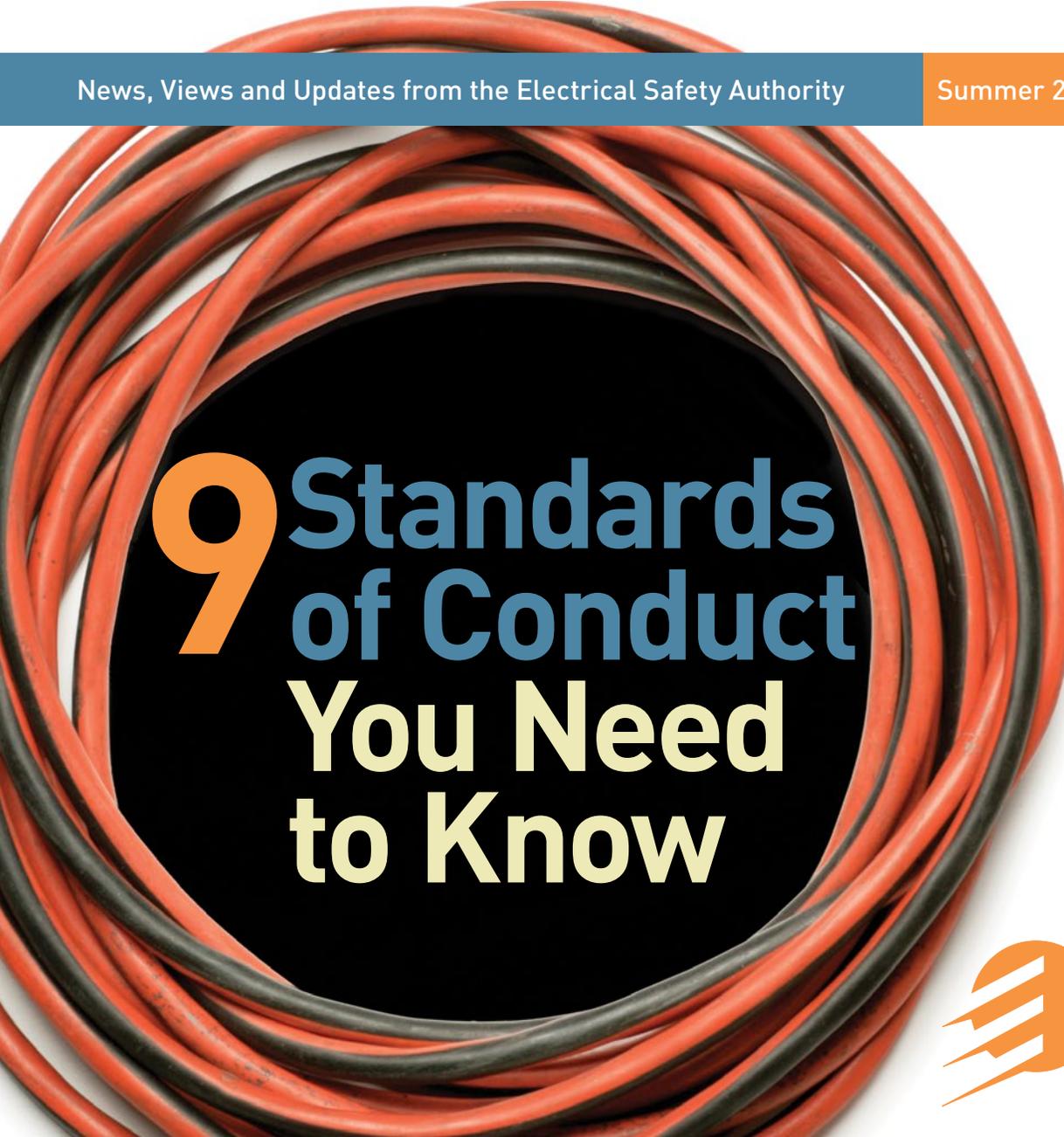


PLUGGED TM in

News, Views and Updates from the Electrical Safety Authority

Summer 2016



9 Standards of Conduct You Need to Know

4 tips to help
you avoid a
suspended
licence

pg. 5

Do you know
the link between
rodents and
solar panel fires?

pg.3



**Electrical
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Authority**

1-877-ESA-SAFE ESASAFE.COM

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Our Mission:

To improve electrical safety for the well-being of the people of Ontario.

