



Centre for Health and Safety Innovation - 5110 Creekbank Road, Mississauga

Utility Advisory Council Members

ULDC/Owner-Operator

| | |
|---------------------------------------|-------------------|
| Alectra Utilities | Vicky Khamar |
| Burlington Hydro | |
| Festival Hydro | |
| Guelph Hydro | |
| Hydro One | Darren Desrosiers |
| Hydro One - Transmission | Ajay Garg |
| Hydro Ottawa | |
| Kitchener-Wilmot Hydro | |
| London Hydro | Greg Sheil |
| Newmarket-Tay Power Distribution Ltd. | Gaye-Donna Young |
| Orillia Power | Chris Burrell |
| Toronto Hydro | Rowena Chan |
| Veridian | Peter Petriw |

Government/Regulatory

| | |
|----------------------|----------------|
| CSA Group | Tania Donovska |
| IHSA | |
| Ministry of Energy | |
| Ministry of Labour | Vacant |
| Ontario Energy Board | Stephen Cain |

General Interest

| | |
|------------------------------|--------------|
| Bell Canada/Telecom Industry | Tony Pereira |
| Consumer Advisory Council | Vacant |
| Industry Advisory Council | Vacant |
| OACETT | |
| ORCGA/Excavating Industry | |
| Power Workers Union | |

Other Attendees

Lori Gallagher (Utilities Standards Forum), Sharmila Uruthiranandasivam (Ministry of Government and Consumer Services), Kathryn Farmer (Electricity Distributors Association), Muayad Tarabain (Hydro One Networks Inc.), James Davidson-Gurney (Hydro One Networks Inc.), Alex Braletic (Newmarket-Tay Power Distribution Limited), Kourosh Manouchehri (Technical Standards & Safety Authority), Mike Goodwin (Entegrus Powerlines)

ESA Attendees

Farrah Bourre, Normand Breton, Jason Hrycyshyn, Martin Post, Paul Shames, Ted Olechna, Nansy Hanna, Aisling O'Doherty



1 Notice & Quorum

- The meeting did not have quorum

2 Grounding at Farm Buildings - Ted Olechna (presentation)

- ESA is looking to get feedback from LDCs on the following item
 - o Do all LDCs have central metering (CM) services
- ESA will be reviewing the CM service requirements (overhead and underground) and is looking for LDC participants to be a part of this review
- ESA will send a request to all LDCs to determine how many LDCs have CM services and who is interested in participating in the working group

3 Stray Voltage Threshold for Residential Customers - Muayad Tarabain and James Davidson-Gurney (Hydro One Networks Inc.)

- Unlike Stray Voltage there is no consistent information when it comes to residential customers
- Stray Voltage (IEEE 1695): A voltage resulting from the normal delivery or use of electricity which may be present between two conductive surfaces that can be simultaneously contacted by members of the general public or their animals. Stray voltage is not related to power system faults, and is generally not considered hazardous.
- EPRI has published research on [Identifying, Diagnosing, and Resolving Residential Shocking Incidents](#)
- Research indicates that calls about nuisance shocks is just a precursor to a larger issue and a fault on either the LDC or customer side can have serious implications
- ESA is currently reviewing Section 10 of the Ontario Electrical Safety Code and this would be relevant information to have
- ESA is interested in working with Hydro One on this issue

4 Risk Based Oversight – Paul Shames (presentation)

- An overview of RBO was provided and can also be found on the [ESA website](#)
- Once RBO comes into effect the ACP program will no longer exist and in its place will be Pre Authorized Eligible contractors
- All Contractors will have the opportunity to become Pre Authorized Eligible (requirements to be met will remain the same as the ACP program)
- Pre Authorized eligibility will be based on a 12 month rolling history so a contractor's eligibility for this benefit may change based on their history
- ESA was looking to see if the UAC had any recommendations about how to communicate this information to LDCs and how LDCs were currently referencing the ACP program
- Some LDCs referenced the ACP program by sending customers to the [ESA Contractor Look-Up Tool](#)
 - o The contractor look-up tool will remain the same with the change indicating Pre Authorized Eligible instead of ACP
- The UAC indicated that many Municipalities reference and use the ACP program



- The UAC didn't have any specific advice on the best way to communicate this change to LDCs

5 Identifying Electrical Meters that are a Source of Ignition – Jason Hrycyshyn (presentation)

- ESA asked the LDC members of the UAC if they are aware of how common propane is in their territories
 - o Propane is common in rural areas and northern Ontario
- ESA is looking for feedback on how natural gas and propane installers can be notified that they are working on a location where there is a meter that is a source of ignition
- It was noted that the future meter standard will have a clause for marking a meter when it is a source of ignition

6 Certificates of Approval – Professional Engineers and Section 7 – Jason Hrycyshyn (presentation)

- ESA has received questions from the Auditors about the status of an Engineer (Practising, Non-Practising, Undeclared) and whether an LDC using documents approved by a Professional Engineer who no longer works for the LDC is in compliance with Regulation 22/04
 - o ESA will be communicating with the PEO to clarify what each of these statuses represent
- ESA will provide further direction to the LDCs once it is determined if there are any compliance concerns identified

7 Structures Located on Roadway Side of Curbs - Working Group Update – Jason Hrycyshyn (presentation)

- The working group has completed work on the bulletin. ESA is looking into input from the CSA Overhead Technical Committee.

8 Interim Guideline for Excavating in the Proximity of Underground Distribution Lines – Martin Post (presentation)

- The Excavating Guideline has been replaced with an [interim version](#) until a review and revision of the original guideline is completed
- This was necessary because the TSSA and ESA have decided to not co-author an Excavating Guideline anymore
- The guideline has been modified to be an ESA only guideline focusing on the Regulation requirements and how to comply with the Regulation
- References to TSSA regulation requirements were removed
- ESAs complaints handling process was added
- The proposed schedule for the review of all the guidelines had the Excavation Guideline being reviewed in year 1 and the Proximity to Distribution Lines guideline being reviewed in year 4



- ESA is proposing that these two guidelines be combined into a single guideline, as they both reference Section 10 of the Regulation, and that they both be reviewed in year 1 to replace the interim guideline
- ESA is proposing forming a working group and asked for feedback on what organizations besides ESA, LDCs, On1Call and ORCGA should be included on the working group to review the guideline. Suggestions included
 - o Building department
 - o Ministry of Labour
 - o Specialists like Hydro Vac or Utility arborists
- The working group will work to finalize the scope of the work in the guideline review and combining exercise
- The UAC supports creation of a working group to address updating and combining the two guidelines
- ESA will begin the process for the formation of the working group and creating a schedule for completing the work

9 Workplan – Farrah Bourre

- The workplan for the next 2 years was reviewed

10 Annual Survey and Results – Farrah Bourre (presentation)

- The survey showed that the UAC was satisfied with how the council is being run, the information being shared, the role that the council plays in developing the regulation, and the approachability of staff
- The council would like to see more background information provided, subcommittees set up to discuss more challenge issues and more say in the initial direction that ESA takes

11 Auditor Debrief – Jason Hrycyshyn and Martin Post (presentation)

- Highlights of the Auditor Debrief were shared with the council
- Complete presentation can be found on the [ESA website](#)

12 Ontario Electrical Safety Code (OESC) – Nansy Hanna

- The Minister of Government and Consumer Services has approved the regulatory amendment to adopt the 2018 Ontario Electrical Safety Code, and it will come into effect on May 16, 2019
- Highlight of some of the changes and how to purchase a copy of the OESC can be found on the [ESA website](#)



13 3-Phase 3-Wire Solidly-Grounded Wye Customer Services - Corrective Actions/Next Steps –

Jason Hrycyshyn (presentation)

- The number of potential configurations of concern has been steadily dropping since the first flash notice was sent out
- ESA wants to clarify some issue that LDCs are encountering including
 - o LDCs removing a bond conductor
 - o Slash-rated breakers
 - o OESC defects, and
 - o Metering issues

14 Construction moving closer to powerlines Jason Hrycyshyn (presentation)

- ESA has reviewed its records and has 88 Public Safety Concerns related construction being in close proximity to overhead distribution lines
- ESA is looking to the LDCs to provide data on the number of issues they see involving clearance to overhead and underground powerlines
- There has been discussion on Zero Lot Line and ESA would like to know how big of an issue this is. ESA would like LDCs to provide data on how many cases they have encountered
- CSA has indicated that these issues exist across Canada, and they are currently compiling data to assess how big of an issue this is

15 CSA Standards Public Review – Tania Donovska (presentation)

- C22.3 No. 1, Overhead Systems and C22.3 No. 7, Underground Systems will both have their content development creation completed by June 2019 and March 2019 respectively
- Public and Quality review will start immediately following the content development and it will be open for 60 days. This can be done on the [CSA Website](#)

Meeting adjourned



Central Metering



Central Metering

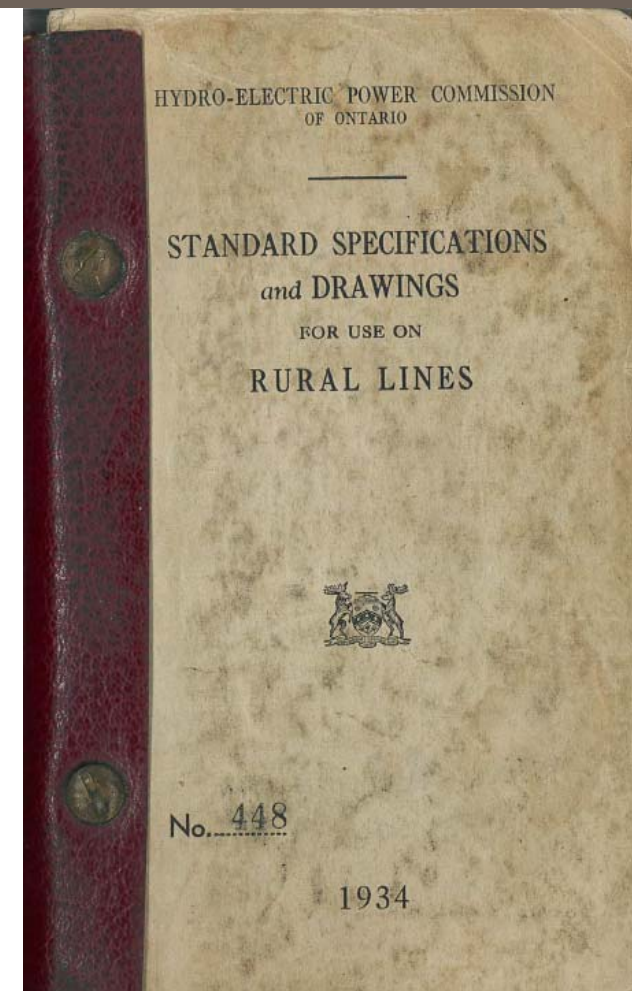
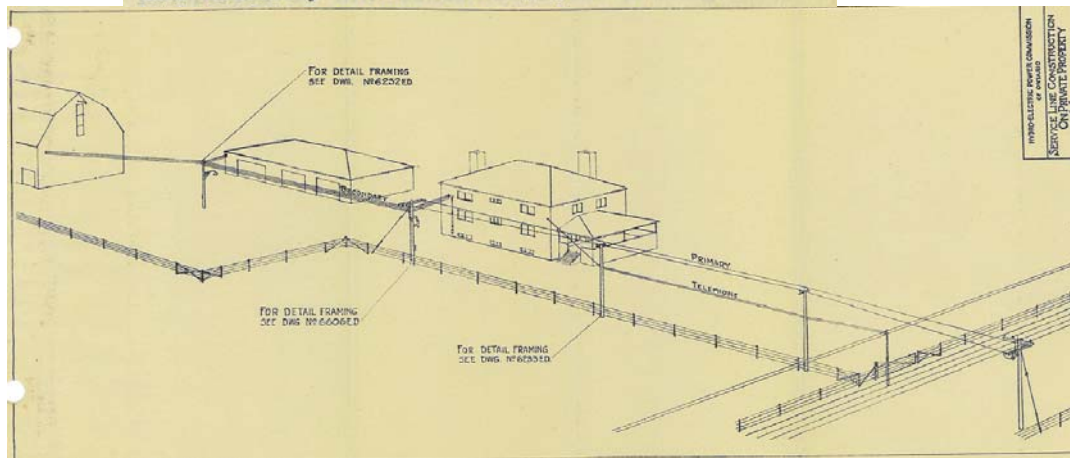
GENERAL

The contract under which the rural Consumer receives service provides that certain construction (labor and material) shall be supplied by the Commission, and other construction shall be supplied by the Consumer, which construction shall conform to these specifications and be subject to inspection.

