Terms of Reference – Up-dated February, 2015

UTILITY ADVISORY COUNCIL (UAC)

Mandate and Role:
This Utility Advisory Council is mandated to provide views and advice the Chief Executive Officer (CEO) and ESA senior management on matters specific to the electrical distribution sector.

The Utility Advisory Council (UAC) will act as an advisory body to provide advice and input to ensure the identification, monitoring and reduction of electrical safety incidents and fatalities in Ontario specific to the Electrical Distribution Safety System. The mandate includes recommendations on new proposals or revisions to the Electrical Distribution Safety Regulation and the associated guideline as well as to provide advice on the impact of the administration of the regulation.

Objectives:

- Review, refine and clarify the safety objectives identified in the Electrical Distribution Safety Regulation;
- Review, refine and clarify the Electrical Distribution Safety Regulation guidelines;
- Consideration of all proposals or requests for revision to the Electrical Distribution Safety Regulation;
- Advise and assist ESA in its efforts to communicate with members of the Electrical Distribution sector and the public[1];
- Provide advice on safety policies proposed by the ESA (e.g. Safety Bulletins);
- Provide advice on ways ESA can improve its business services (plan approval, inspection, etc.);
- Identify Ontario Electrical Safety Code or technical issues or concerns for referral to the Ontario Provincial Code Council or other ESA advisory councils for consideration;
- Identify opportunities to improve electrical safety.

Council Structure:

- The Utility Advisory Council will be comprised of a minimum of 18 members and maximum of 26 members offering expert opinions;
- It is the intent of ESA to ensure that the UAC be comprised of a balanced representation of industry stakeholders;
- Approximately one-half of the UAC will be parties representing local distribution companies with the balance representing various general interests and regulatory interests (regulatory/governmental agencies) according to the following matrix:

[1] In this context, 'public' means those outside of the Electrical Distribution sector who are impacted by electrical safety issues. This includes consumers and workers in other sectors who experience electrical contacts, injuries, fatalities, and/or damage and loss.

	Minimum	Maximum
Licensed Distribution Companies/Owner/ Operator	9	13
General Interest	6	8
Government, Regulatory	3	5

Member Appointments and Terms:

- The term for Council members is three years. Members may be eligible for reappointment for an additional two terms. Reappointment should be based on member attendance, participation, and continued relevance of the subject area of the member's expertise;

- In order to begin to track membership more accurately, current members, as of October 4, 2012 will be grandfathered and considered to be starting their first three-year term. After that time, there will be a schedule for members to retire in rotation to ensure a balance of experience and fresh perspectives;

- As the UAC functions as an advisory body, it is important that members be drawn from among the appropriate distribution industry segments. Candidates should possess a strong grasp of the electricity distribution sector and be well regarded within the industry. People holding senior positions in organizations, associations or firms are considered the preferred candidates;

- Nominations for appointments will generally be obtained through the various organizations or associations that represent the viewpoints of parties affected by the Electrical Distribution Safety Regulations and those interested in promoting safety in the electrical distribution sector;

- General interest members will be selected based on their ability to represent broad constituencies to support ESA's strategic direction;

- Regular participation in UAC meetings is encouraged, however, alternates are acceptable. Members who regularly do not attend or send an alternate representative may be asked to resign from the Council.

Appointment of the Chair and Vice-Chair:

- The Council Chair will be selected by UAC members through a Council voting process. In addition to the election of a Chair, a Vice-Chair will also be elected by the members. Both the Chair and the Vice-Chair must be elected from the membership;

- The Term for the Chair position is two years with the option for the UAC to renew the position for an additional two year term. The Term for the Vice Chair position is two years with the option for the UAC to renew the position for an additional two year term. As of May 24, 2012 the current position of Chair will be grandfathered and considered to be starting the first two year term:

- The members should consider the following criteria when electing the Chair and Vice-Chair:
    - Governance experience;
    - Experience leading teams through decision making processes;
    - Council or Committee experience ;
    - Proven commitment to positioning societal perspectives;
    - Experience applying Robert's Rules;
    - Ability to manage and engage others;
    - Time availability to support Council activities.

Voting and Quorum:

- Generally, the UAC will operate on a consensus-based process. In some circumstances recommendations may be made by a vote of the Council membership;
- Each member of the Council shall be entitled to one vote. Voting by proxy will be permitted provided that written notice relative to the proxy has been filed with the Chair prior to the meeting. The Chair will only vote in the case of a tie;
- A quorum is required to vote, however it is not required to proceed with the meeting. A quorum shall consist of two-thirds of the voting membership.