Our Vision:

An Ontario where people can live, work and play safe from electrical harm.

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Electrical Safety Enforcement

Year to Date Convictions Feb. 1, 2016 – May 31, 2016

Convictions of Unlicensed Individuals and Contractors

William Bosgraff

Changed residential panel.

- \$750 fine – no EC licence

Dragan Radoman, operating as Stena Electric

Wired residential basement and changed and connected the power to panel.

- \$1,800 fine – no EC licence
- \$1,800 fine – failure to apply for inspection
- \$1,800 fine – failure to procure authorization before use

Joseph Castellano, operating as Castellano Construction

Residential renovation.

- \$750 fine – no EC licence
- \$750 fine – failure to apply for inspection

David Mason*

Repairs to a meter base and panel work.

- Suspended sentence and probation for one year – no EC licence

James Taylor

Residential kitchen renovation.

- \$1,000 fine – unsafe electrical conditions
- \$1,000 fine – no EC licence

Darryl Leppard

Residential rewire and panel change.

- \$1,000 fine – failure to apply for inspection
- \$1,000 fine – no EC licence

Halls Heat & Cool Inc.

Working outside of HVAC certification and failed to apply for inspection.

- \$10,000 fine – no EC licence
- \$10,000 fine – failure to apply for inspection

Sean Siev

Residential wiring.

- \$350 fine – no EC licence

Convictions of Licensed Contractors

1137749 Ontario Limited, operating as Pro-Teck Electric

In-floor heating system installed.

- \$250,000 fine – unsafe electrical conditions
- \$120,000 fine – failure to procure authorization before use
- \$60,000 fine – failure to apply for inspection

Jan Vink, operating as Jan the Electric Man

Residential electrical work done at a rooming house on an ongoing basis.

- \$500 fine – failure to apply for inspection

Note: These fines do not include the victim surcharge required by the Provincial Offences Act in most cases.

* David Mason is an unlicensed individual. He is not associated with DJ Mason Electric Co. Ltd., a Licensed Electrical Contractor based in Hamilton, Ontario.

If you are aware of anyone doing electrical work in violation of the Ontario Electrical Safety Code or electrical contractor licensing regulations, report it to ESA at 1-877-372-7233 or at esasafer.com and you can do so confidentially. ESA looks into every such report we receive.

Protecting Solar Conductors and Cables Against Damage from Rodents

Damage caused by rodents chewing through electrical wires has long been an issue in situations where electrical wires are exposed and accessible. This issue is also becoming prevalent with rooftop photovoltaic (PV) installations as rodents are attracted to the warm spaces underneath the modules. Unfortunately, it has become very easy for rodents to find their way to these wires.

Several incidents have been reported to the Electrical Safety Authority (ESA) where PV conductors installed on buildings have been damaged by rodents. This can represent a significant fire hazard.

When PV conductors are damaged, there is a high risk of series arcing faults caused by broken conductors, parallel arcing faults caused by shortening PV positive to negative conductors, or ground faults. Each of these arcs could lead to a fire.

The new Ontario Electrical Safety Code (OESC), which became effective in May 2016, contains a new Rule 64-210(5.) This new Rule requires PV conductors on or above buildings to be provided with mechanical protection against rodents, where the direct current (DC) arc-fault protection is not located at the module.

The mechanical protection needs to be in the form of an enclosed raceway or other acceptable material to protect against damage from rodents. Figure A provides examples of other acceptable material such as expanded metal, solid metal and screening. When installing wire screening, the installer must ensure adequate air flow to avoid potential overheating for PV wires underneath the modules. Drilling into PV modules is not permitted.

When DC arc-fault protection required by Rule 64-216 is located at the module, the probability of a sustained arcing fault, and consequently a potential fire, is greatly reduced. Therefore, the requirement for mechanical protection from rodents for PV conductors is omitted for PV systems with DC arc-fault protection at the module.

ESA is addressing any questions about this new requirement, such as questions about PV installations on commercial non-combustible buildings, on a case by case basis. Deviation requests (Rule 2-030) that include alternative measures, appropriate rationale, and consent of the owner may be considered.