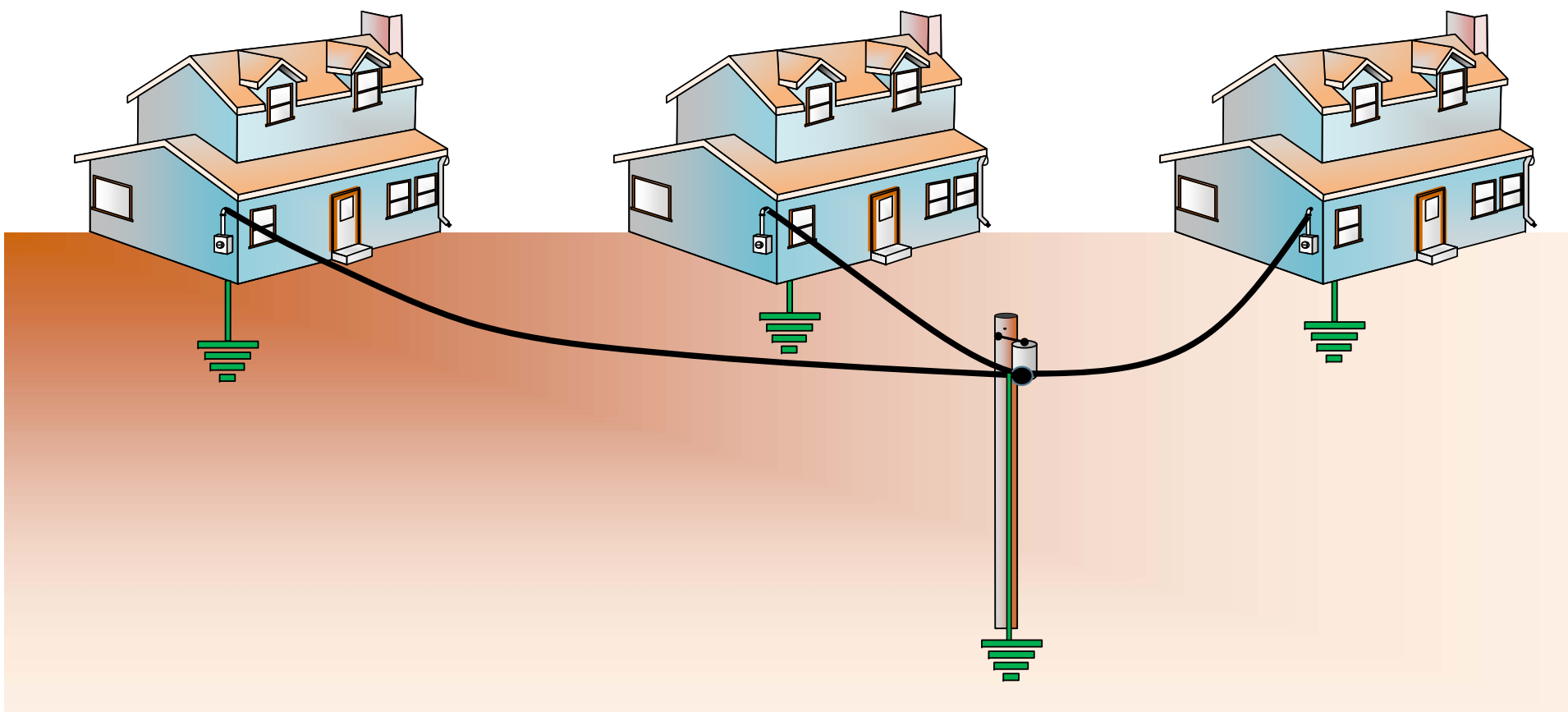
CONSTRUCTION TO BE SUPPLIED BY THE COMMISSION

The Commission will supply a meter and an approved type of Service Breaker for each service, and a Service Box for inside installations only.

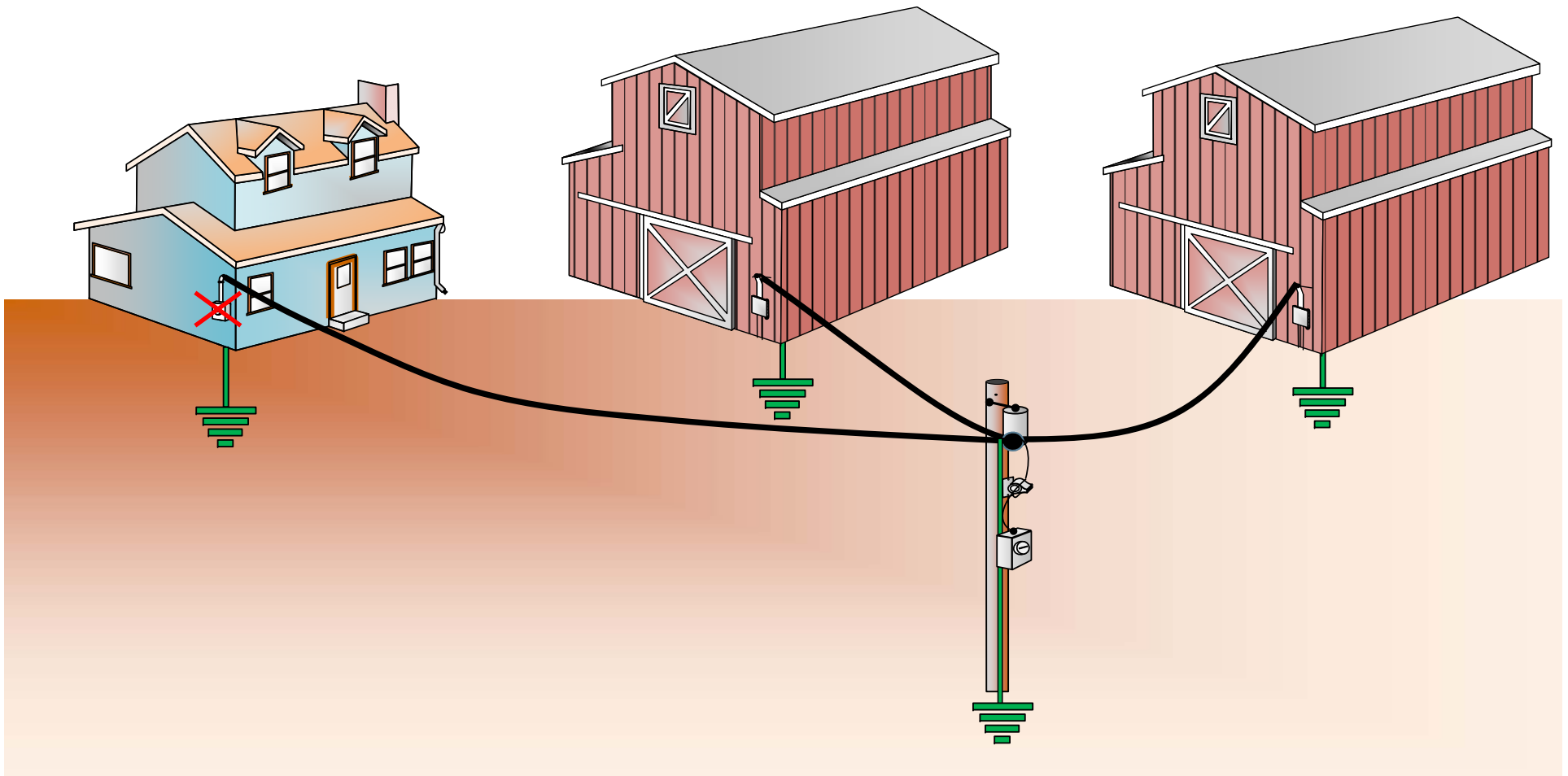
Where the transformer is to be located on the Consumer's Property, the Commission will supply and erect, on the Consumer's pole, the transformer and necessary transformer equipment.



Typical Subdivision Supply



Typical Central Metering Supply

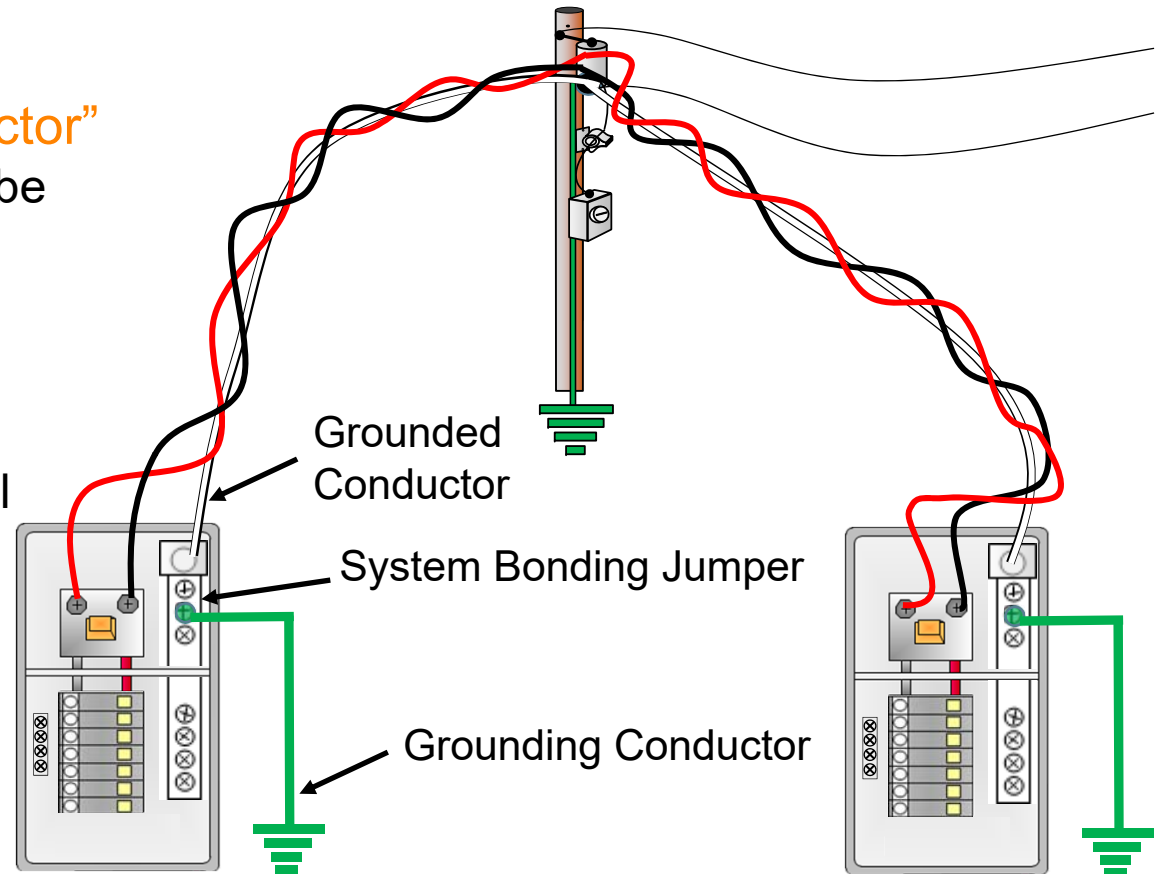


OESC Service Entrance Requirements

2018 OESC Rule 10-210

Requires the “**Grounded Conductor**”
at each Consumer’s service to be
connected to:

- a “**grounding conductor**”; and
- the equipment bonding terminal
by a “**system bonding jumper**”



Consumer's Services

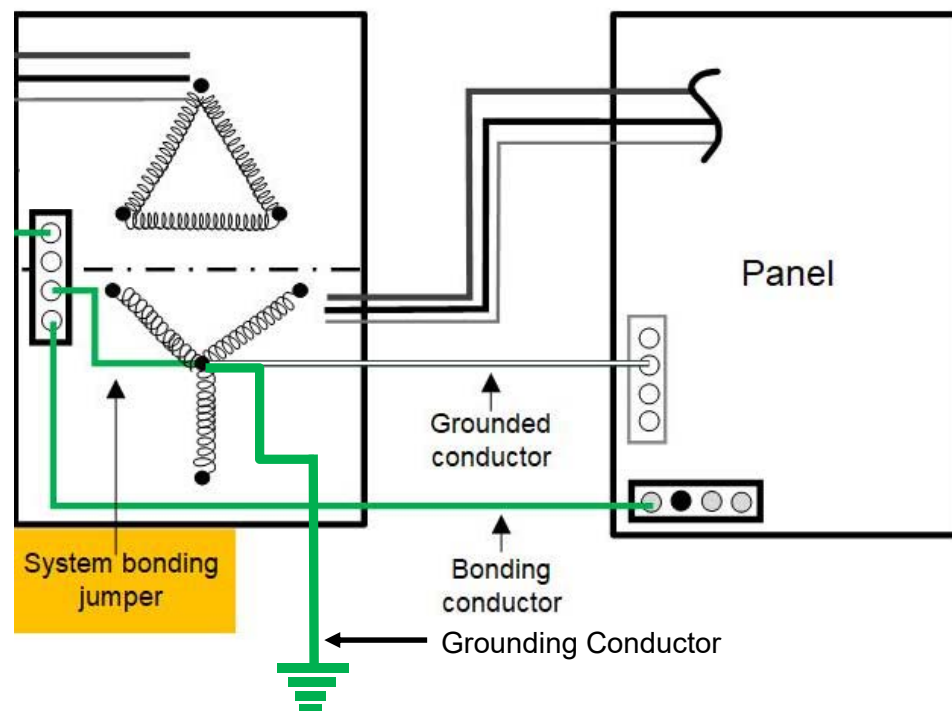
Separately derived ac systems, (Customer Owned transformers)