UAC Technical Sub-Committees:

- The UAC may wish to establish technical subcommittees to explore and make recommendations on technical issues that arise. The sub-committee acts only in an advisory capacity to the UAC. The Chairman of the Subcommittee shall be a member of the Council, but the membership of the Subcommittee may include non-members of the Council.

Utility Council Member Expectations:

- Active participation and willingness to work on a Council;
- It is expected that the various associations, through their member(s) on the Council, will use the UAC as a forum for proposing changes and revisions to satisfy the needs of the segment of the industry that they are representing and to improve safety;
- Engage members of the electrical distribution industry in the delivery of public electrical safety in Ontario;
- Identify and make recommendations to ESA on ways to improve electrical safety;
- Ability to attend 4 meetings per year. Additional time for conference calls, material review, and participation/integration with other ESA Councils may be required;
- Ability to work in a multi-stakeholder environment;
- Council members will be independent of ESA, and will identify any real or potential conflicts to the chair of the Utility Advisory Council.

ESA Support to Utility Council Members:

- Quarterly summary of Council activities to ESA's Regulatory Affairs and Governance Committee;
- ESA Advisory Council Orientation Package;
- Additional staff support and training if needed;
- Financial support for out-of-pocket travel expenses to attend committee meetings;
- Council members whose costs are not covered by their employers are eligible to receive a meeting fee of $250 and the Chair is eligible to receive a $500 meeting fee;
- Governance training for the incoming Chair;
- Networking support with other members;
- Access to relevant research materials and reports e.g. Ontario Electrical Safety Report and industry research.

Meetings:

- The Council meets at least three times per year. Additional meetings may be called at the request of the Chair;
- Meeting agendas and supporting material will be sent to each member one week in advance of the meeting date;
- Draft minutes will be distributed approximately two weeks after the meeting and members will have two weeks to propose changes to the draft minutes. The draft minutes (with revisions) will be posted to the ESA website within 30 days of the meeting.

Council Reporting:

- As the Council provides advice to the CEO and Executive Management Team, the Council may provide the CEO with an annual report to communicate:
    1. Key accomplishments
    2. Emerging issues
    3. Performance against annual objectives for the fiscal year.
- This report will ensure full disclosure and reinforce ESA's commitment to transparency and public accountability and should also inform on ESA's ability to support the activities of the Council.

###

Attendance of Non-Members at ESA's Advisory Council Meetings:

ESA Board Members: ESA Board members may advise ESA Senior Management or the Chair of the Council that they intend to attend a Council meeting as an observer. However, the Board member has no voting privileges and will be invited to participate in the discussion by the Chair or ESA Senior Management when appropriate.

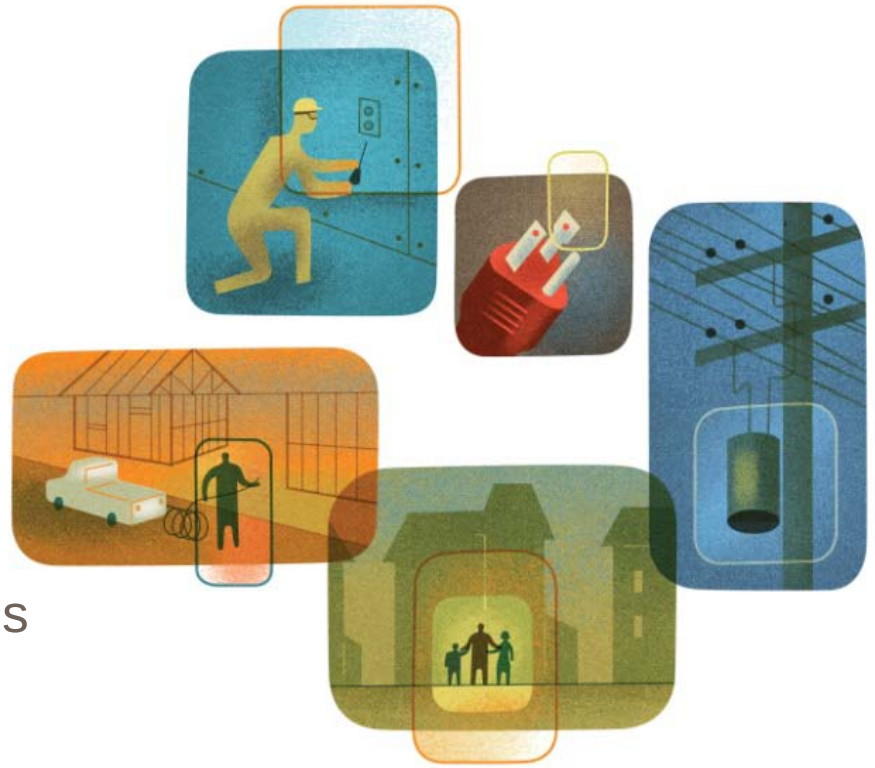
Public/other: Members of the public or other guests are permitted to attend meetings at the discretion of the Chair and ESA Management. These guests have no voting privileges and will be invited to participate in the discussion by the Chair or ESA or Senior Management when appropriate. Guests should be identified at the outset of the meeting.

