

The expectation is that Distributed Energy Resources (DERs) installations will be increasing as part of the energy transition as another way for communities to meet their energy needs. DERs generally refer to resources such as battery energy storage, rooftop solar panels, and electric vehicles (EVs) paired with smart chargers. The likelihood of widespread adoption of DERs could have significant impact on the distribution systems. Safety is paramount for the installation and integration of DERs into distribution systems.

The current Scope of the Ontario Electrical Safety Code (OESC), Rule 2-000 a), exempts electrical equipment and electrical installations used exclusively in the generation of electrical power or energy intended for sale or distribution to the public from the requirements of the OESC, unless an authorization to connect from the Electrical Safety Authority (ESA) is required. As generation facilities are required to obtain authorization to connect to the grid, they are not exempt from the scope of the OESC as per Rule 2-000 a). Electrical installations (as defined in the OESC) in generation facilities are required to follow all OESC requirements, including but not limited to notifications, Plan Review submissions, ground potential rise (GPR) studies, etc.

Deletion of Rule 2-000 a) iii) will eliminate contradictions between the need for connection authorization practice and the OESC scope. Furthermore, this change is in alignment with the current practice and removes any circular confusing requirements.

OESC Bulletin 2-28-* provides additional clarification and could be deleted if this Ontario Amendments is adopted.

Proposed Ontario Amendments Highlights (Continued)

Section 2 – Plan Review Requirements for Electric Vehicle Supply Equipment

As new technologies, including electric vehicle supply equipment (EVSE), are introduced to the market, the installation of this equipment will change the circuit loading and demand of existing electrical infrastructure. To proactively address this issue, it is prudent to provide guidance when additional loads related to evolving technologies are installed. The proposed OA provides an update to Rule 2-010 to include requirements for the submission of plans where EVSE is to be installed. This proposal will assist the industry in ensuring compliance before undertaking any work and confirm plans for managing the additional loads are in place, avoiding unexpected additional costs.

The addition of significant electrical loads to existing electrical infrastructure introduces the possibility of placing demand on electrical equipment that creates the possibility of fire hazards.

The proposal will act as an early stage discovery to address this issue under the Plan Review process in the connection of EVSE to existing electrical infrastructure. The proposal will also allow contractors to avoid additional costs when undertaking upgrades where the existing installations require replacements to facilitate the installation of EVSE. Submitting plans under Rule 2-010 based on the nameplate value will also allow for the evaluation of derating equipment using energy management systems. The threshold for the submission of plans under Rule 2-010 is proposed to be for installations, in other than single dwelling units, involving more than two electrical vehicle or where the total nameplate rating(s) of the electrical vehicle supply equipment including both existing and new is greater than 20% of the rating of the service equipment.

Proposed Ontario Amendments Highlights (Continued)

Section 8 – Energy Management Systems

The 27th edition of the OESC adopted in May of 2019 recognizes the use of electric vehicle energy management systems in Rule 8-002, 8-106, and 8-500.

The technology for managing the electric vehicle supply equipment (EVSE) has shown potential for managing other loads. Utilizing such energy management systems can ensure that the service or feeders are not overloaded, as required by OESC Rule 8-104, when installed as a component of the distribution equipment. Expanding this technology for loads other than EVSE provides options for sites or projects where increasing the service or feeders may not be possible or practicable for multiple reasons.

This OA proposes to remove current limitations in the OESC to utilize energy management systems. Removing the limitations of this accepted practice will assist the industry in addressing the electrification of the Province as we pivot to more sustainable energy and reduce the collective carbon footprint. The technology for energy management coupled with renewable energy and storage can be a dynamic opportunity for designers to meet the ever-changing industry and the needs of consumers to incorporate additional loads into established infrastructure.

Message from the Director

DIRECTOR'S CORNER – WINTER 2024

SOUSSANNA KARAS
Director of Licensing

As we wrapped up the calendar year 2023, I would like to share some of exciting events and initiatives that we are anticipating in 2024.

ESA's Digitalization Initiative: Transforming Licensing Services for MEs and LECs

In alignment with the ESA's Corporate Strategy and in response to the dynamic changes in the electricity sector, a very important project is underway to change the way licence holders interact with us. This year we are undertaking a project to create a seamless and efficient licensing experience for master electricians (MEs) and electrical contractors (LECs).