OESC Rule 10-212

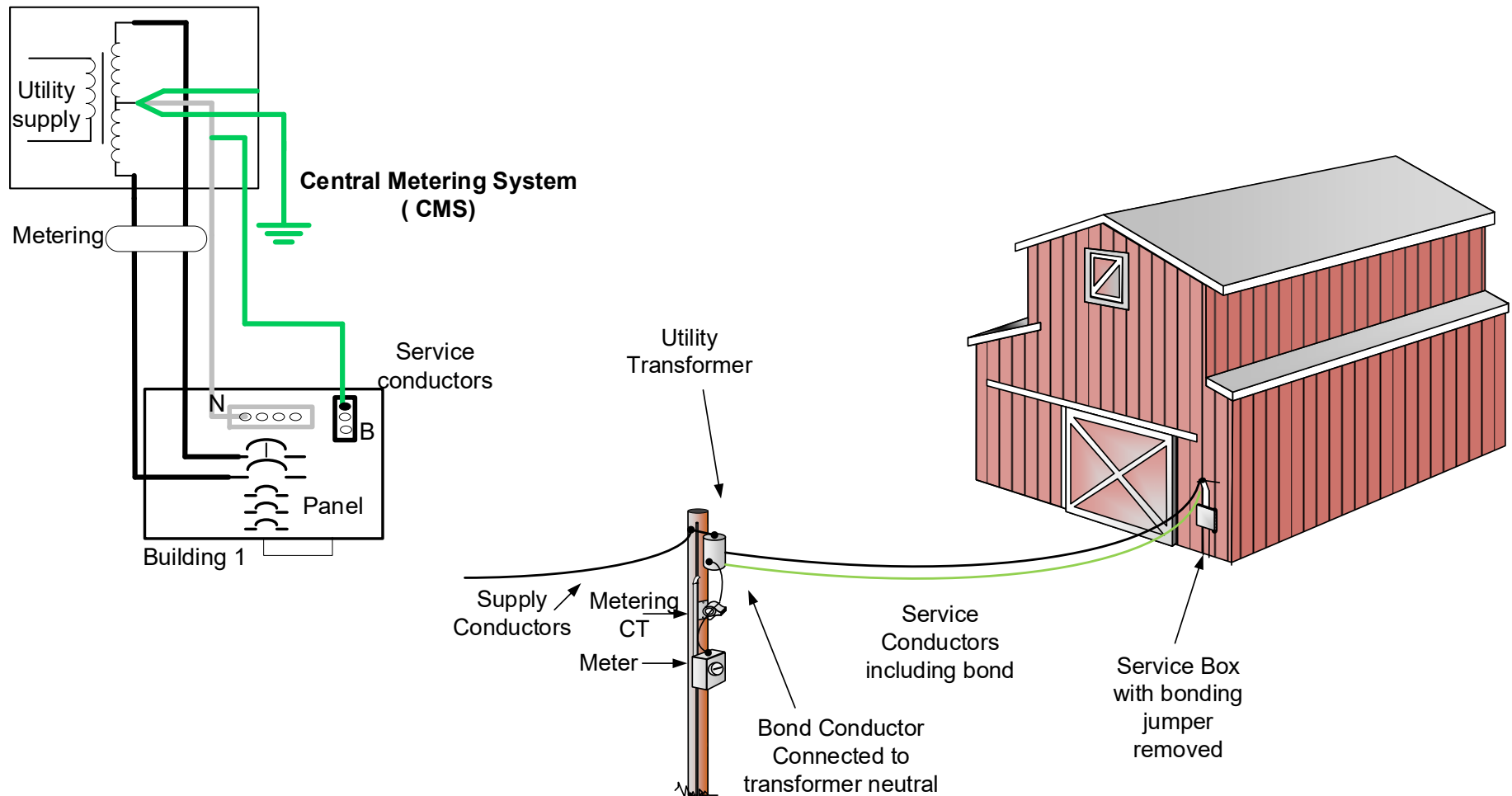
Requires the “**Grounded Conductor**” be connected to the equipment bonding terminal by a **system bonding jumper** at:

- the source; or
- the first switch controlling the system

* have no other connection to the non-current-carrying conductive parts of electrical equipment

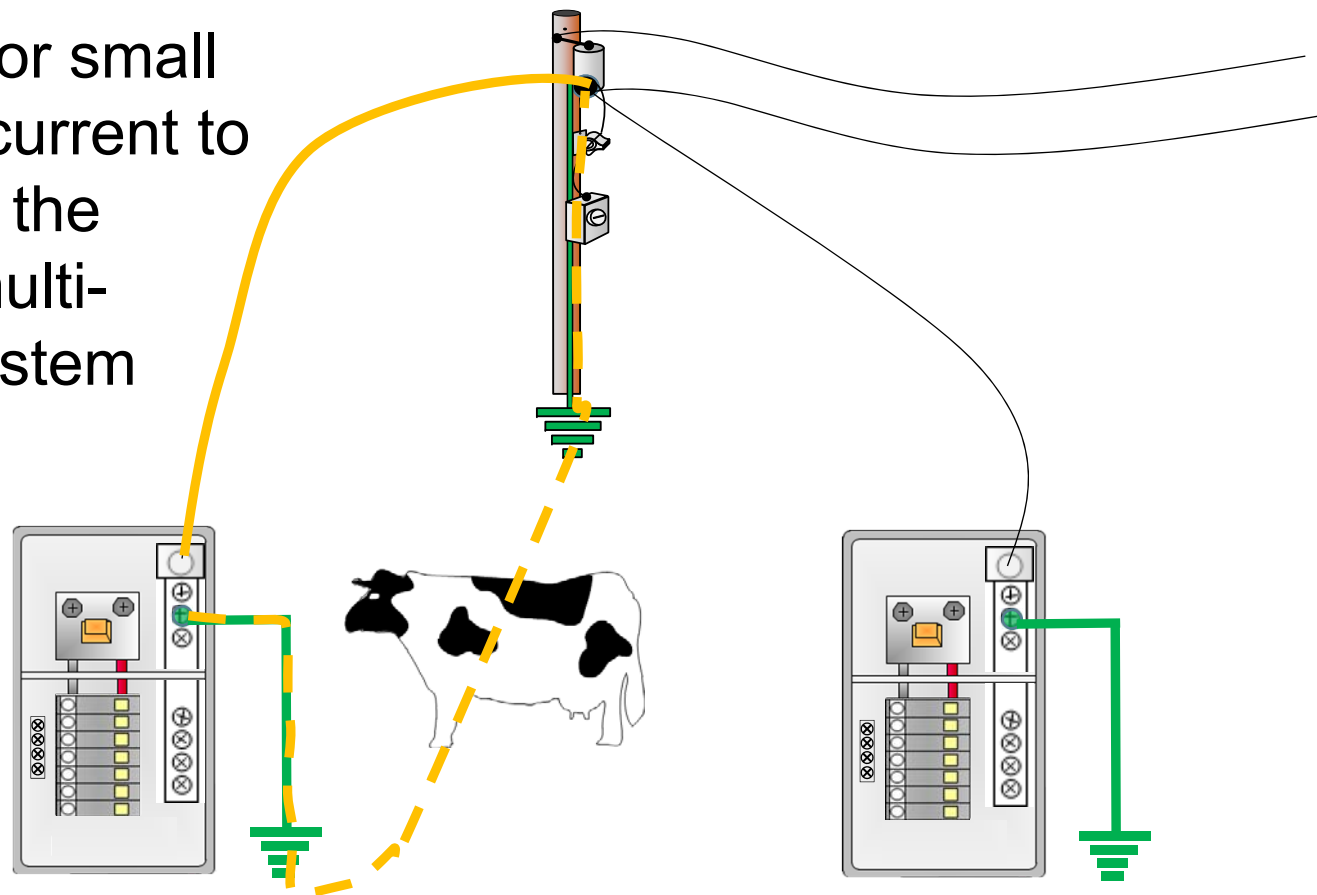


Connection of Bond Conductor to LDC Transformer



Stray Voltage – On Farms

It is normal for small amounts of current to flow through the earth on a multi-grounded system



Unlike humans, livestock are much more sensitive to current flow



LDC owned TX neutral:

For CM services, would the LDC permit the connection of a customer owned bonding conductor to the X2 point of the LDC transformer?

- This would be similar to OESC installations;
- Research has shown that this can sometimes help mitigate stray voltage;
- Allows customer to design solution (not always an issue)
- ESA would permit a deviation to Rule 10-210
(Grounding and Bonding at the Service Box)



Question:

ESA is reviewing OESC requirements for CM services:

1) Do all LDCs have CM services?

2) Looking for participants in the review of CM service requirements in OESC (Overhead/Underground)?

Bulletin 2-10-12

Electrical equipment near combustible gas equipment

Rule 2-324 and 6-408

Issued October 2018
Supersedes Bulletin 2-10-11

Rule 2-324 states that the clearance between arc-producing electrical equipment and a combustible gas relief device or vent shall be in accordance with the requirements of CSA B149.1, “Natural gas and propane installation code,” which uses the terms “source of ignition” and “discharge openings of relief devices.”

Questions have been asked regarding the specific types of electrical equipment covered by the rule.

Arc-producing electrical equipment which is considered a source of ignition includes, but is not limited to: receptacles, switches, meter base plug in transfer devices, meter base plug in devices with an internal service disconnecting feature, electric metering equipment with an internal service disconnecting feature, air conditioning units, and related disconnecting means. This interpretation is consistent with the rules concerning the use of electrical equipment in Class 1 Zone 2 locations.

Meter bases, conventional mechanical meters and conventional smart meters are not a source of ignition, and are permitted to be located within 1 metre of a natural gas discharge opening and 3 metres of a propane gas discharge opening. A meter is considered a conventional meter if it does not contain an internal service disconnecting feature.

All sources of ignition, regardless of the date of installation, shall be kept outside of the clearance shown in Figure B1. Meter mounting device (meter base) locations, as per Rule 6-408(f), shall be in compliance with the requirements of the supply authority.

Direction

For the application of Rule 2-234

The following equipment is not considered a source of ignition:

1. Conventional mechanical meters (Photo B1); and
2. Conventional smart meters, no service disconnecting feature (Photo B2).

The following equipment is considered a source of ignition:

1. Electrical metering equipment (e.g. smart meters) with an internal service disconnecting feature (Photo B3);
2. Meter base plug in transfer devices (Photo B4); and
3. Meter base plug in devices with an internal service disconnecting feature, including remote disconnects (Photo B5).

Photo B1



Photo B2



Photo B3



Photo B4



Photo B5

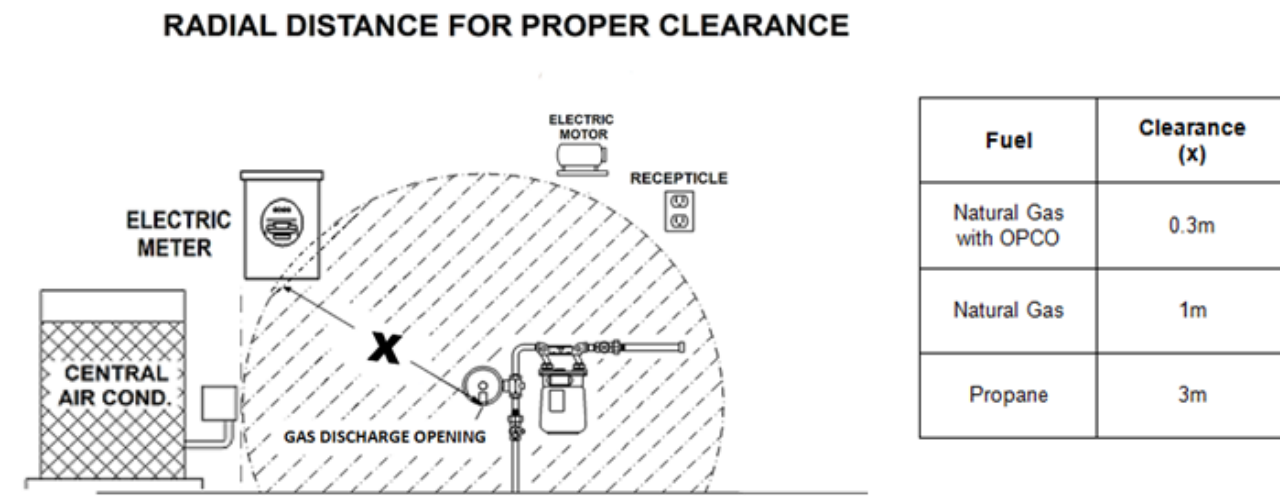


Note

To confirm the meter type, contact the supply authority.

Figure B1 illustrates an example of an installation that complies with the minimum requirements.

Figure B1 - Minimum clearance required between electrical equipment and gas discharge opening according to CSA B149.1



Question

Is it permitted to install arc producing electrical equipment which are considered a source of ignition (e.g. A/C unit) at a distance of less than 1 m from the discharge opening of a natural gas relief device or vent?

Answer

No, unless a certified Overpressure Cut-Off (OPCO) with limited relief (LR) or no relief (P) is installed. In this case, sources of ignition may be installed no closer than 0.30 m (1 ft.) from the gas discharge opening of the relief device. The over pressure relief device must be marked “LR-OPCO” or “P-OPCO” (see the example in Photo B6).

Photo B6 – OPCO Device



Background

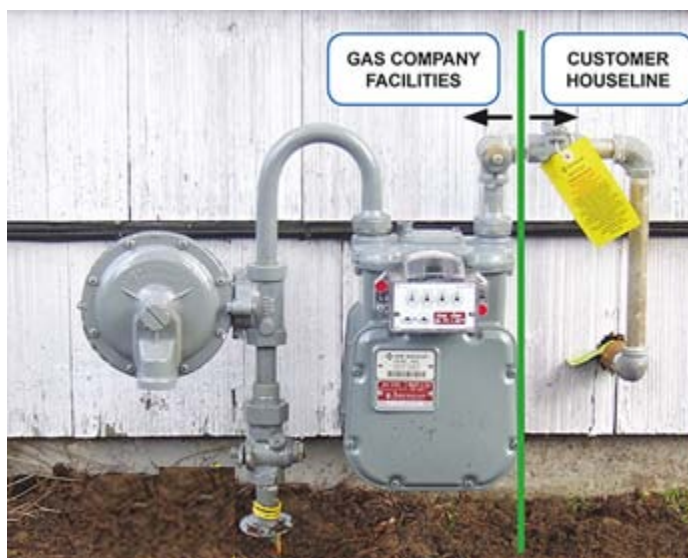
CSA-B149.1 - Code Adoption Document Amendment FS-225-17 of the “Natural Gas and Propane Installation Code” Section 5.5.9 contains:

- Table 5.2 lists the “Clearance from discharge openings of relief devices located in supply lines”. For a natural gas certified OPCO conforming to ANSI Z21.80/CSA 6.22, the clearance from a source of ignition is 0.3 m. Table 5.2 is used when the relief device is located downstream of the utility termination.
- Table 5.3 lists the “Clearance from discharge openings of service relief devices”. For natural gas service regulators certified to CSA 6.18, incorporating OPCO system and with limited relief of 1.5 m³/h (50 scf/h), the clearance from a source of ignition is 0.3 m. Table 5.3 is used when the relief device is located upstream of the utility termination.