ESA Staff and Consultants: Staff, consultants and other professionals retained by ESA are not considered guests at the meeting as they may be required to participate in the discussion to provide opinions and advice. These attendees will be identified to the Chair during the agenda planning process, they will be introduced at the outset of the meeting, and the Chair and ESA management will allow their participation in the discussion when appropriate.

Electrical Safety Authority

UAC Update -Meter Review

Feb 26, 2015



Ontario Local Distribution Companies

January 22, 2015

Introduction

Normand Breton

Registrar and Director

Contractor Licensing and

Power Line Safety

Agenda

- Review of Technical Findings
- Next Steps
  - Review requirements of LDCs to comply and deadline
  - ESA Order
- Q&A

Electrical Safety Authority

Due Diligence Safety Review

Dr. Joel Moody, Strategic Safety Analyst

Background

On August 6, 2014, the Electrical Safety Authority (ESA) launched a Due Diligence Safety Review of meter incidents reported in Saskatchewan.

The objective of this review is to determine whether there are any systemic electrical safety impacts for Ontario relating to the Sensus Gen 3.3 meters which are the models used by SaskPower.

This Due Diligence Safety Review is consistent with typical ESA activity to monitor relevant developments from other jurisdictions.

Methodology

- Conducted a jurisdictional review of twelve locations in three countries (Australia, Canada, and USA)
  - Contacted Philadelphia and Portland for additional information
- Reviewed data from Office of the Ontario Fire Marshal and Emergency Management (OFMEM), OEB, and LDCs
- Reviewed Crown Investment Corporation (CIC) report on Saskatchewan events
- Received and physically reviewed four Sensus meters
  - 3.2 and 3.3 with and without remote disconnect (RD)

Electrical Safety Authority

Findings

- Rationale
  - Lakeland Electric (FL), 2014: Six fires of Sensus meters with remote disconnect (RD). 10,657 meters to be removed.[1]
  - SaskPower, 2014: Eight fires of Sensus generation 3.3 meters with RD. 105,000 meters removed.
  - Portland General Electric, 2014: Three fires with minor property damage in one case. 70,000 Sensus generation 3.2 meters with RD removed.
  - Philadelphia Energy Co. (PECO), 2012: Several incidents of meters overheating and catching fire. Independent consultants led to the decision to swap out 600,000 Sensus meters with those by another manufacturer.[1]

[1] Information was not specific about the generation versions removed.