The heart of this initiative is the introduction of the Licensing Technology Platform, a comprehensive system that promises to be a one-stop-shop for licence holders. This platform will provide self-service functionality, significantly reducing wait times and offering an automated submission process for licence applications and renewals. Furthermore, licence holders can expect to receive their renewed licences directly from their account, with the added convenience of direct online payment for licence fees.

One of the key components of this digital transformation is the digitization of various processes, including the Contractor Locator tool and ME exam applications. This move towards a more technologically advanced system not only streamlines administrative tasks but also enhances accessibility and convenience for the licensed community.

As I mentioned during the Licence Holder Meeting in November 2023, the implementation of efficient self-serve capabilities is a pivotal step in motivating compliance and elevating the overall customer experience for the licensed community.

The commitment to digitalization reflects ESA's dedication to staying at the forefront of industry advancements, ultimately fostering a more agile, responsive, and user-friendly licensing framework for MEs and LECs. Stay tuned for more exciting developments in this transformative journey. For any questions or concerns, please write to us at licensingmatters@electricalsafety.on.ca

Message from the Director (Continued)

Licensing Modernization and Burden Reduction Amendments to O. Regulation 570/05

Changes to the Ontario Regulation 570/05 *Licensing of Electrical Contractors and Master Electricians* have been proposed to support the modernization of ESA's licensing infrastructure and the digitalization of the licensing framework. The Regulation was put in place in 2005. However, changes in technology, growth of the licence holder base and evolution of the industry, support the need for updating specific sections of the Regulation.

The proposed changes are designed to:

a) improve the application and renewal experience for licencees,

b) eliminate the need for master electricians to provide a recent photograph which will reduce the burden on master electricians and support ESA's work towards a digital master electrician's licence, and

c) allow ESA to better utilize modern means to administer the licensing process.

For more details regarding changes to the Licensing Regulation and to share your feedback, please follow to Ontario's Regulatory Registry website.

2023 Licence Holder Meeting Summary

In collaboration and partnership with the ECRA Advisory Council, ESA held another successful virtual annual Licence Holder Meeting (LHM) on Nov. 22, 2023.

The LHM was attended by 576 representatives from the industry (LECs and MEs), Ministry of Consumer and Government Services, ESA and other stakeholders.

This year, the focus of the meeting was on the potential consequences of unsafe work. The keynote speaker, John Milinkovic, Engineering Consultant from the Ministry of Labour, Immigration, Training and Skills Development of Ontario, provided an informative presentation highlighting the dangers of working on or near energized equipment.

The agenda included an update on the latest developments in Licensing and information on ESA's Communication campaigns aimed to increase awareness about risks of hiring unlicensed individuals. Attendees were also provided with an overview of the Ontario Electrical Safety Report that brought to light the importance of working safely, an update on the ESA ON Mobile App and Digital Notifications, and an overview from the Legal Department on activities addressing the underground economy, Administrative Penalty Orders (APO) and the cases for which APOs have been issued.

Attendees had the opportunity to ask questions during the meeting which were answered by Licensing, Operations, Regulatory representatives as well as Technical Advisors.

To view the meeting which includes the Technical Advisor Q & A, visit https://esasafe.com/meetings-events/licence-holder-meetings/

2023 Licence Holder Meeting Summary (Continued)

By the Numbers

576 attendees

9 speakers

155 questions answered that were submitted during the meeting

16 questions answered live from those submitted from LECs in advance

17 ESA LHM project team members

27 questions submitted in advance and addressed through the Technical Q & A

Thank you to everyone who contributed and made it another successful event!

2023 Licence Holder Meeting Contest Winners

Congratulations to the winners of this year's Licence Holder Meeting giveaway. Thank you to everyone who attended, we appreciate your feedback and are already looking forward to providing another great meeting for you in 2024.

Winners, who have already been notified, were randomly selected and we are excited to announce the prize recipients:

Natalie St. John
John McFarland
Jay Platt
Brad Killinger
Armando Lazcano
Bill Jraige
Bhuwan Sharma
John Sparks
Lascelles H. Brown

(There was one additional winner who chose not to publish their name.)

Actively Employed Designated Master Electricians – What Does It Mean?