Photo B7 is provided to show the demarcation point and shows a relief device that is located upstream of the utility termination.

On residential sites where there is very little space to obtain the required clearance of 1 m, the use of a natural gas certified OPCO regulator is an acceptable solution to the problem of separation. This may be applied for any type of equipment that is considered a source of ignition located at a distance of less than 1 m from the discharge opening.

Photo B7 – Typical Demarcation





Identifying Electrical Meters that are a Source of Ignition

Utility Regulations

Utility Advisory Council

February 14, 2019



Background

- The Ministry of Government and Consumer Services, has received concerns from the Canadian Propane Association (CPA). These concerns were shared with ESA and the Technical Standards and Safety Authority (TSSA)
- Some propane installations were being rendered non-compliant with applicable *propane safety codes* by the TSSA.
- Specifically, certain smart meter installations were not meeting separations for existing propane installations. Corrective Actions were being required of the propane installers, to meet a 3m separation.

Identifying Electrical Meters that are a Source of Ignition

The following equipment is considered a source of ignition:

1. Electrical metering equipment (e.g. smart meters) with an internal service disconnecting feature (Photo B3);
2. Meter base plug in transfer devices (Photo B4); and
3. Meter base plug in devices with an internal service disconnecting feature, including remote disconnects (Photo B5).



Photo B3



Photo B4

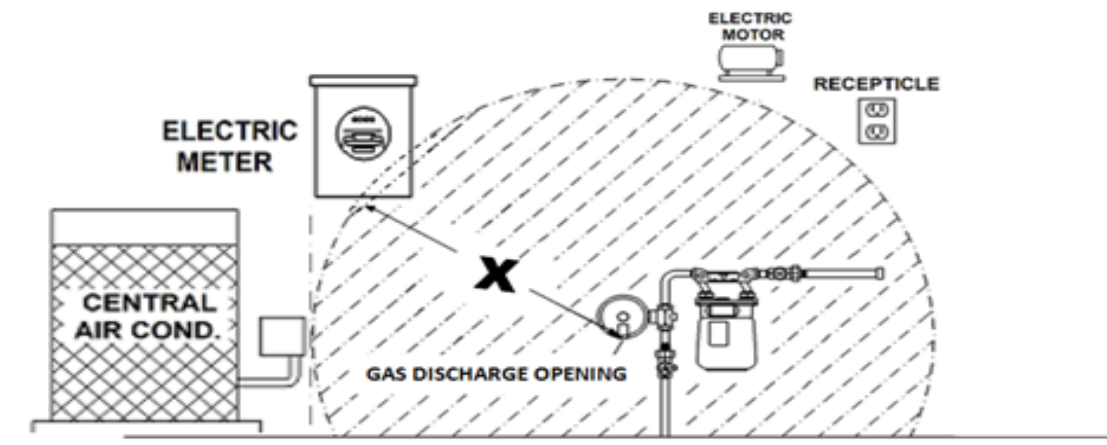


Photo B5

Identifying Electrical Meters that are a Source of Ignition

The electricity revenue metering standard ([UL2735C](#)) will require a Switch Pictogram on the meter, once the standard is finalized. This will indicate to gas installers and LDC staff when the meter will be classified as a “Source of Ignition”.

RADIAL DISTANCE FOR PROPER CLEARANCE



| Fuel | Clearance (x) |
|-----------------------|---------------|
| Natural Gas with OPCO | 0.3m |
| Natural Gas | 1m |
| Propane | 3m |

Identifying Electrical Meters that are a Source of Ignition

ESA and our Ministry are seeking information on the following questions.

1. Have LDCs heard about this concern?

2. If Yes:

- How often do you hear about this concern?
- Do Propane Installers typically contact LDCs about their concerns?

Identifying Electrical Meters that are a Source of Ignition

ESA is seeking this Advisory Council's advice on how to inform any person when the electricity meter they are looking at is a "Source of Ignition".

| Options | Pro | Con |
|--|---|---|
| 1. List Model Numbers – with service disconnecting feature | <ul style="list-style-type: none">Anticipating that the list is short | <ul style="list-style-type: none">If new models arise the list needs to be updated and communicated to installersList may miss a model # |
| 2. List Model Numbers – without service disconnecting feature | <ul style="list-style-type: none">If a model is not found on the list, installer would default to enforcing the separation requirements | <ul style="list-style-type: none">List is long |
| 3. LDC Contact Information – respond to Questions | <ul style="list-style-type: none">Provides the most detail | <ul style="list-style-type: none">Resource likely not currently availableMay be administratively burdensome to the installer and LDC |
| 4. Working Group | <ul style="list-style-type: none">Provides more time for thought | <ul style="list-style-type: none">May not respond to concerns in a timely matter |
| 5. Other, e.g. more than one option or modification of options | | |



Certificates of Approval - Professional Engineers and Section 7

Utility Regulations

Utility Advisory Council

February 14, 2019



Certificates of Approval - Professional Engineers and Section 7

ESA is attempting to provide clarification regarding the Professional Engineers and Section 7, in regards to their “Practising Status”.

Engineers have a status of either:

1. Practising / Non-Practising / Undeclared
2. Current / Cancelled / Revoked / Resigned / Suspended

For Regulation 22/04 does “Practising Status” and/or “Licence Status” matter?

Certificates of Approval - Professional Engineers and Section 7

DEFINITIONS – “Practising Status”

1. A status of **practising** is a declaration by the individual that he or she is engaged in the practice of professional engineering in Ontario.
2. A status of **non-practising** indicates the individual has either self-declared they are not currently practising professional engineering (although they may be eligible to do so) or that the individual is not permitted to engage in the practice of professional engineering in Ontario. If a person is not permitted to practise professional engineering in Ontario, additional information will be included in the fields for licence status or terms and conditions.
3. A status of **undeclared** indicates the individual has not identified to PEO whether they are a practising or non-practising licence holder.

Certificates of Approval - Professional Engineers and Section 7

DEFINITIONS – “Licence Status”

1. **Current:** A current licence holder who is licensed to practise engineering in the province of Ontario.
2. **Engineering Intern (EIT):** A non-practising engineer in training who is not licensed to practise yet.
3. **Cancelled:** Date licence cancelled. Name, licence number, date of licensure, licence and academic profile still publicly available.
4. **Revoked:** Date licence revoked. Name, licence number, date of licensure, licence and academic profile still publicly available.
5. **Suspended:** Date licence suspended. Name, licence number, date of licensure, licence and academic profile still publicly available.
6. **Resigned:** Date licence resigned. Name, licence number, date of licensure, licence and academic profile still publicly available.

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2. A status of **undeclared** indicates the individual has not identified to PEO whether they are a practising or non-practising licence holder.

Certificates of Approval - Professional Engineers and Section 7

Advice:

How do I know whether I am considered to be a “practising” or “non-practising” licence holder?

A: A person is considered to be practising professional engineering if he or she is carrying out any act of designing, composing, evaluating, advising, reporting, directing or supervising, or the managing of any of these acts and those acts:

1. involve the safeguarding of life, health, property, economic interests, the public welfare or the environment, and
2. require the application of engineering principles.

The definition applies to all situations where this particular combination of intellectual activity, societal protection and methodology exists regardless of whether the position is in industry, government or consulting. A person does not have to be employed in a firm holding a Certificate of Authorization in order to be classified as practising. Nor does a person have to seal engineering documents.

A person is considered non-practising if he or she is licensed by Professional Engineers Ontario but is retired, unemployed, on leave, or employed in a position that does not involve carrying out any of the acts described in the “practising” definition. When on fee remission, a person cannot engage in any practice activity for any purpose whether paid or unpaid. **Others who self-identified as non-practising retain full right of practice and can engage in any practice actively as long as it is done in full compliance with the *Professional Engineers Act* and its regulations.**

Source: http://www.peo.on.ca/index.php?ci_id=30417&la_id=1

Certificates of Approval - Professional Engineers and Section 7

REGULATION 22/04 EXCERPT – Section 7

Approval of plans, drawings and specifications for installation work

(2) Review and approval of plans, standard design drawings and standard design specifications under this section shall be carried out,

(a) **by a professional engineer**, who may or may not be the professional engineer who prepared the plans or assembled the standard design drawings or standard design specifications; or

No Mention of “Practising Status”

Certificates of Approval - Professional Engineers and Section 7

Advice:

In the councils opinion is this something that requires addressing by ESA?

1. Does the recording the status of “Practising” matter?
2. Does the recording the status of “Current” matter?
3. Does the P.Eng require the status of “Practising” when signing for any sections under Regulation 22/04?
4. Does the P.Eng require the status of “Current” when signing for any sections under Regulation 22/04?

Electrical Distribution Safety

DISTRIBUTION COMPANY AWARENESS

The intent of this bulletin is to clarify ESA's recommendations and the process ESA will follow, in the event ESA is notified of LDC structures (e.g. poles) installed on the roadway side of curbs.

ESA RECOMMENDS

When LDCs own structures located in the roadway or on the roadway side of the *curb* and the LDC's practices do not recognize these installations do not comply with CSA C22.3 No. 1, Section 5.6.3 - Horizontal separation from *curbs*. ESA recommends that these LDCs have an approved process or other documentation for staff detailing how to address structure replacement and installation work (e.g. like-for-like replacements, emergency work, etc...). A *curb* is being defined by ESA as a raised edge built along a roadway.

It is recommend that the approved process include information regarding how the LDC's primary design goal is to meet the requirements in CSA C22.3 No. 1, (e.g. Section 5.6.3 - Horizontal separation from *curbs*). Alternatively, where poles cannot be installed out of the roadway to meet CSA, the LDC shall document the deviation from the required standards, as per Section 9 of Regulation 22/04. LDCs may wish to consider establishing a standing deviation for this clause of the standard. More information can be found in the Distributor Bulletin entitled "Certificate of Deviation – Certified Lists". If an LDC creates a standing deviation for this clause, ESA recommends including detailed instructions and limiting criteria for its use.



ESA's PROCESS

1. For installations where ESA is informed of an existing location where structures are installed on the roadway side of curbs, ESA will issue the LDC a Public Safety Concern (PSC) letter.
 - PSCs where ESA identifies a significant concern with the structure, such as (i) major damage to a pole or (ii) where a pole is located in a significantly hazardous location (e.g. middle of a road), the letter will state that a response is required.
 - PSCs where the structure presents less concern, the letter will state that a response is not required.
2. ESA may also initiate a Compliance Inquiry with an LDC in regards to structures installed on the roadway side of curbs, to determine if the LDC is in compliance with Regulation 22/04. LDCs can demonstrate compliance with the Regulation by satisfying the elements identified in the section above entitled ESA RECOMMENDS.

Notes:

- 1) Under a Compliance Inquiry, ESA will consider poles installed that do not meet horizontal separation from curb requirements to be a possible safety concern. Any structure replacement or structure installation work performed under Regulation 22/04 (e.g. like-for-like replacements, planned work, etc...) that locates a pole less than 150mm from the edge of a curb measured away from the travelled portion of the roadway, will require either (i) corrective action or, (ii) a documented deviation from the standard as per Section 9 of Regulation 22/04, in order to demonstrate compliance with Regulation 22/04.
- 2) Where the road authority undertakes a road widening program or similar, resulting in a pole existing in the roadway, ESA will treat these scenarios as PSCs.

Electrical Distribution Safety

CSA C22.3 No. 1 EXCERPT

5.6.3 Horizontal separation from curbs

5.6.3.1 - Structures shall be located at least 150 mm from the edge of a curb, measured away from the travelled portion of the roadway.

(ESA Note: Similar wording exists in every revision of the CSA Standard, since 1970)

REGULATION 22/04 EXCERPT

Deviations from required standards

9. (1) Where a distributor upgrades the distribution lines of a distribution system such that the system does not meet the standards for clearances and separations in respect of distribution lines referred to in subsection 5 (2) or (3), the distributor may still put the system into use if a professional engineer certifies that,

(a) the reason for failing to meet the standards was a lack of space; and

(b) the failure to meet the standards will not materially affect the safety of any person or property.

(2) If a distributor replaces a part or portion of an existing distribution system with a part or portion that is similar to the part or portion being replaced but that part or portion does not meet the safety standards set out in section 4, the distributor may put the system into use as long as no undue hazard to the safety of any person is created by doing so.

ADDITIONAL INFORMATION

Information requests and follow-up may be directed to ESA at Utility.Regulations@ElectricalSafety.on.ca. For questions on this bulletin please be prepared to quote Bulletin "DB-XX/YY".