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Findings

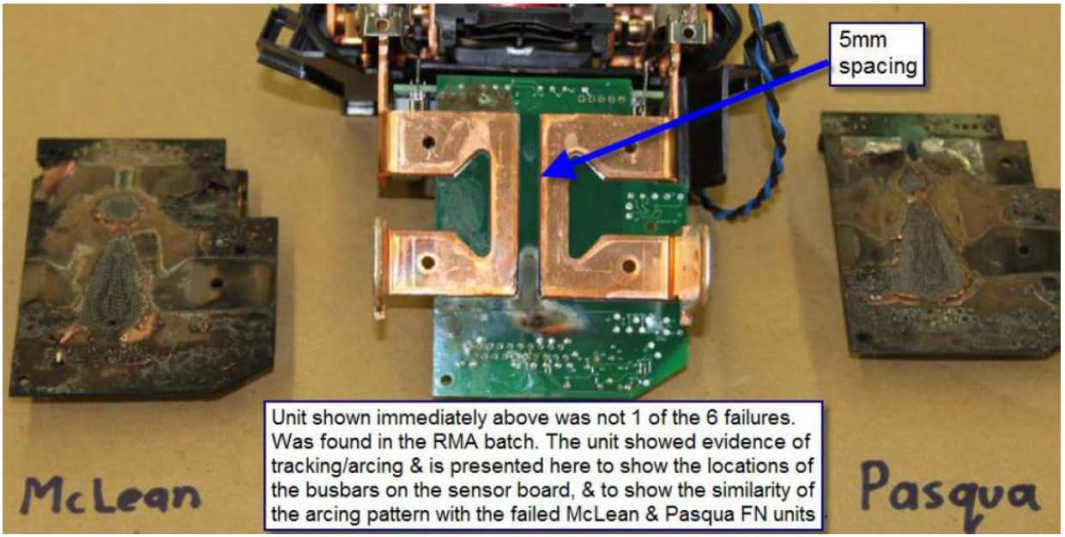
- Rationale
  - Causal factor
    - Water (and/or condensation along with other contaminants) gets into the meters themselves, causing arcing across electronic components and eventual failure of the meter.
      - Ritenburg, 2014
      - Sensus, 2012[2] report for an Ontario Local Distribution Company

[2] ESA received a copy of this report as part of the data collection phase of the ESA Due Diligence Safety Review.