If you are a Master Electrician designated to an electrical contractor, you already know you are required to be personally involved in the planning of electrical work carried out on behalf of the Licensed Electrical Contractor (LEC). You also know that you are responsible to ensure the electrical contractor work is carried out in accordance with the applicable laws, complies with the Ontario Electrical Safety Code and follows safe work practices.

But did you also know that if you are not the owner of the business, the Licensing Regulation (Ontario Regulation 507/05 made under the *Electricity Act, 1998*) also requires that you must be **actively employed,** by the LEC to accept the designation?

What does it mean to be actively employed as a Designated Master Electrician (DME)?

Actively employed means a DME is an employee of the electrical contractor, is regularly attending work or a job site to execute the duties of a DME and is on the payroll of the LEC.

What role can a DME and a LEC play to ensure compliance with this requirement?

- DME cannot accept the designation unless they are an **employee** on the **payroll** of the electrical contractor.
- A DME **cannot be a sub-contractor**, paid by cash, cheque or any non-monetary payment in kind, or perform unpaid work for the LEC.
- It is a breach of the Licensing Regulation for the DME to be an independent contractor or a volunteer worker rather than an employee.
- Any arrangement where a DME is paid to have their Master Electrician number associated to the LEC while not being an employee of the electrical contractor is a breach of the Licensing Regulation and may result in compliance action for both the DME and the LEC.
- For the LEC, as the employer, employing a DME means complying with the requirements under the Employment Standards Act, this includes, but is not limited to, the requirement to pay a DME in their employ at least minimum **wage** (and deduct all required payroll deductions).
- Further, having the DME on a payroll of the LEC ensures that the DME is covered under the LEC's general liability insurance.

Actively Employed Designated Master Electricians – What Does It Mean? (Continued)

These requirements ensure that electrical work carried out by an LEC is in accordance with all applicable laws, including the Ontario Electrical Safety Code and the laws relating to health and safety, employment standards, consumer protection, business tax and business practices. If you have additional questions about the practical considerations of "actively employed", please reach out to licensingmatters@electricalsafety.on.ca

If you are a DME and need to report changes to your designation to an LEC or if you are an LEC who needs to notify ESA of the loss or updates to your DME, complete *the Notice of Change to Designated Master Electrician form* found at www.esasafe.com/fees-and-forms/forms

For more information on the Competent Designated Master Electrician, click here.

Regulatory Compliance Program (RCP) Update

Building Permit Initiative (Markham):

November 6, 2023 to December 8, 2023

ESA recently completed another round of the Building Permit Initiative in Markham. As part of the Initiative, twelve months of commercial and residential building permit data was reviewed by ESA's Data Analytics and RCP staff to determine locations that may have had electrical work completed and where no ESA notification of work exists. Sites without a corresponding notification received a site visit made by the ESA inspector dedicated to the Initiative.

The goal of this initiative was to identify and reduce electrical work performed in the underground economy, to remind LECs of their obligation to take out notifications, increase compliance with the Ontario Electrical Safety Code, to enhance ESA's oversight and enforcement efforts and to increase safety.

The inspector followed up on 150 locations, in which 31 locations were found to be working without a notification. Since the initial visit 22 of 31 have obtained a notification.

- **14** were unknown
- **7** were LECs
- **6** were unlicensed with lack of information
- **2** were unlicensed (Notice of Violations have been issued)
- **2** were homeowners

The power was disconnected at one location because the inspector found the meter base hanging off the wall which had rotted at the bottom leaving an opening, making it a high-risk hazard.

While visiting the locations the inspector found an additional 37 units where electrical work was completed with no notification. Correspondence has been issued to the property owners educating them of the notification requirements.

ESA will continue to monitor, educate and take the appropriate enforcement action when appropriate.

Reminder

As per the Ontario Electrical Safety Code book (Rule 2-004) a notification must be obtained **before** commencing work.

Regulatory Compliance Program (RCP) Update (continued)

DME Verification Initiative #2: *October 3, 2023 to November 29, 2023*

Last year, based on the recommendation of ECRA AC and RCP Working Gorup, ESA conducted its first round of DME Verification Initiative – a pilot to ensure Licensed Electrical Contractors employed, on payroll, at least one Designated Master Electrician (DME), as required by the Ontario Regulation 570/05. The outcome of the first DME Verification Initiative demonstrated 24% of the LECs sampled did not employ a DME. Between October and November 2023, ESA executed another round of sampling LECs to clarify the employment status of their DME.