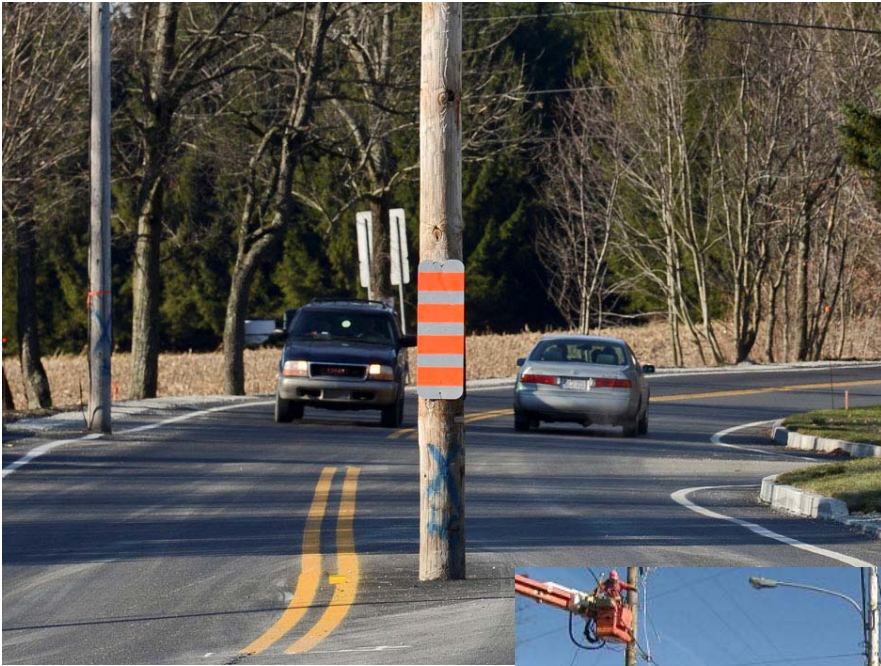
Structures Located on Roadway Side of Curbs

Feedback

Utility Regulations
Utility Advisory Council
February 14, 2019



Structures Located on Roadway Side of Curbs



Structures Located on Roadway Side of Curbs

CSA 22.3 No.1 – Excerpts

5.6.3 Horizontal separation from curbs

5.6.3.1

Structures shall be located at least 150 mm from the edge of a curb, measured away from the travelled portion of the roadway.

*** A *curb* is being defined by ESA as a raised edge built along a roadway



Structures Located on Roadway Side of Curbs

Action Item – Working Group to Review and Recommend Changes to the Proposed Bulletin from the UAC Meeting (October 10, 2018).

Update – Working Group completed their work and the bulletin in the pre-read was supplied. The Working Group advised ESA that the bulletin could be complied with, with the amendments made to the previous draft edition.



Structures Located on Roadway Side of Curbs

Highlights

- ESA is making only Recommendations, No Directions.
- LDCs with structures not meeting the horizontal separation and it isn't addressed elsewhere (approved standards), should have direction for staff on how to deal with these structures.
- ESA is looking to minimized the number of these pole locations in Ontario.
- The PSC process that ESA will follow, for communication purposes with the LDC are defined.

Section 10

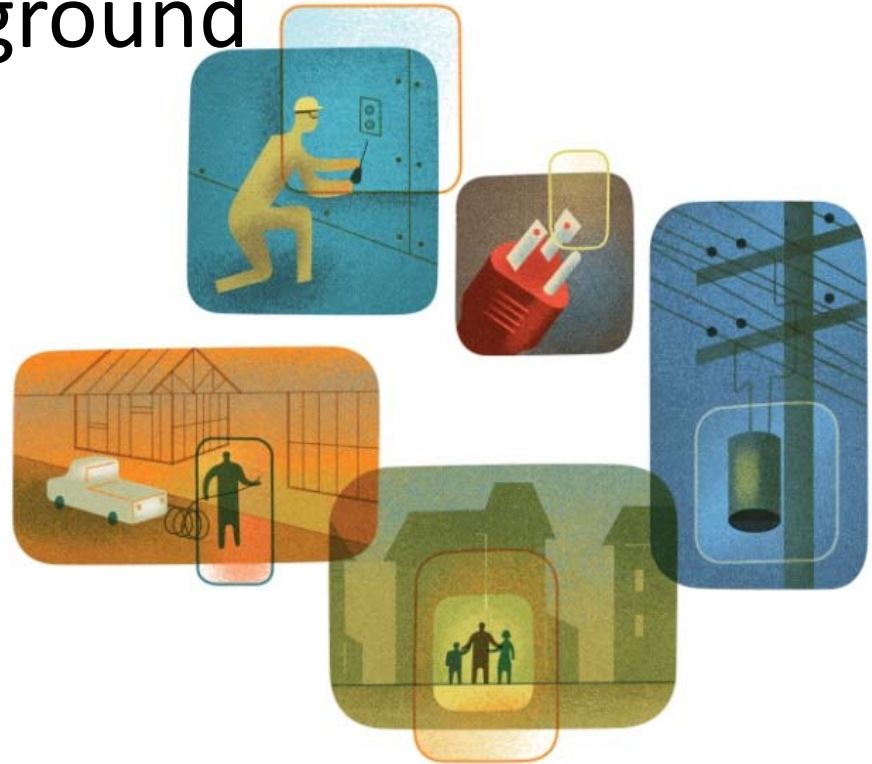
Proximity to Distribution Lines



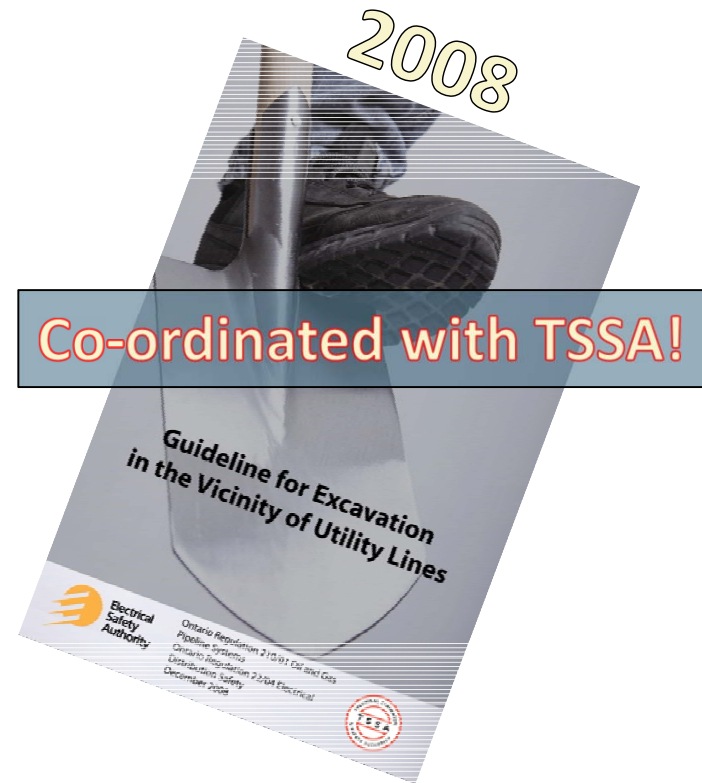
Martin Post
UAC Feb. 14, 2019

Part 1

Interim Guideline for Excavating in the Proximity of Underground Distribution Lines



The Previous Guideline Editions



2018 Revision Discussions

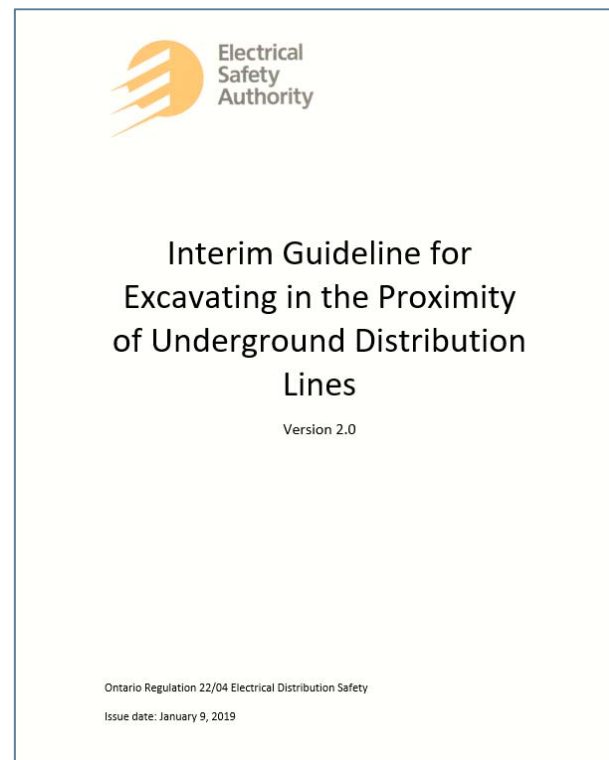
In 2017, ESA and TSSA began a review of the existing guideline with goal to update. Talks grew in scope to include other interested parties.

In 2018, discussions between the ESA, TSSA, Ontario One Call, MOL and MGCS concluded.

Outcome:

There will not be a guideline including multiple regulators, so ESA will move forward with an ESA only guideline

Interim guideline posted on ESA website Jan 9, 2019



What changed in the Interim Guideline?

- Focussed on what the Regulation requirements are and how to comply with the Regulation;
- Aligned the guideline with the style of the other Regulation 22/04 guidelines;
- Removed “How To” instructions – how to locate, how to dig, etc.;
- Simplified the presentation of the requirements since the target audience of the guideline is not only LDCs;
- Removed references to TSSA regulation requirements;
- Added Complaints Process information.



Part 2

Guideline Review - Section 10 Guideline



Proposed Approach

Combine Proximity to Overhead Equipment with Excavating guideline into a new Section 10 guideline “Working in Proximity to Electrical Distribution Lines’ guideline

Section 10 is unique for Reg. 22/04. Only section that includes non-LDCs as part of “regulated audience”

Initial Goals


- How-to comply with Reg. 22/04
- Incorporate 15 years of experience
- Harmonization with some definitions with CSA Z247?
- Tailor to target audience(s) – LDCs? External? Both?
- Owned & maintained by ESA



Proposed Approach

Next steps

- Confirm priority of this versus other guideline reviews



Proposed schedule – Order in which to address guidelines

- 1) **Year 1 - Guideline for Excavation in the Vicinity of Utility Lines (Section 10)**
- 2) Year 1 - Guideline for Third Party Attachments (Section 7 & 8)
- 3) Year 2 - Technical Guideline (Section 7)
- 4) Year 2 - Technical Guideline (Section 8)
- 5) Year 3 - Technical Guideline (Section 6)
- 6) Year 4 - Guideline for Change of Ownership (Section 3)
- 7) **Year 4 - Guideline for Proximity to Distribution Lines (Section 10)**
- 8) Year 4 - Guideline for Disconnecting Unused Lines (Section 11)
- 9) Year 5 - Guideline for Reporting of Serious Electrical Incidents (Section 12)
- 10) Year 5 - Guideline for Audit (Section 13)
- 11) Year 5 - Guideline for Declaration of Compliance (Section 14)

Proposed Approach

Next steps

- Confirm priority of this versus other guideline reviews
- Form working group for new section 10 guideline
- Working group finalize combined guideline

Potential working group members

- ESA
- LDCs
- Invite to observe/participate Ont1Call, ORCGA (excavating representative)?



UAC Feedback

Does the UAC support:

- 1) The proposed approach of developing a Section 10 guideline that is a combined underground and overhead guideline?
- 2) A working group?



The End

UAC COUNCIL - 201~~97~~-20~~2018~~ Workplan

February 201~~97~~

| | As required | Feb 201 97 | May 201 97 | Oct 201 97 | Dec 201 97 | February 20 2018 | May 20 2018 | Oct 20 2018 | Dec 20 2018 |
|--|----------------|-----------------------|-----------------------|-----------------------|-----------------------|--------------------------------|------------------------|------------------------|------------------------|
| <i>Regulation 22/04:</i> | | | | | | | | | |
| Compliance Assessment Overview | | | | | X | | | | X |
| Auditor Debrief | | | | | X | | | | X |
| Guideline Revisions | X | | | | | | | | |
| Bulletins & Best Practices <ul style="list-style-type: none"> New Bulletins Best Practices in Historical Bulletins | X | | | | | | | | |
| Notable Compliance Issues | X | | | | | | | | |
| Continuing Education | X | | | | | | | | |
| <i>Powerline Safety</i> | | | | | | | | | |
| Community Powerline Safety Alliance | | ✗ | X | ✗ | ✗ | X | ✗ | ✗ | ✗ |
| Notable Electrical Incidents | X | | | | | | | | |
| Public Safety Concern Overview | | | | X | | | | X | |
| Powerline Safety Week | | X | X | X | | X | X | X | |
| Holiday Safety Campaign | | | | | ✗ | | | | ✗ |

| | As required | Feb 201 9 ⁷ | May 201 9 ⁷ | Oct 201 9 ⁷ | Dec 201 9 ⁷ | February 20 20 ¹⁸ | May 20 20 ¹⁸ | Oct 20 20 ¹⁸ | Dec 20 20 ¹⁸ |
|--|----------------|-----------------------------------|-----------------------------------|-----------------------------------|-----------------------------------|--|------------------------------------|------------------------------------|------------------------------------|
| Report on New Safety Data | | | | X | | | | X | |
| Public Electrical Safety Award Winners | | | | X | | | | X | |
| <i>OEB Safety Metric</i> | | | | | | | | | |
| ESA Corporate Strategy: Progress Report | | | <u>X</u> | ✕ | | | <u>X</u> | ✕ | |
| <i>Council Management:</i> | | | | | | | | | |
| <u>BI</u> -Annual survey & results | | <u>X</u> | ✕ | ✕ | | | X | X | |
| Member term renewal | | X | | | | | | | |
| New member recruitment & Orientation | X | | | | | | | | |
| Terms of Reference Review | | | | | X | | X | | |
| Chair & Vice Chair election | X | | | | | | | | |
| Meeting scheduling | | | | | X | | | | X |
| Financial Update | | | | | X | | | | X |



Utility Advisory Council

February 14, 2019





Agenda

- RBO Overview
- ACP Program
- Pre-Authorized Eligibility/Connections
- Next Steps

What Does Risk-based Oversight (RBO) mean?