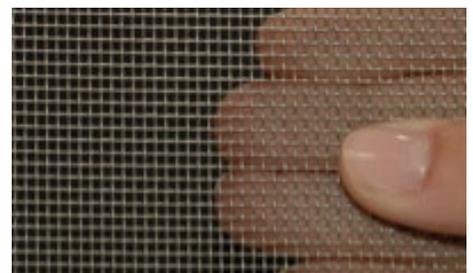


Figure A – Metal screening is an acceptable material to protect against damage from rodents



The 9 Standards of Conduct You Need to Know

As a holder of an Electrical Contractor (EC) Licence and/or a Master Electrician (ME) Licence, you have the legal right to perform electrical work in Ontario provided you satisfy the requirements and criteria within Ontario Regulation 570/05 and the Electricity Act, 1998, and all electrical work is carried out in accordance with the Ontario Electrical Safety Code (OESC) and other applicable laws.*

Your licence provides consumers with the assurance that they are hiring professionals they can trust. Your licence demonstrates that you value consumer protection, quality installations and public safety. It also means you'll provide services in an honest and diligent manner. These important aspects have been part of electrical licensing requirements since 2005.

The Act contains a specific section that sets out expectations for licensee behaviour and activities by identifying nine categories of misconduct which could result in disciplinary action against a licence holder. The nine categories of mis-conduct are identified in the table to the right.

9 Categories of Misconduct

- ✘ the applicant or authorization holder will not carry out the activities in accordance with the law;
- ✘ the applicant or authorization holder will not carry out the activities safely;
- ✘ the applicant or authorization holder lacks the basic resources necessary to carry out the activities;
- ✘ the applicant or authorization holder will not conduct himself or herself with honesty and integrity or in accordance with the principle of protecting consumers;
- ✘ the applicant or authorization holder lacks the training, experience, qualifications or skills prescribed by the regulations;
- ✘ the applicant or authorization holder failed to comply with or to meet a requirement of this Part, the regulations or an order of the Authority;
- ✘ the authorization holder failed to comply with a restriction, limitation or condition of the authorization;
- ✘ the authorization holder obtained the authorization through misrepresentation or fraud; or
- ✘ the authorization holder permitted an unauthorized person to carry out the activities.

What does this mean for you as an LEC and/or ME?

What does "failed to comply with or meet requirements of this Part" really mean? You may have questions about the Standards of Conduct because it's not always easy to link legal jargon to the work that you do every day. This is especially true if you aren't aware these expectations exist in the first place.

The Electrical Contractors Registration Agency Advisory Council and the Electrical Safety Authority (ECRA/ESA) asked themselves these questions.

Many members of ECRA/ESA are LECs, and they understand how critical it is to be aware of the laws that the industry follows in a simplified easy to understand guideline.

The result is the Licence Holder Standards of Conduct that you'll find inserted in this edition of Plugged In and on esasafe.com. It is a plain language guide to the obligations LECs and MEs have been subject to in the Electricity Act since 2005. There are no new requirements;

it is simply an explanation of existing laws. Not following the Standards of Conduct is a legal cause for discipline from ECRA/ESA. We encourage you to share this information with your colleagues and employees to make sure the whole industry operates and competes on the same playing field and contributes to public safety and consumer protection.

**Updated from print edition.*

For more information email ESA.Licensing@electricalsafety.on.ca

Important Licensing Requirements

4 Ways to Keep Your Licence Valid and Avoid Suspension

Did you know that it is a requirement of your Electrical Contractor (EC) licence to notify ECRA/ESA within **five days** of no longer employing a Designated Master Electrician (DME)? Ensuring that all of the requirements of your EC licence are maintained is the responsibility of all Licensed Electrical Contractors.

All Licensed Electrical Contractors must:

- 1 Employ a DME with a valid licence;
- 2 Have public liability and property damage insurance coverage of at least \$2,000,000;
- 3 Maintain Worker Safety Insurance Board as required;
or
- 4 File the necessary returns with the Canada Revenue Agency.

You must notify ESA within **five days** of not being able to meet any of the four requirements listed above. If you need to make a change to your licence information, please submit a "Change of Information" form to ESA within **five days** of the change.