Through this recent communication outreach it was determined that out of the 150 LECs that were contacted:

- **121 (81%)** were in compliance and did have the DME on payroll
- **14** LECs have since come into compliance after ESA provided timelines
- **13** LECs are under review for potential compliance action
- **2** LECs who failed to respond to ESA had their licence suspended

ESA will follow-up to ensure those who do not employ a DME are able to demonstrate compliance with licensing requirements. To have a better understanding regarding DME requirement, see the article in this issue of Plugged In called: *Actively Employed Designated Master Electrician – What Does It Mean?*

DMEs hold an important role in the electrical industry by improving electrical safety and by ensuring the electrical work is carried out by the LEC safely and in accordance with all applicable laws. A DME cannot be a sub-contractor, must be on the LECs payroll and are responsible for personal planning and direct supervision of the electrical work carried out on behalf of LEC.

Regulatory Compliance Program (RCP) Update (continued)

Unlicensed Individuals Advertising Electrical Services Online:

January 2, 2023 – December 31, 2023

Enforcement efforts continue to actively pursue those who are illegally offering electrical services on social media. ESA takes a progressive compliance approach which starts with education and direction, where a Notice of Violation is issued for the first time the advertisement is found on social media. However, investigations are conducted in instances where there is a repeated occurrence or when the ad poster has fraudulently included an LEC number in their advertisement.

As a result of collaboration with ESA's IT staff, a ("web-scraper") report was developed with the goal to automate identification of noncompliant ads on Facebook and Kijiji. This automation allows ESA staff to identify and address noncompliant ads in an efficient and proactive manner, which reduces underground economy and improves electrical safety.

Over the past few years ESA has launched over 150 investigations into those advertising on Kijiji, and now has increased enforcement efforts to address the underground economy on other platforms such as Facebook. Enforcement efforts just over the past year include:

- **508** Notice of Violations issued to unlicensed
- **135** Reminder letters issued to LECs
- **48** Investigations initiated
- **10** Notice of Intent to impose Administrative Penalty Order issued
- **3** Administrative Penalty Orders issued

We Need Your Help!

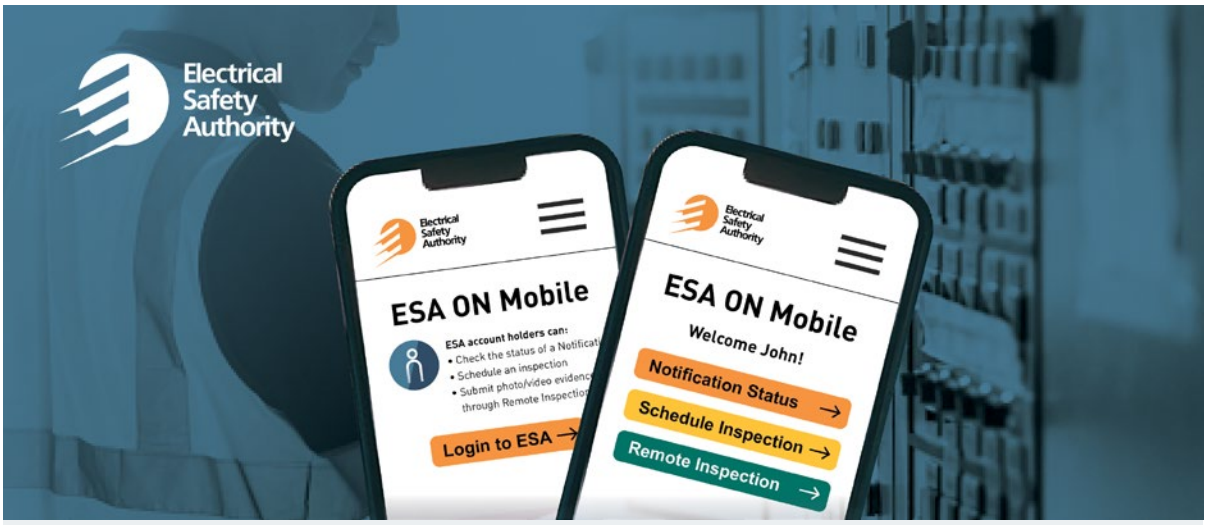
The Regulatory Compliance Program was created to identify, review and analyze trends in the underground economy. Initiatives are then created and executed to bring compliance with the Licensing and OESC requirements, and to ensure electrical safety for the people of Ontario.