- Oversight of electrical installations is based on an assessment of the safety risk of the installation:

The likelihood an incident will occur

&

If it does, the severity of the incident

- Safety risk will be determined by:

who does the work

what the work is

where the work is

- By 2020, ESA will process all electrical wiring applications using this RBO safety risk model:
 - residential and commercial
 - new and renovation work

ACP Incorporated into RBO

In 2020, **all** Contractors will benefit from RBO and be eligible for:

Pre-Authorized Connections

- Residential service upgrades or alterations $\leq 200\text{amp}$
- Commercial service upgrades or alterations $\leq 400\text{amp}$
- Services that are disconnected and required same day reconnect
- Preplanned work at least 24 hrs notice
- LEC contacts ESA CSC with outage date; CSC issues CA to Supply Authority.
- Inspection not required but will follow risk bucket low medium high responses.

Emergency Connections

In 2020, **all** Contractors will benefit from RBO and be eligible for:

Same Day Emergency Connections:

- Same day emergency connection for events like wind storms, tree limb falling on line, broken meter and so on.
- Damaged stack, pole, replacement main breaker, broken jaw etc
- Inspection not required but will follow risk bucket low medium high responses.

After Hours Emergency Connections:

- As above
- In collaboration with On Call Inspector who will arrange connection with LDC



RBO Benefit Eligibility

All Contractors will be eligible for these benefits in 2020 if:

- You maintain a defect ratio of less than 4 or 10% (depending on the benefit)
- 5 permits in the last 12 months on that stream of work
- You take out more than 10 notifications in a 12-month period
- Can lose privilege when defect ratio is more than 10% for 3 consecutive months
- Need 3 consecutive month of good performance to get it back

Incorporating ACP into RBO

No “grandfathering” for ACP Accounts

- Early in 2019, defect ratios will be communicated to all LECs
- New accounts require at least 10 site visits on specific line of business
- Pre Auth Eligibility will be clearly identified on the Contractor Look up tool on ESA’s website



Next Steps

- Does the Utility literature reference ACP?
- Utility processes that reference ACP?
- How can ESA communicate this to all LDC's?
- Do you anticipate any transition issues?



Questions?



UAC Member Survey 2019

Feb 2019





UAC Member Survey 2018

47% Response Rate

Accomplishments – 2018

Major Accomplishments

- Introducing new technologies/DER type discussions and seeking feedback from the council
- Reporting of serious incident guidelines
- Input into scorecard
- Revising O. Reg 22/04
- Input into OESC changes, transformer configurations, storage and generator, guideline on damage to customer services

Looking Forward

UAC's Focus for 2019/2020

- *Rules and Guidelines on DER and energy storage*
- Emerging technologies and developing an effective framework for its application under Reg 22/04
- Updates to technical guidelines and supporting documentation for LDCs

What works for UAC

- *Council plays an important role in developing required regulations*
- Well Chaired
- A useful meeting – sharing information, seeking information, and direct dialogue with ESA SMEs
- Approachable staff, easy to discuss matters with

Challenges and Opportunities

- *ESA appears to have made decisions prior to coming to ESA*
- *Understanding how council feedback is communicated within ESA*
- When challenged as to why ESA acts in a certain way, does not provide background information
- How could council be more effective?
 - *Pre read with specific instruction regarding review, approval and endorsement*
 - Subcommittees for the more challenging discussions

Auditor Debrief

(Condensed Version)

November 9, 2018

Disclaimer

- The information in this presentation was prepared as discussion points for the auditor meeting. In some cases more information may be required to understand the issue fully as discussed during the meeting. For more information please contact martin.post@electricalsafety.on.ca or jason.hrycyshyn@electricalsafety.on.ca

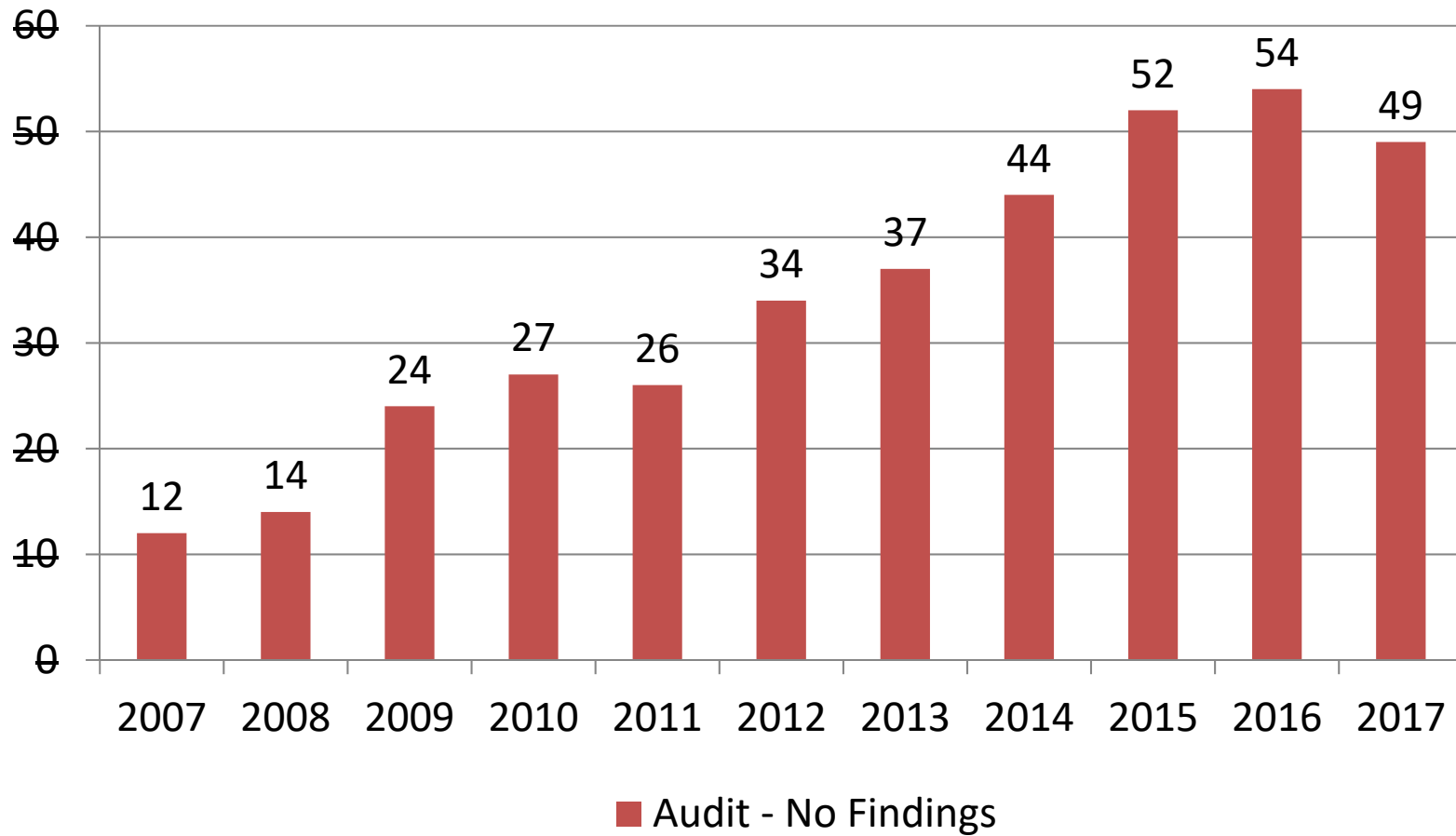
AGENDA

1. Review of 2017 Audit results
2. Key 2017 Audit Findings
3. 2018 Questions & Issues / Auditor Feedback
4. Focus of 2018 Audits
5. Other Information
 - a) Bulletins
 - b) Other Issues

Summary of Audit Findings for 2017

- Total of 68 LDC Audit reports
- 49 LDCs - Full Compliance ('16-54)
- 2 LDCs with Non-Compliance findings
- 18 LDCs - Needs Improvement only
- 11 LDCs with only one finding (NI or NC)
- 8 LDCs with two or more findings (NC or NI)
- 2 LDCs had more than 1 Non-compliance

Summary of Audit Findings Life to Date



Selected Audit Findings

- No overhead or underground inspections have been done since 2014
- Legacy or returned equipment in stores but no record of inspection/approval for use/re-use
- Major equipment returned directly from the field is inspected by warehouse personnel and returned to stock without any records of inspection confirming "no undue hazards".
- As-built drawing did not reflect changes (cross-arm installation) in the field
- Conditional certificate of approval from third party attacher
- Certificate of Deviation signed by non P. Eng.
- The operations clerk did the sign offs electronically but is not identified in the CVP as a qualified person.
- Record of Inspection/Certificate completion issues (different issues across multiple LDCs)

Auditor Question

Q. Can pictures be considered as partial/final "Record of Inspections" of underground trenching construction?

A. Pictures alone are not a Record of Inspection. An address, date and person inspecting ID is also important parts of the ROI. ESA is fine with pictures being used to supplement a Record of Inspection.

For example, if the workers working on the trench are not on the CVP and they wish to send in photos to a person that is on the CVP in order for the Record of Inspection and Certificate to be filled out ESA accepts that practice, as long as the LDC accepts that practice.

Auditor Question

Q. "If a merger occurs between Company A and Company B and in the past Company B has had audit results with needs improvements or non-compliance, what are the expectations of the merged company for resolving these comments?"

A. The merged company is seen to have a Needs Improvement and/or a Non-Compliance that they have to deal with.

A subsequent finding and should be noted. A N/I should be noted as a N/C the second time around, even in the event of a merger.

Focus of 2018 Audits

- Section 8
- Certificates of Deviation
 - ESA has noticed that construction that should have “Certificates of Deviation” do not always have them accompanying the design.
 - Best practice would be to sign a Certificate of Deviation in the events that the LDC is not meeting a “shall” clause in the standards (e.g. CSA) that relates to safety.
- Regulation 22/04 Amendments
 - What are the amendments and some impacts of those amendments.
 - Section 5 - CSA Standards
- CSA Clause 1.2 (CSA C22.3 - 2006 vs 2015)
 - ESA has noticed that some LDCs were not aware of the changes to the Overhead and Underground standard with respect to Clause 1.2.
 - ESA has noticed that there are some LDCs that are confused on the application of ESA bulletin DIB-0-08 entitled “CSA C22.3 Elucidation”.
- “Work Instructions” vs “Plans”
 - ESA has a concern that there may not be a clear delineation between “Work Instructions” and “Plans”.
 - ESA has a concern regarding the use and approval of “SPIDA Calc” and “PLS Pole”.
- “Delta – Wye” conversions
 - Update Auditors on this project, in the event you are asked questions.

Focus of 2018 Audits

Section 8

- Audits for 2016 and 2017 indicate a trend of increased findings for Records of Inspection and Certificates not being completed correctly or at all
- Causes?
 - changes in field staff/ Management?
 - Training?
 - Complacency?
- Auditors are directed to consider trending in each LDC they audit and mark as non-compliant if necessary

Focus of 2018 Audits

Certificates of Deviation

- For compliance with Regulation 22/04 ESA is reviewing direction to LDCs to complete “Certificates of Deviation” in the events that the LDC is not meeting a “shall” clause in the standards (e.g. CSA) that relates to safety.

Focus of 2018 Audits

Regulation 22/04 Amendments

- Amendments in Force, starting October 1, 2017.
- Are LDCs using the old version of Reg. 22/04?
- Section 5 Updates
 - Updates to CSA standards to 2015.
 - Updates to the OESC Section 86.
 - Update to NESC C2 2017.
- Other updates included outside of Audit scope.

Focus of 2018 Audits

CSA Clause 1.2 (CSA C22.3 - 2006 vs 2015)

2006: Existing installations, including maintenance replacements, **additions, and alterations**, meeting the original designs that currently comply with prior editions of this Standard, need not be modified to comply with this edition of the Standard, except as might be required for safety reasons by the authority having jurisdiction.

2015: Existing installations (including maintenance replacements **and maintenance alterations**) meeting the original designs that currently comply with prior editions of this Standard, need not be modified to comply with this edition of the Standard, except as might be required for safety reasons by the authority having jurisdiction.

Focus of 2018 Audits

CSA C22.3 No.1 – A.1.2

2015: The intent of this Clause is to permit overhead lines that have been constructed in compliance with a prior version of the Standard to remain in service in the event of a subsequent revision of this Standard, without being modified to comply with the revised Standard.

This Clause is not intended to permit the addition of new line sections, new conductors, new attachments, or new equipment to an existing line that do not comply with the current version of the Standard. Such new additions are intended to comply with the latest revision of the Standard.

Maintenance of an existing line, including repair, or replacement where necessary, of failed or failing components of the line (including poles, conductors and other equipment), is permitted without modifying the line to meet the latest revision of the Standard.

Focus of 2018 Audits

ESA has not removed nor revised the direction provided in DIB-03-08, which was drafted in accordance with the 2006 standard.

ESA is awaiting further analysis by the CSA Technical Committee, before ESA makes any changes.

LDCs however should be aware of this change in the CSA standards.

Focus of 2018 Audits

“Work Instructions” vs “Plans”

Question #1

If the design is based on a single standard (such as a residential service relocation), could the technician release a simple design based on the approved standard without the professional engineer’s approval?

Answer #1

Yes, the technician can release the “simple design” using the approved standard. The Certificate of Approval requirement of Section 7, would be with the Professional Engineer that approved the single standard.

Focus of 2018 Audits

“Work Instructions” vs “Plans”

Question #2

If the design is based on numerous standards that need to be properly assembled together and properly integrated with the existing system, is the technician required to get the design checked and stamped/sealed by the professional engineer or can the design be checked by his immediate supervisor who is not an engineer?

Answer #2

Depends.

If the numerous standards, approved by a Professional Engineer, are such that they can be assembled by a “competent person” (e.g. technician) then this would be considered a “Work Instruction” and the technician can release the “design”.