Electrical Safety Authority

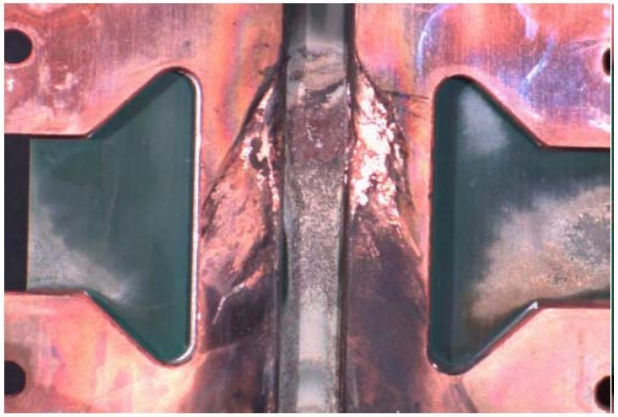
Replication of Tracking/Arcing Issue

Ritenburg, 2014



Sensus 3.3 and 3.2 meters **with** remote disconnect

Sensus, 2012



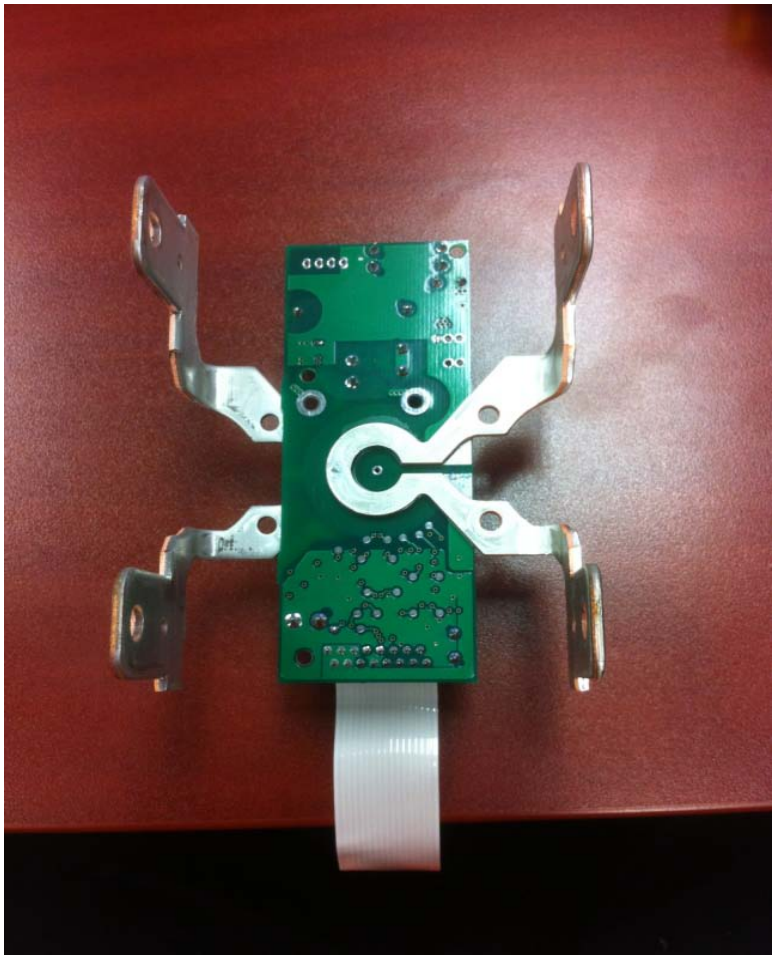
Bus Bar Arching

Customer Reported Symptom: Radio / AMR Problem (SC ticket 1255397). Melted metal splashed on inside cover, appears to have shorted, loose parts, residue on inside cover. The trouble report indicated that the meter had a blank register display but still supplied full power to the customer. After the meter was replaced it was noticed that there appeared to be molten metal splashed on the inside cover at the 6:00 position. The MC seal was intact.

Root Cause: Water intrusion

Electrical Safety Authority

Sensus Printed Circuit Board (PCB)



Printed circuit board from Sensus 3.3 and 3.2 meter **without** remote disconnect

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LDC Information Reported to the OEB

- 4.8 million meters in Ontario from multiple manufacturers
  - 51,200 Sensus 3.2 meters
    - 5,400 Sensus 3.2 meters **with** remote disconnect

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Reported use of Sensus 3.2 Meters with Remote Disconnect

LDC	Number of Sensus 3.2 Meters with remote disconnect
Bluewater Power Distribution	3,492
Waterloo North Hydro	449
Cambridge and North Dumfries Hydro	409
Kitchener-Wilmot Hydro	327
EnWin Utilities	266
Greater Sudbury Hydro	161
Brant County Power	115
Lakefront Utilities	108
Canadian Niagara Power	27
Norfolk Power Distribution	24
Oakville Hydro	7
Algoma Power	3
Espanola Regional Hydro	2

Source: Ontario Energy Board, 2014

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Order and Compliance

Normand Breton, Registrar & Director, Contractor Licensing & Powerline Safety

Next Steps – Compliance to the Order

ESA issued a Compliance Order on January 27, 2015 to all Ontario Local Distribution Companies.

The order will require LDCs to:

1. Cease and desist further installation of Sensus iConA™ Generation 3.2 remote disconnect meters
2. Remove in-service meters no later than March 31, 2015.
3. Complete and return short information questionnaire no later than February 3, 2015
4. Complete and return declaration no later than March 31, 2015 that all meters have been replaced and that replacements do not have the same hardware design as the Sensus 3.2 with remote disconnect

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Next Steps: Compliance to the Order

Additional information required from LDCs with Sensus 3.2 meters with remote disconnect included :

- Any LDC who reported it has or had these meters in-service as of January 22, 2015 specific information including quantities of meters and confirmation of knowledge of location and corrective action plan also required.
- Required by February 3, 2015

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Communications Support for LDCs

To assist with handling inquiries to LDCs, ESA provided:

- Frequently Asked Questions with Answers – for call centres, customer service, media relations, or web content
- Key Messages about ESA's action – to assist call centre and customer service staff
- Web site copy – for LDCs with and without the meters
- IVR message about the announcement

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Current Status

To date ESA has received responses from all utilities including corrective action plans from all utilities who identified they have in service or inventory Sensus iConA™ Generation 3.2 remote disconnect meters

We continue to work with the utilities and expect all utilities impacted will meet the Compliance Order requirements by no later than March 31, 2015

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Questions???

Electrical Safety Authority

Electrical Safety Authority

ESA Corporate Strategy Up-date

Utility Advisory Council Meeting

February 26, 2015

Overview: Development Process

Electrical Safety Authority

Vision, Mission, Mandate & Values

Our Vision:

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

Our Mission:

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

Electrical Safety Authority

Vision, Mission, Mandate & Values

Our Mandate:

To promote and undertake activities which enhance public electrical safety including training, inspection, authorization, investigation, registration, enforcement, audit, and other regulatory and non-regulatory public electric safety quality assurance services.

– ESA Objects of Corporation, 1999

Electrical Safety Authority

Vision, Mission, Mandate & Values

Values:

Safety: We can and will make Ontario a safer place for all citizens.

Leadership: We will always strive to do better, challenge assumptions, and welcome new ideas.

Collaboration: We work best when we work together.