If you have any ideas or suggestions on future initiatives, or if there is a trend you are currently seeing, please send us an email at ESA.Compliance@electricalsafety.on.ca. All submissions are thoroughly considered by the Regulatory Compliance Program Working Group and ESA management.

See It, Say It.

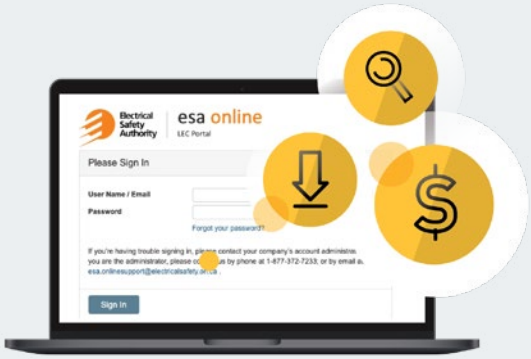
Together we can make a difference.

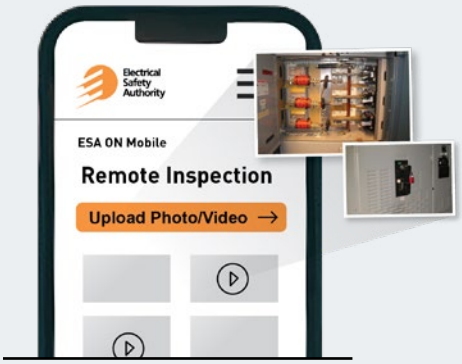
ESA ON Mobile App



If you haven't already, why not skip the queue and discover the convenience of ESA's self-serve functionality?

Our online services and mobile app provide you with 24/7 access to key functions so you can do business with ESA when and where it's convenient for you!





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Visit the Portal | **Apple Store** | **Google Play**

Empower your business with ESA online access today

by calling 1-877-372-7233 or emailing us at esa.onlinesupport@electricalsafety.on.ca.

Toolbox Talks

Stay Safe. Stay Informed.
January 2024

Electrical Safety Authority

Meter Bases for Residential Services

Did you know?

ESA reviews and reports on electrical incidents that occur. We have highlighted two of these incidents below:

Background

There are three variations of neutral assembly

- Neutral permanently bonded to the enclosure
- Neutral permanently isolated from the enclosure
- Neutral supplied with means to bond or isolate from the enclosure (must be provided with marking on a temporary tag, instruction sheet or equivalent indicating how the bond is to be removed or installed)

Requirements you need to know

- OESC Rule 10-210 requires that a grounding connection to the supply neutral be made in one location only – no other connection to metal parts of electrical equipment is permitted on either the line or load side of where the grounding connection is made.
- The type of meter base used needs to be aligned with the location of the grounding connection and in some configurations, a bonding conductor will be required between the meter base and the service box.
- See Ontario Bulletin 10-15-* for more details and additional acceptable arrangements.

Toolbox Talks

Stay Safe. Stay Informed.
January 2024

Electrical Safety Authority

Meter Bases for Residential Services (Continued)