If the standards were not designed in such a fashion that they can be assembled by a “competent person” then the resulting multi-standard design work would be considered as a “Plan” and would require a Certificate of Approval for that “Plan”.

Focus of 2018 Audits

“Work Instructions” vs “Plans”

Answer #2 – Con’t

- **For simple multiple tangent lines** and some angled poles without equipment attachments, it is likely that the distribution line could be assembled by a “competent person” and none of the approved standards will be violated. Therefore, this job could be viewed as a **“Work Instruction”** and the P.Eng’s on the individual standards are the P.Eng’s for Section 7.
- **For more complex designs**, it is possible that the distribution line could be assembled by a “competent person” and none of the approved standards will be violated. However, there is a good chance that a complex design may/will violate some approved standards. ESA suggests that for **many complex designs these should be seen as a “Plan”** and a P.Eng sign the Certificate of Approval for Section 7 to cover the complex design.
 - Note #1 (typically relating to more complex designs): In the event that a “Work Instruction” (assembled approved, individual standards) is used for a design and that design violated some of the approved standards, ESA would find the LDC to be in Non-Compliance with Regulation 22/04.
 - Note #2 (typically relating to more complex designs): In the event that a “Work Instruction” (assembled approved, individual standards) is used for a design and that design did not violate some of the approved standards due to the wording of the approved standards, however created a safety issue, ESA may find the LDC in Compliance with Regulation 22/04 Section 7, and would evaluate whether to send the issue over to the PEO to investigate the P.Eng for Professional Misconduct 72(2) or Incompetence Section 28(3).
- **Example of Complex: The approved standards book doesn’t limit the amount of standards that apply to a single pole (Switches, Risers, Transformers, 4-circuits, etc... are all attached to a single pole), however the approved standards book technically doesn’t prevent the “competent person” from doing this.** The pole is “overloaded” but it is issued as a “Work Instruction”. The LDC may or may not technically meet the requirements of Regulation 22/04. The P.Eng may or may not technically meet the requirements of the PEO

Focus of 2018 Audits

“Work Instructions” vs “Plans”

Question #3

If the overhead design requires engineering calculations, such as guying and anchoring and therefore require the use of a non-linear analysis tool, such as SPIDA Calc. or PLS Pole, is the technician required to get the design checked and stamped/sealed by a professional engineer or can the design be checked by his immediate supervisor who is not an engineer?

Answer #3

Depends.

If a Professional Engineer signs off the use of SPIDA Calc or PLS Pole, as they would an approved standard (with a Certificate of Approval) or equivalently recognizes that the programs are harmonized with the standard, then the work can be considered a “Work Instruction” and the Certificate of Approval would be with the Professional Engineer that approved the use of the program.

Focus of 2018 Audits

“Work Instructions” vs “Plans”

For example, the Professional Engineer recognizes that the program (e.g. SPIDA Calc or PLS Pole) aligns with the approved standards then that tool can be used for the calculations. If the program produces numbers that meet the requirements of the approved standard then the “competent person” can assemble the information and this would be considered a “Work Instruction” and the design can release by the technician. If the information produced by the program does not meet the requirements of the approved standard (e.g. too much deflection in the structure) then the information should not be used, without a “Certificate of Deviation” or some other sort of Professional Engineer approval.

Note: If the standard does not contain any limitations (e.g. restricting the deflection) and it should, then it would technically be approved under Regulation 22/04, however ESA would likely be forced to bring this information to the attention of the PEO in the event there was a concern regarding Negligence and/or Incompetence with the Professional Engineer.

Bulletins published

Bulletins

[DB-02-18 Distribution Stations Standard - CAN/CSA-22.3 No. 61936-1](#)

[DB-03-18 Engineering Practices and Regulation 22/04 - Sections 4 & 5](#)

[DB-04-18 Electrical Work and Service Connections](#)

Flash Notices

[FN-01-18 \(Phase 1\) 3-Phase, 3-Wire, Solidly-Grounded Wye Customer Services](#)

FN-01-18 (Phase 2) 3-Phase, 3-Wire, Solidly-Grounded Wye Customer Services
- Proposals

FN-01-18 (Phase 2) 3-Phase, 3-Wire, Solidly-Grounded Wye Customer Services
- Corrective Action Proposal Worksheets

FN-01-18 (Phase 2) 3-Phase, 3-Wire, Solidly-Grounded Wye Customer Services
- Complete

Other Issues

1. Configurations of Concern
2. Energy Storage & Generation
3. Audit of Compliance Assessment process for LDC Scorecard
4. Review of all guidelines by UAC/working groups
5. Substation standard CAN/CSA-C22.3 No.61936-1

- Any Questions?



3-Phase 3-Wire Solidly-Grounded Wye Customer Services

Feedback

Utility Regulations

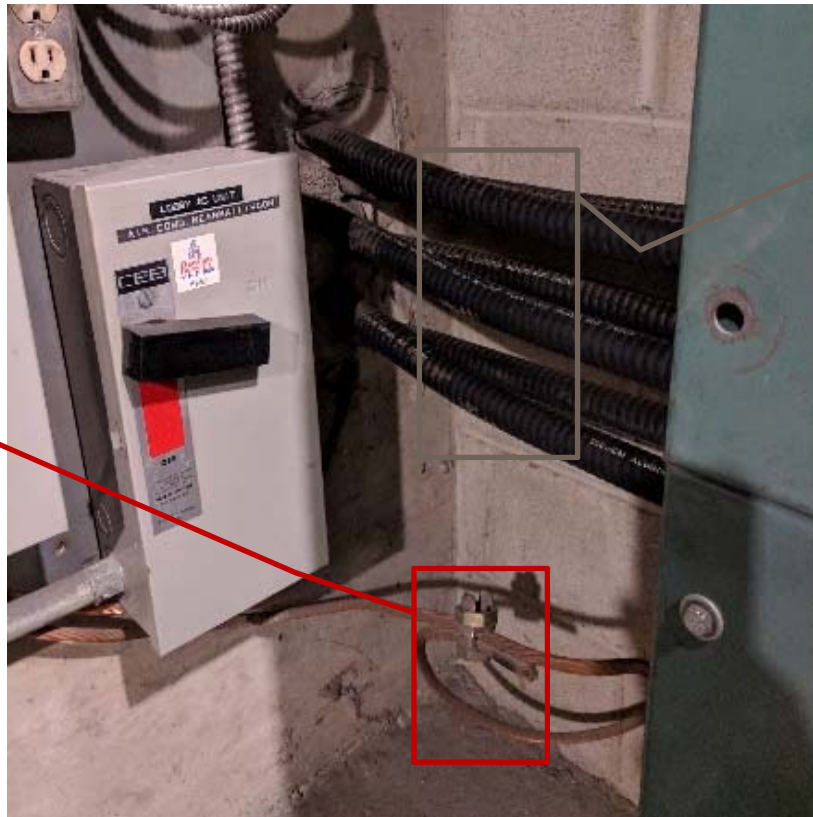
Utility Advisory Council

February 14, 2019



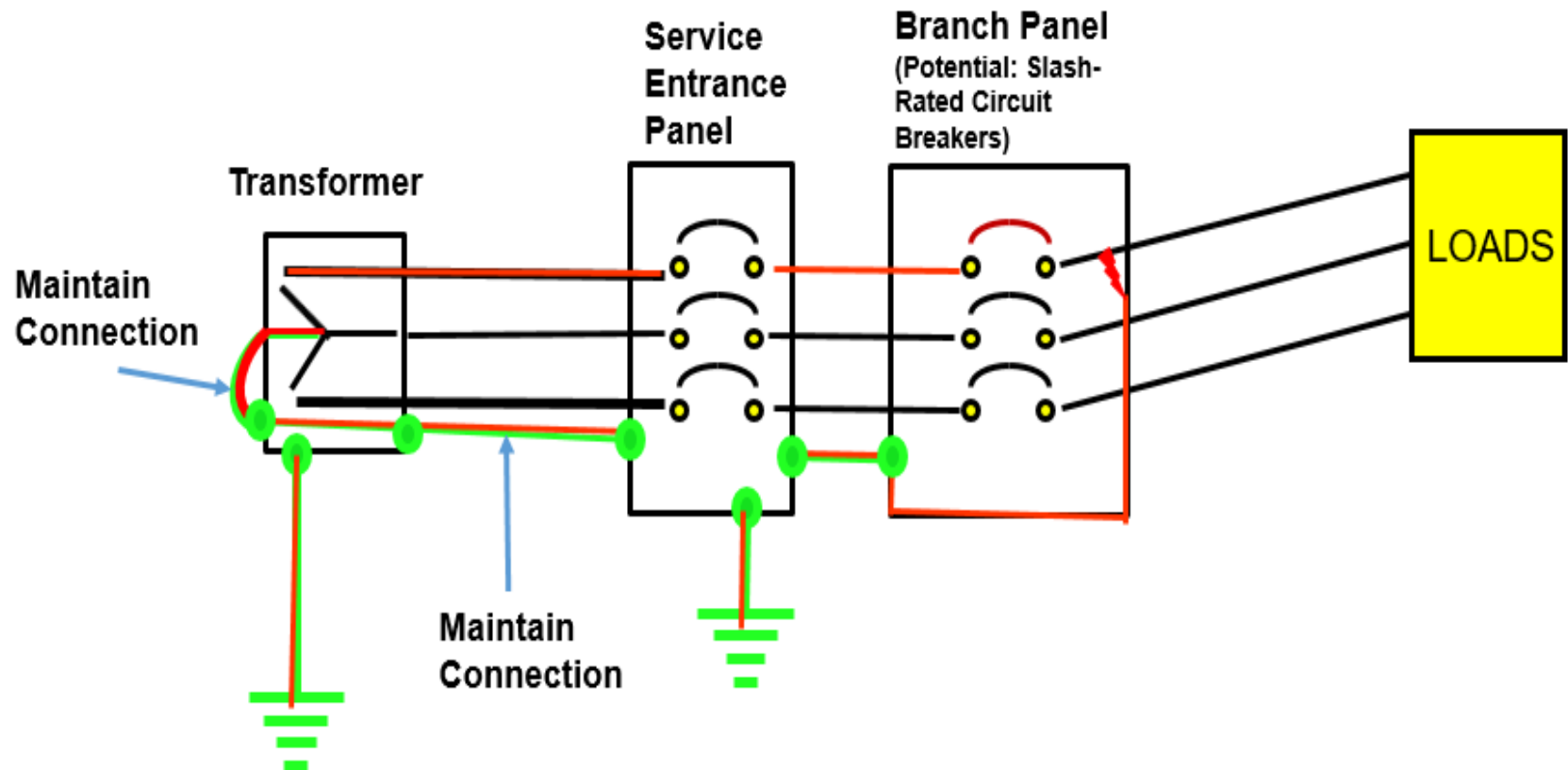
3-Phase 3-Wire Solidly-Grounded Wye Customer Services

**Neutral Conductor
(i.e. Bonding Conductor)**



**Phase
Conductors**

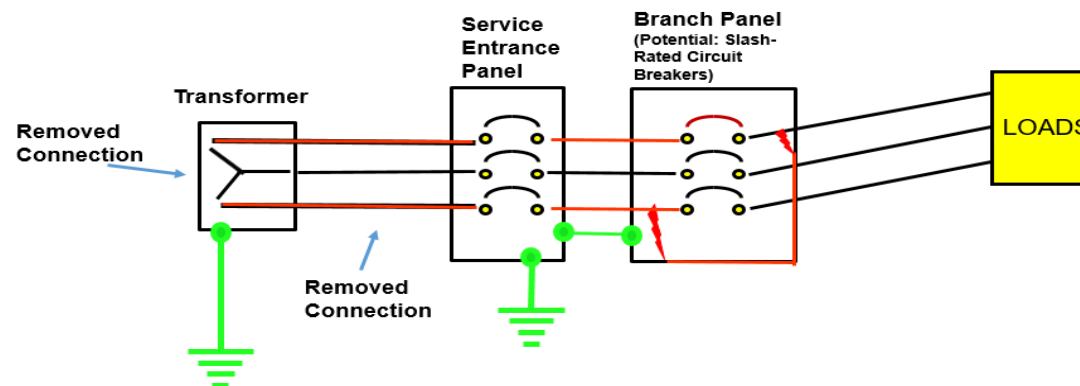
3-Phase 3-Wire Solidly-Grounded Wye Customer Services



3-Phase 3-Wire Solidly-Grounded Wye Customer Services

ESA is working on how to communicate issues around the use of Neutral Conductors which do not carry load current (i.e. Bonding Conductors).

ESA has identified that LDCs may be removing these Neutral Conductors (i.e. Bonding Conductors) which connect to the transformer to the Service Entrance Equipment.



3-Phase 3-Wire Solidly-Grounded Wye Customer Services

ESA is looking to communicate issues around:

1. Ensuring LDCs know ESA recommends leaving these neutrals (i.e. bonding conductors).
2. Issues about Slash-rated circuit breakers.
3. Issues around introducing OESC defects (e.g. 10-106 – 26th Edition).
4. Metering issues (e.g. 2 and 3 element meters).
5. The PSC process, in the event that ESA becomes aware of the removing of these conductors.
6. OTHERS???

3-Phase 3-Wire Solidly-Grounded Wye Customer Services

Scope of Visual Inspections

Question #1: When inspecting delta-metered services as per Flash Notice FN-02-18, are the inspections expected to include installation up to the neutral connection at the service box, or include also the requirements per OESC Bulletin 10-22-3 (i.e. check service box for adequate fusing, etc.)?

Answer #1: The inspections done by the LDC are expected to look for transformers that have a solidly-grounded wye-connected secondary system and there does not exist a grounded neutral conductor or grounded bond conductor leaving from the transformer towards the customer's service entrance equipment.