Once you notify ESA that you are no longer employing a DME, ESA will allow you to apply for a 60-day provision to continue to operate while you search for a replacement. If at the end of the 60-day period you have not yet been able to employ a DME, you may request an additional 60-day extension.

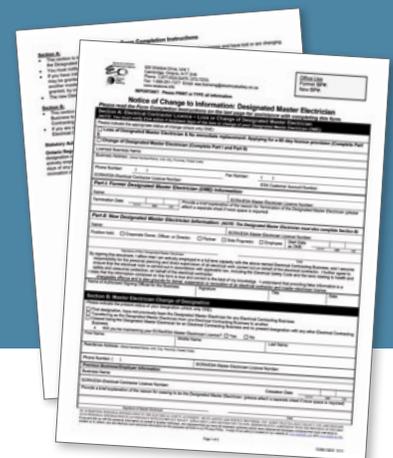
If the change is not reported, ESA must initiate the suspension process until these requirements have been met. This could result in inspection delays for you and inconvenience for your customers.

We're here to help

If you are uncertain about what is required to maintain your licence, please contact ESA's licensing department by calling **1-877-372-7233** and selecting option 3.



You can obtain Notice of Change forms by visiting **esasafe.com** under the contractor licensing section.



CSC Phone Service Update

Requests for Information – How You Can Better Protect Your Business

Did you know that the details provided on your Application for Inspection can provide added protection for you, your business and property owners? Ensuring that you include very specific information on your Application for Inspection about the work that you are doing is important not only as a record of the work you have completed, but also for anyone who has requested information on a particular property.

Moving forward, Customer Service Representatives (CSRs) will be asking LECs for specific details on all applications submitted for residential and commercial renovations including all work locations within the building and the exact count and breakdown of outlets and devices in each location. We encourage LECs to have this information on-hand prior to submitting Applications for Inspection.

Property owners commonly submit Requests for Information from ESA to support them in financing or insurance applications, or for a real estate transaction. They are often looking for specific details of a wiring installation – for example, they might be looking for a copy of the Certificate of Inspection for a basement renovation. A Request for Information provides a formal record of the electrical history of a property. ESA received over 2,800 of these requests last year.

The detail ESA is able to provide is dependent on the detail LECs include in the Application for Inspection.

Examples of Applications for Inspection:

Non-Specific Application for Inspection	Detailed Application for Inspection
18- switches, fixtures, receptacles	Home Office: 3- receptacles, 2- fixtures, 1- switch Kitchen: 5- pot lights, 3- switches, 1- island receptacle Deck: 2- fixtures, 1- GFCI

Benefits to LECs:

There are benefits for both property owners and LECs from a more detailed Application for Inspection. Benefits to LECs include:

- A detailed corporate record capturing the full scope of the work performed at specific times, at specific locations – an excellent tool to ensure your work is documented.
- The ability to prevent defects being issued to your company for work done by others. Specifics of the work and the location are documented which aids an inspector in identifying where work was performed by other parties.



GPS Coordinates Provide Accurate Inspection Sites

When submitting your Application for Inspection to ESA's Customer Service Centre, please provide GPS coordinates for the inspection site when possible. This will help to assist ESA inspectors in locating the site and avoid delays.



CSC Phone Service Update

Jan. 1, 2016 – March 31, 2016:

VOLUME
92,649 calls

SERVICE LEVEL
79% of calls
answered in
30 seconds or less

Understanding Behaviour to Increase Electrical Worker Safety

Working on energized equipment remains a leading cause of electrical-related fatalities and critical injuries for electricians. This has been a persistent trend for more than a decade. To inform ESA's multi-year electrical worker safety strategy, we commissioned behavioural research to better understand the behaviours that influence electrical workers to work on energized systems.

For every fatal work-related electrical injury, there are five critical and 18 non-critical injuries. According to the 2013 Ontario Electric Safety Report, unsafe work practices and human error play a significant role in fatal electrical work-related injuries. Electrical workers are at especially high risk.

To understand the cause of unsafe work practices, the ESA worked with researchers to find and understand the factors that affect electricians' decisions and behaviours when working with electrical current – otherwise referred to as “working live.”