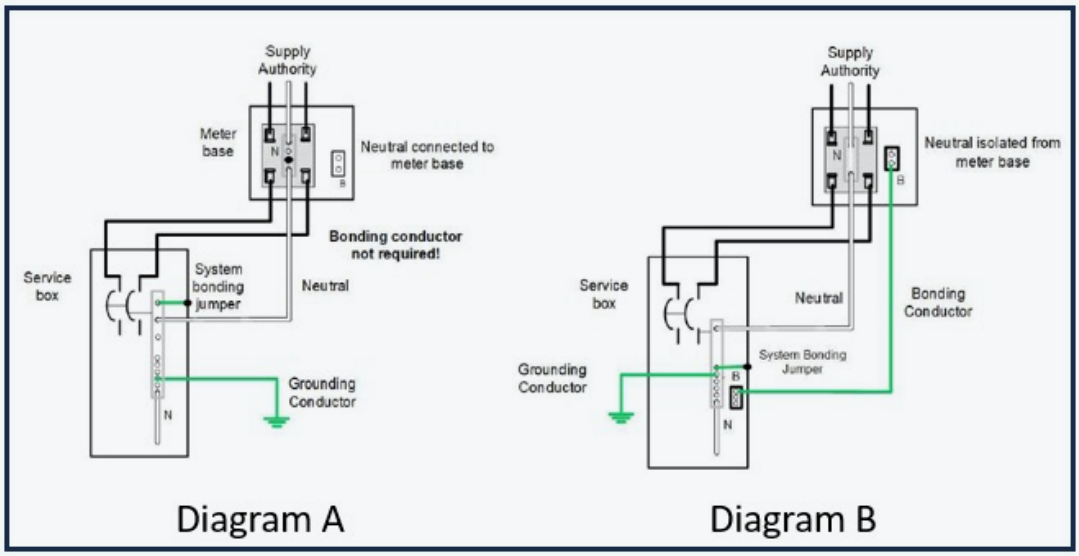
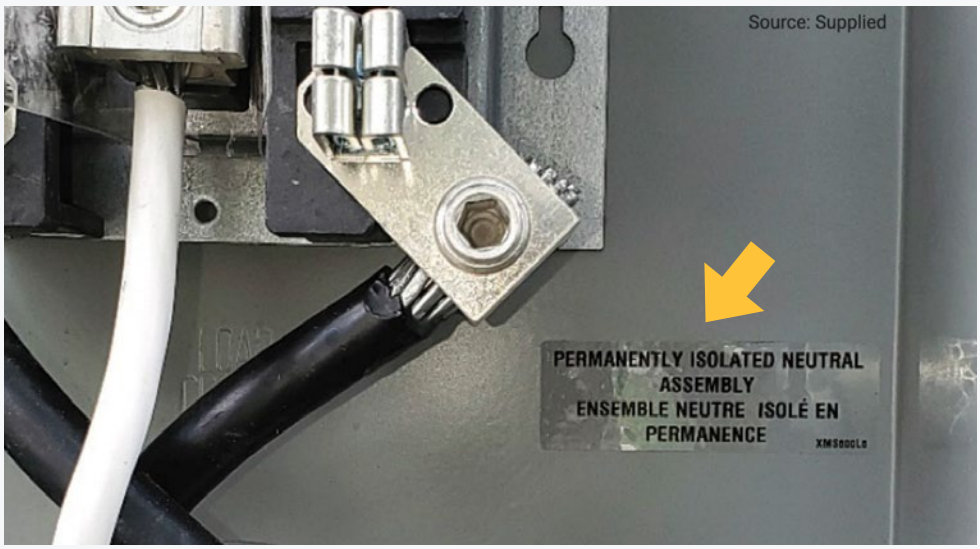


Diagram A *– Meter base with permanently bonded neutral assembly – permitted by Bulletin 10-15-**
Diagram B *– Meter base with permanently isolated neutral assembly*



Example marking showing neutral assembly configuration.
In all cases, we want to end up with an installation that is correctly grounded and bonded, compliant and safe.

Toolbox Talks

Stay Safe. Stay Informed.
February 2024

Electrical Safety Authority

Fuse Removal

Incident Summary

A non-electrical worker suffered severe burns to several body parts due to an arc flash when he attempted to remove a fuse from an energized disconnect switch. The worker was floor-grinding and not authorized to enter the electrical room and perform this task.

Causal Factors:

1. Ignored instructions from manager and site supervisor.
2. Ignored danger barriers.
3. Worked on energized equipment without proper protection.

Breaker Installation

Incident Summary

An electrical apprentice suffered severe burns to his hands and face when he was attempting to install a breaker into an energized panel and made contact with energized equipment.

Causal Factors:

1. Safety policies were not followed.
2. No hazard assessment were performed.
3. There were no discussions to disconnect power to the panel.
4. No PPE was worn.

Ontario Electrical Safety Code 29th Edition – Public Consultation

ESA is working towards adoption of the new edition of the Ontario Electrical Safety Code (OESC). As part of this process, we are consulting on the proposed Ontario-specific amendments to the OESC. The proposed OESC amendments are designed to enhance electrical and public safety, and ensure that installation requirements keep pace with the increased and wider adoption of emerging technology, such as electric vehicles. ESA welcomes feedback from contractors, consumers, businesses and other stakeholders on all proposed amendments. The consultation is open to the public from February 29, 2024 to April 22, 2024.