For overhead services LDC staff can visually check to ensure that a conductor connects at the transformer's neutral point to a customer conductor at the service mast.

For underground services LDC staff can visually check to ensure that a conductor leaves the transformer foundation toward the customer.

During that Visual Inspection process if you discover that the configuration of concern exists the LDC is to determine what to investigate further at that time. For example, you may wish to inspect the Ground Fault Indication Lights as the customer will need to address any cable faults prior to the installation of the neutral. You may wish to consult with your legal advisors, regarding further investigating.

3-Phase 3-Wire Solidly-Grounded Wye Customer Services

CONTINUED

During that Visual Inspection process if you discover that this configuration does not exist, there is no expectation of the LDC to investigate further. If the LDC notices a problem that they would like to report to ESA, ESA will accept a Safety Concern from the LDC and ESA will investigate the concern.

During that Visual Inspection process if you discover there exists the Configuration of Concern, you may wish to gather additional information from the customer at that time, such as if there appears to be any existing cable faults or a potential for a HRC fuse issue. ESA recommends the LDC create documentation for those inspections and for customer notifications. For example, HRC fuses are needed to complete a Corrective Action but not installed by the customer, if the customer has been informed that HRC fuses may be or are required due to the change in the service, this would be seen as important information to will increase safety for all the people in Ontario. The LDC may wish to advise the customer to hire an LEC to provide the customer with advice requiring the customer's equipment.

3-Phase 3-Wire Solidly-Grounded Wye Customer Services

CONNECTION AUTHORIZATIONS

Question #2: Can a LDC assume that all services that undertook a delta-wye conversion and that have connection authorizations have been inspected by ESA in the past, and no further inspection is required now by the LDC?

Answer #2: Yes

Question #3: If the LDC provides ESA with an address, can ESA verify if and when an inspection was completed, and whether it was from a delta-wye conversion?

Answer #3: Yes.

3-Phase 3-Wire Solidly-Grounded Wye Customer Services

CONNECTION AUTHORIZATIONS

Question #4: If you have these CA's, how far back would your records go?

Answer #4: 1999.

Question #5: There's a delta-wye conversion project in 1995, and both the transformer and the customer service have been converted to 4-wire. The LDC would not find a Connection Authorization in this case (the data only goes back to about 2000). However, some other work was done at the customer service in 2015 (unrelated to LDC-initiated work), and there is a Connection Authorization that shows 347/600V. Can it be assumed that the customer service is 4-wire if there's a 347/600V Connection Authorization, in 2015?

Answer #5: Yes

3-Phase 3-Wire Solidly-Grounded Wye Customer Services

| FLASH NOTICE #1 | FLASH NOTICE #2 | CURRENT |
|--|--|--|
| Number of Possible Configuration of Concerns | Number of Possible Configuration of Concerns | Number of Possible Configuration of Concerns |
| ~15,000 | ~11,000 | ~10,800 |
| Number of LDCs without a Possible Configuration of Concern | Number of LDCs without a Possible Configuration of Concern | Number of LDCs without a Possible Configuration of Concern |
| 12 | 22 | 23 |



Buildings/Additions and Powerlines Utility Advisory Council

Powerline Safety Group
Electrical Safety Authority
February 14, 2019



Buildings/Additions and Powerlines

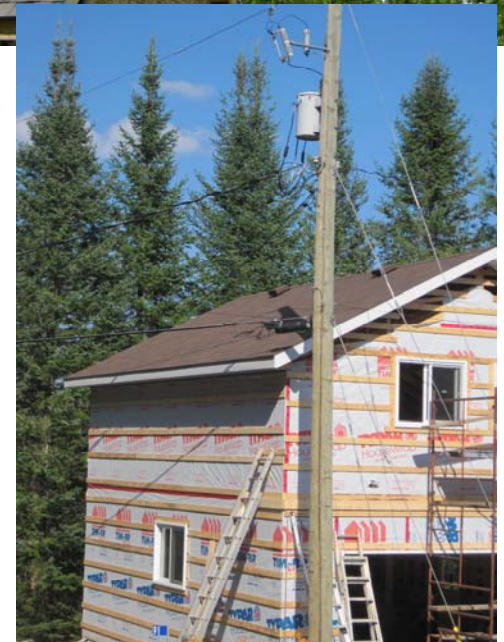
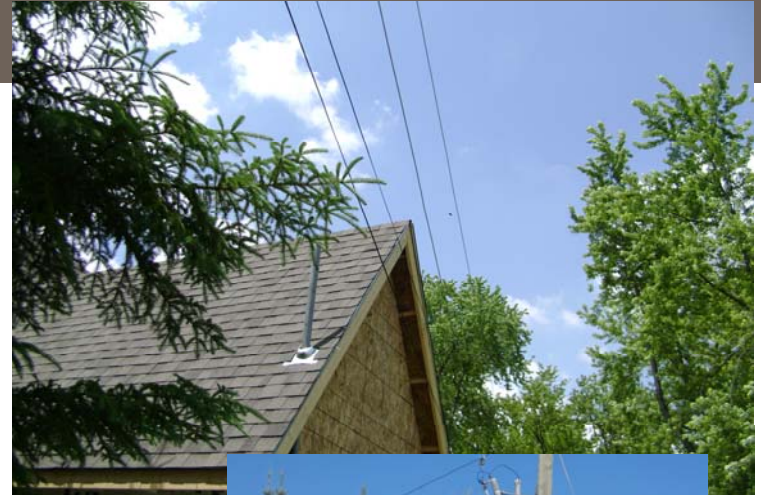
THE ONTARIO BUILDING CODE | CLEARANCE TO BUILDINGS

3.1.19.1. Clearance to buildings

- (1) A *building* **shall not** be located beneath existing above ground electrical conductors.
- (2) The **horizontal clearance** measured from the maximum conductor swing to the *building*, including balconies, fire escapes, flat roofs or other accessible projections beyond the face of the *building*, shall,
- (a) be not less than 1 m, for electrical conductors carrying voltages 750 V or less, except where necessary to connect to the electrical wiring of the *building*,
- (b) **be not less than 3 m, for electrical conductors carrying voltages greater than 750 V but not exceeding 46 kV,**
- (c) be not less than 3.7 m, for electrical conductors carrying voltages greater than 46 kV but not exceeding 69 kV, or
- (d) conform to the requirements of CAN/CSA-C22.3 No.1, "Overhead Systems", for electrical conductors carrying voltages greater than 69 kV.
- (3) Where the swing of an above ground electrical conductor not owned or operated by an electrical supply authority is not known, a swing of not less than 1.8 m shall be used.
- (4) Sentences (1) to (3) do not apply to a *building* containing electrical equipment and electrical installations used exclusively in the generation, transformation or transmission of electrical power or energy intended for sale or distribution to the public.

Buildings/Additions and Powerlines

- ESA is requesting LDC members of the UAC to provide data of the number of **new buildings and additions** placed under or adjacent to existing overhead powerlines not meeting the requirements of the OBC
 - Past 5 years
 - Based on City or Town
- Since 2006 ESA has issued 88 public safety concerns to LDC's relating to additions and new buildings
 - Does not include buildings and customer owned lines



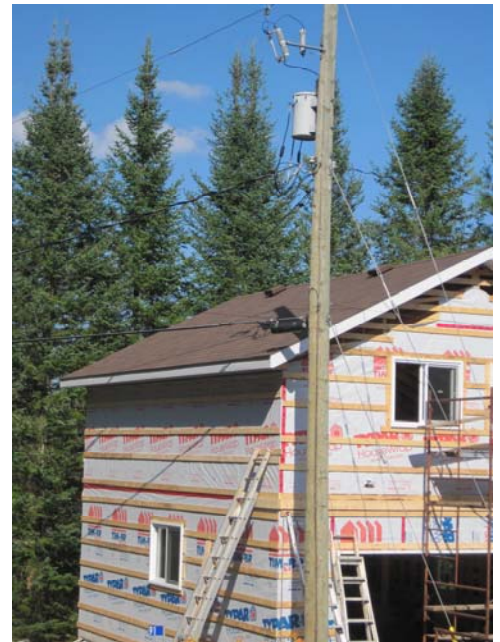
Buildings/Additions and Powerlines

- Zero Lot Line
 - How much of an issue is this?
 - This will require a change is rezoning by-laws
 - Difficult achievement



Buildings/Additions and Powerlines

- Data collected to be used to determine next potential Powerline Safety initiative
 - Required data to be submitted in 30 days





FEBRUARY 14, 2019

C22.3 No. 1, Overhead Systems C22.3 No. 7, Underground Systems

Standards Development Process

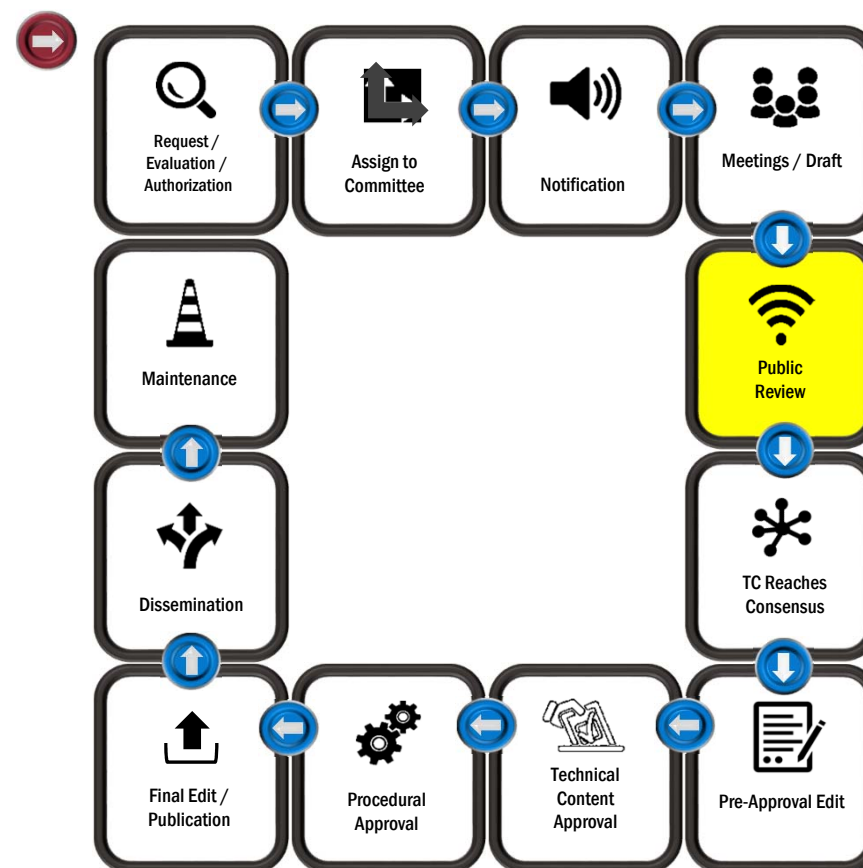
Set of steps and stages to support the development of a quality standard.

C22.3 No. 1, Overhead Systems Project Schedule (5 year cycle – 2020 Edition)

| | |
|--------------------------------------|-----------|
| Content Development Completion | June 2019 |
| Public & Quality Review (60 days) | July 2019 |
| Final Production | June 2020 |

C22.3 No. 7, Underground Systems Project Schedule (5 year cycle – 2020 Edition)

| | |
|--------------------------------------|------------|
| Content Development Completion | March 2019 |
| Public & Quality Review (60 days) | April 2019 |
| Final Production | May 2020 |



Public Review Process

The screenshot shows the 'Draft Review' page of the CSA Group website. At the top is the CSA Group logo and a navigation bar with links for Home, Register, Contact Us, and Help, along with a Log in button. Below the navigation bar is a heading 'Draft Review' and a language selector set to 'English'. The main content area features a four-step process: 1. Search (using a search bar or category), 2. Read (reviewing current standards), 3. Comment (shaping the future of draft standards), and 4. Share (sharing standards and comments). Below this is a 'Search by Keyword' section with a search bar and a magnifying glass icon. A paragraph explains that draft standards, amendments, and endorsements are available for public review and comment before approval, with a 60-day comment period. Finally, there is a 'Browse by subject' section with a grid of categories and their respective counts: Business Management (0), Construction and Engineering (19), Electrical (19), Energy (8), Environment and Climate Change (0), Health Care and Medical Devices (8), Information Technology and Telecommunication (0), Infrastructure and Public Works (0), Mechanical and Industrial Equipment (0), Nanotechnologies (0), Natural Resources (1), Occupational Health and Safety (1), Public and Community Safety (0), Unclassified documents (0), and Canadian Electrical Code, Part I (13).

Search by Keyword

Draft standards, draft amendments, and endorsements are available for public review and comment before they are approved by the committee. The comment period is normally 60 days from the date posted. Please return your comments as quickly as possible, so that we can pass them on to the appropriate committee for review.

Browse by subject

- Business Management (0)
- Construction and Engineering (19)
- Electrical (19)
- Energy (8)
- Environment and Climate Change (0)
- Health Care and Medical Devices (8)
- Information Technology and Telecommunication (0)
- Infrastructure and Public Works (0)
- Mechanical and Industrial Equipment (0)
- Nanotechnologies (0)
- Natural Resources (1)
- Occupational Health and Safety (1)
- Public and Community Safety (0)
- Unclassified documents (0)
- Canadian Electrical Code, Part I (13)

Public Review (<https://publicreview.csa.ca/>)

60 days of draft review period.

- **Register**
- **Review**
 - Search
 - Read
 - Comment
 - Share
- **Submit**
 - Support is available at publicreview-reply@csagroup.org



Thank you

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