In fall 2015, ESA invited 309A electricians and apprentices to participate in the research interviews. We received more than 1,000 applications for the 60 interview slots; an indication of how important this issue is to the electrician community. Electricians were interviewed in depth to discuss their work experiences and influences in safe work practices.

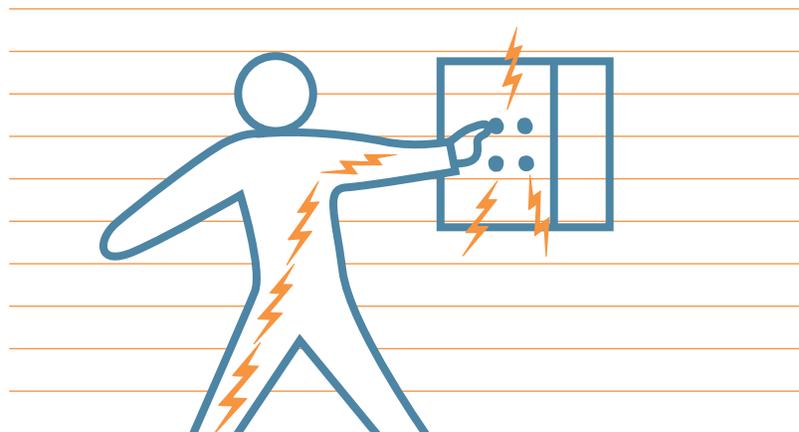
Factors identified for working live included electrical knowledge, whether the electrician understood his or her situation, and the resulting decisions that he or she made. **Ninety per cent of electricians reported having worked live – whether intentionally or not.** In addition those interviewed commented that the work environment is complex and always changing. In light of these statements only 50 per cent of electricians reported doing formal hazard assessments before a job was started.

The research also identified the specific intervention moments when unsafe electrical practices can be targeted. ESA will be using that mapping to try and reduce the frequency of working live injuries and fatalities. These opportunities include:

- Enhanced training of apprentices;
- Tapping into electricians' strong internal motivation to get home safely and a desire to share this information among their peers; and
- Discipline and enforcement initiatives.

Having a better understanding of these behavioural factors can assist ESA and other electrical safety experts in creating strategies and tailoring effective communication to help prevent and minimize future electrical-related injuries and deaths amongst electrical workers.

90% of electricians reported having worked live whether intentionally or not.

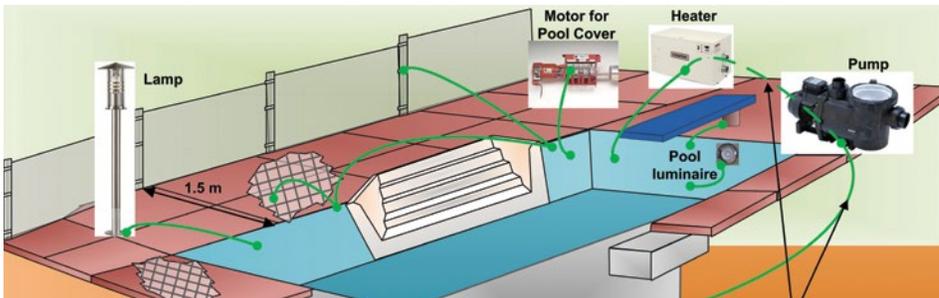


Spotlight on Common Defects

Bonding of Non-Current Carrying Metal Parts of Pools

The warm summer weather brings with it an increasing number of pool installations. It's important to ensure that any pool installation meets the requirements of the Ontario Electrical Safety Code (OESC) to help prevent the risk of shock or electrocution. Over the past year, ESA inspectors have identified over 500 defects regarding missing bonding of non-current-carrying metal parts of swimming 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 would also apply to decorative-type pool luminaires and lighting equipment not located in forming shells, metal screens or shields for underwater speakers, conduit, junction boxes, and the like by a copper bonding conductor.



The required bonding for swimming pools is important to create equipotential surface, and eliminate any potential difference in the body of water. Missing bonding may create an electric shock hazard condition that may lead to electric shock drowning.