The effective date for the new OESC is planned for May 2025, pending government approval. All Electrical work conducted on notifications (or plan review submittals) taken out after the effective date must meet the updated requirements. ESA strongly recommends that stakeholders familiarize themselves with these important proposed changes, and provide their feedback during this public consultation.

The proposed amendments to the OESC and instructions on how to submit feedback are now available here on the ESA website. Please contact ESA at OESC2024.PublicConsultation@electricalsafety.on.ca if you require any assistance.

CODE CONUNDRUM

Q1

For the identification of intrinsically safe wiring, which of the following methods is acceptable?

- **a.** Cables are labelled
- **b.** Cables are identified blue
- **c.** Cables are identified light blue where light blue is not used for any other cabling
- **d.** a) and b)
- **e.** a) and c)

Q2

When only 4 conductors of an eight conductor communication cable, not marked LP, are used for power, the ampacities obtained from Table 60 must be multiplied by:

- **a.** 0.5
- **b.** 1
- **c.** 1.4
- **d.** 2
- **e.** None of the above

Q3

TC-ER cables may transition exposed between cable trays when supported at intervals not exceeding 1.5 m; and protected from damage either mechanically or by location.

- **a.** True
- **b.** False

Answers

Question 1:

e. a) and c)

Ref: Rule 18-066 8

Question 2:

c. 1.4

Ref: Rule 16-330 3)

Question 3:

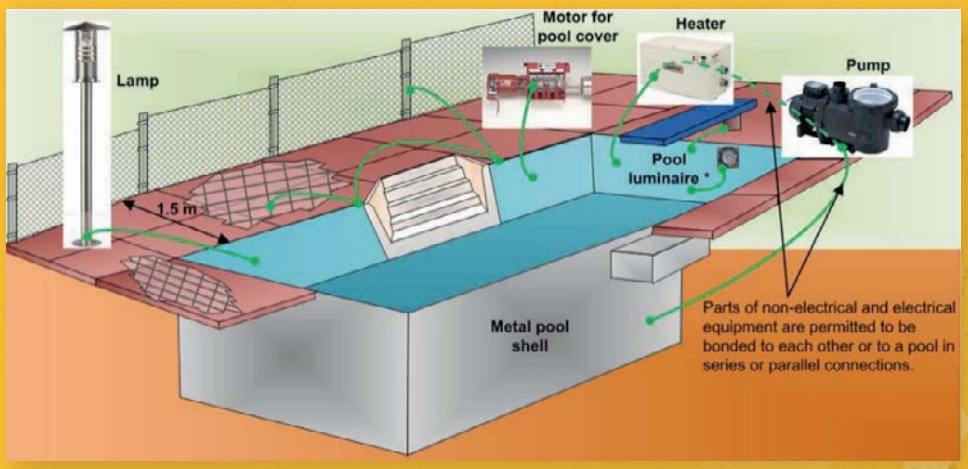
a. True

Ref: Rule 12-2202 4

Bonding of Non-current-carrying Metal Parts of Pools

Rule 68-058 of the OESC requires all metal parts of the pool and of other non-electrical equipment associated with the pool to be bonded together and to non-current-carrying metal parts of electrical equipment. This includes piping, pool reinforcing steel, ladders, diving board supports and fences within 1.5 m of the pool.

The Rule also applies to decorative-type pool luminaires and lighting equipment not located in a forming shell, metal screens of shields for underwater speakers, conduit and junction boxes by a copper bonding conductor not smaller than No. 6 AWG. Missing bonding may create an electric shock hazard that could lead to Electric Shock Drowning (ESD).



2024 Ontario Electrical Safety Awards

Submissions are being accepted from
March 1 – June 7, 2024 @ 5 p.m. in the following three categories:


Powerline Safety


Worker Safety


Consumer and Home Safety

The awards will be presented at the ESA Annual Meeting and Ontario Electrical Safety Awards on **Sept. 19, 2024.**

Here's how to submit a nomination:

Visit www.esasafe.com/2024Awards and either complete and email the fillable pdf or submit using the online form.