For more information on OESC requirements for swimming pool bonding, please refer to Bulletin 68-7-* (www.esasafe.com/contractors/bulletins)

What's Happening

Save the Date

Sept. 29, 2016 – Ontario Electrical Safety Awards & Annual General Meeting – Living Arts Centre, Mississauga

Holiday Closures

Aug. 1, 2016 – Civic Holiday
Sept. 5, 2016 – Labour Day
Oct. 10, 2016 – Thanksgiving Day

Plan to Attend

2016 Licence Holder Meetings (See insert for details)

- Oct. 4, 2016 – Holiday Inn Kitchener-Waterloo Conference Centre, Kitchener
- Nov. 22, 2016 – Sheraton Parkway Toronto North Hotel & Suites, Richmond Hill

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We'd like your input



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Electrical
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You're invited to the 2016 Annual Licence Holder Meeting

Highlights of this year's agenda:

- Overview of the 9 Standards of Conduct you need to know
- Review of licensing activity, including a change to 5-year licensing
- ECRA and ESA discuss initiatives and priorities for the year ahead
- Question and answer session
- A focus on the role of the Designated Master Electrician (DME)
- Case study and discussion involving a serious workplace injury and what could have been done to prevent it
- Prize draw

How to Register:

Online: www.esasafe.com/licensing/lhm
Email: esa.lhm@electricalsafety.on.ca
Phone: (905) 712-5385
Fax: (905) 712-3020

RSVP By:

Kitchener
September 28, 2016

Richmond Hill
November 17, 2016

Fax-Back Information

Choice of location (Check one):

- Kitchener – October 4
 Richmond Hill – November 22

Company Name (Please print):

ECRA/ESA Licence Number:

Phone Number:

Names of employees attending
(Please print clearly):

- 1 _____
- 2 _____
- 3 _____

Two dates and locations to choose from:

October 4 KITCHENER

Electrical Industry Expo:
11 a.m. to 12:30 p.m.

Main Event:
1 p.m. to 3:30 p.m.
(Registration at 12:15 p.m.)

Holiday Inn Kitchener -
Waterloo Conference Centre
30 Fairway Road South

November 22 RICHMOND HILL

Electrical Industry Expo:
11 a.m. to 12:30 p.m.

Main Event:
1 p.m. to 3:30 p.m.
(Registration at 12:15 p.m.)

Sheraton Parkway
Toronto North
9005 Leslie Street



Licensed Electrical Contractors and Master Electricians who are granted a licence are provided with a legal right to perform certain tasks related to electrical work.

In return for this right, licence holders are expected to conduct themselves in accordance with their associated legal obligations when carrying out such rights granted by their licence. Section 113.2(2) of the *Electricity Act*, 1998, R.S.O. c.15 formalizes such expectations by identifying nine categories of conduct which could result in disciplinary action against a licence holder by a Director if:

- a) The licence holder engages in one or more of the below listed categories of conduct in the course of performing tasks authorized by way of his or her licence; and
- b) The Director deems discipline to be an appropriate action under the particular circumstances involved.

More specifically, in accordance with the *Electricity Act* [s.113.2(2)(a) to (i)], **the Director may propose to take discipline action against a licence holder if the Director has reason to believe that,**

(a) the licence holder will not carry out the activities in accordance with the law;

A licence holder is expected to carry out all activities relating to their licence in accordance with all applicable laws, including but not limited to, the Ontario Electrical Safety Code, and the laws relating to health and safety, employment standards, consumer protection, business tax and business practices.

Examples may include but are not limited to,

- taking out applications for inspection (electrical permits) and requesting inspections where required by the Ontario Electrical Safety Code.
- ensuring electrical work is performed by those with a valid trade certificate of qualification or by registered apprentices.
- performing electrical installations in accordance with current Ontario Electrical Safety Code requirements.
- abiding by applicable consumer protection laws.
- only conducting electrical contracting business with a valid licence.
- obtaining any required utility and Electrical Safety Authority ("ESA") authorization before reconnecting a consumer service.

(b) the licence holder will not carry out the activities safely;

A licence holder is expected to carry out all activities relating to their licence safely and in a manner that protects the health and safety of workers and the public.

Examples may include but are not limited to,

- working on energized equipment only when appropriate and when it does not pose a risk to safety for themselves, other workers, or the public.
- using proper personal protective equipment when performing electrical work.
- performing electrical work in accordance with the current Ontario Electrical Safety Code requirements.

(c) the licence holder lacks the basic resources necessary to carry out the activities;

A licence holder is expected to have the basic resources, training, experience, qualifications, and skills necessary to carry out the activities of the licence.

Examples may include but are not limited to,

- maintaining the essential resources, assets, supplies or possessions required to ensure that activities authorized by the licence are carried out safely and lawfully in order to protect workers and consumers.
- possessing administrative capabilities that allow the ability to consistently follow required processes for permit application.
- having the resources to provide workers with the necessary training and related materials, or required safety equipment.

(d) the licence holder will not conduct himself or herself with honesty and integrity or in accordance with the principle of protecting consumers;

Licence holders are expected to conduct themselves with honesty and integrity and to follow the laws and principles established for safeguarding consumers.

Examples may include but are not limited to,

- charging a consumer only for services actually provided.
- charging a consumer only for parts actually installed at the site.
- charging a consumer for a permit fee only when a permit was required to be taken out.
- not taking advantage of a consumer in an emergency situation and/or ensuring prices charged represent the price at which similar goods and services are readily available to like consumers.
- displaying the Electrical Contractor licence number in all correspondence, contracts and advertisements, on business vehicles and, generally, in all situations where the licence holder is communicating with the public.

(e) the licence holder lacks the training, experience, qualifications or skills prescribed by the regulations;

It is expected that a licence holder has the required training, experience, qualifications and skills required to carry out the activities relating to the licence.

Examples may include but are not limited to,

- maintaining an appropriate working knowledge of the current rules of the Ontario Electrical Safety Code and the regulations.
- maintaining or employing someone with a valid licence (P.Eng or CET), certificate or membership (OCOT) for the trade or profession with which the Electrical Contractor or Master Electrician's licence was obtained.
- ensuring that all business activities engaged in are within the limits of the licence holder's and any employees' knowledge, experience, skill-level and qualifications.

(f) the licence holder failed to comply with or to meet a requirement of this Part (Electricity Act), the regulations or an order of the Authority (Electrical Safety Authority);

Licence holders are expected to comply with all legal obligations for holding a licence.

Examples may include but are not limited to,

- actively employing a Designated Master Electrician as required.
- ensuring liability insurance and WSIB is maintained.
- carrying out responsibilities of an Electrical Contractor or Designated Master Electrician as defined in Regulation 570/05.
- cooperating with an inspection or investigation.

(g) the licence holder failed to comply with a restriction, limitation or condition of the authorization (licence);

Licence holders are expected to ensure that all licence stipulations are maintained and adhered to.

Examples may include but are not limited to,

- ensuring that all activities engaged in under the licence are within the scope of any restriction, limitation or condition placed on the licence.
- only undertaking electrical work for which the licence is limited to.
- meeting a condition of the licence within the prescribed timeframe.
- only engaging in activities that the licence is restricted to.

(h) the licence holder obtained the authorization (licence) through misrepresentation or fraud; or

Licence holders are expected to provide accurate and factual information and documentation on the licence application and renewal forms.

Examples may include but are not limited to,

- submitting truthful information on a licence or renewal application.
- providing factual and unaltered documentation or certifications with a licence or renewal application.
- truthfully attesting that a designated Master Electrician is actively employed by the Licensed Electrical Contractor.

(i) the licence holder permitted an unauthorized person to carry out the activities.

A licence holder is not permitted to allow an unauthorized person to carry out activities that requires a licence. A licence holder is expected to ensure that they use only qualified persons or business to carry out electrical work on their behalf.

Examples may include but are not limited to,

- only taking out an application for inspection (electrical permit) for licensed persons or businesses in order for them to undertake electrical work.
- subcontracting electrical work only to licensed contractors.
- ensuring that employees/workers undertaking electrical work on behalf of the licence holder are qualified to carry out the electrical work and not substituting unqualified labourers in place of certified trade employees.

For further information on licence holder roles and responsibilities refer to the "Guideline to the Duties and Responsibilities of Licensed Electrical Contractors and Designated Master Electricians".