Accountability: We hold ourselves to the highest standards of responsibility and ethical behaviour.

Integrity and Trust: We will take the high road.

Electrical Safety Authority

Strategic Approach for 2015-2020

- Use insights, expertise passion for safety to achieve vision
- Achieving safety requires establishing safe environments and for people and industry to behave in a safe fashion.
- ESA will act directly where we can make meaningful positive impact
- Where we need others to act, we will be a catalyst
- Foster among public and industry accountability for their own electrical safety and those they impact....

Electrical Safety Authority

Strategic Approach for 2015-2020

- Apply risk-based approaches: greatest effort to areas of greatest potential harm.
- To do that, need strong understanding of causes of electrical injuries, deaths and fires in Ontario.
- Judiciously apply tools and resources at our disposal to make maximum positive impact on safety.
- Earn and retain the trust, confidence of stakeholders.
- Be fiscally responsible.
- Act with the public benefit foremost in mind.

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Goals, Strategies & Major Activities

Electrical Safety Authority

3 Strategic Goals

Accelerate Improvements in Safety

ESA will seek to improve the state of electrical safety in Ontario by accelerating the reduction in the rate of electrical fatalities and critical injuries over the next five years.

Increase Compliance to Electrical Safety Regulations

ESA will seek to increase the rate of compliance with electrical safety regulations where required.

Ensure Strong Public Accountability

ESA will ensure stakeholders recognize us as an effective, publicly accountable organization.

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3 Strategic Goals

- Each goal supported by:
  - Defined measure for five-year achievement
  - Defined strategy
  - Major activities across five-year scope
  - Key deliverables annually

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Safety

Goal: improve state of electrical safety by accelerating reduction in electrical fatalities and critical injuries over five years

Measure: Achieve 20% decrease in electrical fatalities and critical injuries over five years (based on five-year rolling average.) This is a further improvement on the current 13% rate of reduction

Strategy: Operate from a position of knowledge, insight about electrical safety. Use it to identify areas of greatest risk and prioritize efforts on them. Anticipate emerging risks and act to reduce them.

Electrical Safety Authority

Safety

- Priorities:
  - Electrical workers working live while doing repair and maintenance;
  - Members of the public and construction trades making contact with powerlines;
  - Electrical fires in homes.
- Collaborate: Share our insights and learnings internally and externally so there can be collaborative action to address leading safety risks.

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Compliance

As the administrative authority for four areas of regulation, ESA will seek to increase the rates of compliance with electrical safety regulations where required

Goal: ESA will seek to increase the rates of compliance with electrical safety regulations where required

Electrical Safety Authority

Compliance

Measure: increase the amount of renovation wiring work being captured by ESA's compliance processes by 7.5 per cent over five years, which will be a significant shift in work coming into the compliance system.

- ESA will be engaged in ensuring compliance in all four areas of regulatory responsibility
- But renovation work is significant area of non-compliance:
  - Industry estimates of underground economy: 50%+ residential, 13% commercial/ industrial renovation work

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Compliance

Strategy:

- Remove barriers to compliance:
  - increasing awareness of regulatory obligations
  - improving our own processes and requirements, where needed.
- Effective enforcement
- Increasing stakeholders' acceptance of accountability for their regulatory obligations.

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Public Accountability

Goal: ESA will ensure stakeholders recognize us as an effective, publicly accountable organization.

Measure: ESA will establish a new multi-stakeholder accountability perception measure and achieve improvements in any areas where required.

Strategy: Ensure we maintain a good understanding of stakeholder perceptions of ESA's accountability and address any gaps. Establish a new multi-stakeholder perception measure to track perceptions and changes over time.

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Stakeholder Consultation Results

54 Respondents:

- **40% LDC**
- 17% electrical trade
- 15% consumer
- 9% government or other regulators
- 7% manufacturing or industry
- 7% safety organizations

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Stakeholder Consultation

Highlights from feedback:

- 84% support for the evolutionary direction (66% strong support)
- 85% agreement that proposed goals provide good focus (37% strongly)
- 83% agreement that safety strategy, planned activities set clear path (58% strongly)
- 84% agreement that compliance strategy, planned activities set clear path (53% strongly)
- 80% support that public accountability strategy, planned activities set a clear path (48% strongly)

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Next Steps

1. Finalization of plan details and documents
2. Internal planning for Year One
3. Roll-out of final plans to external stakeholders in April

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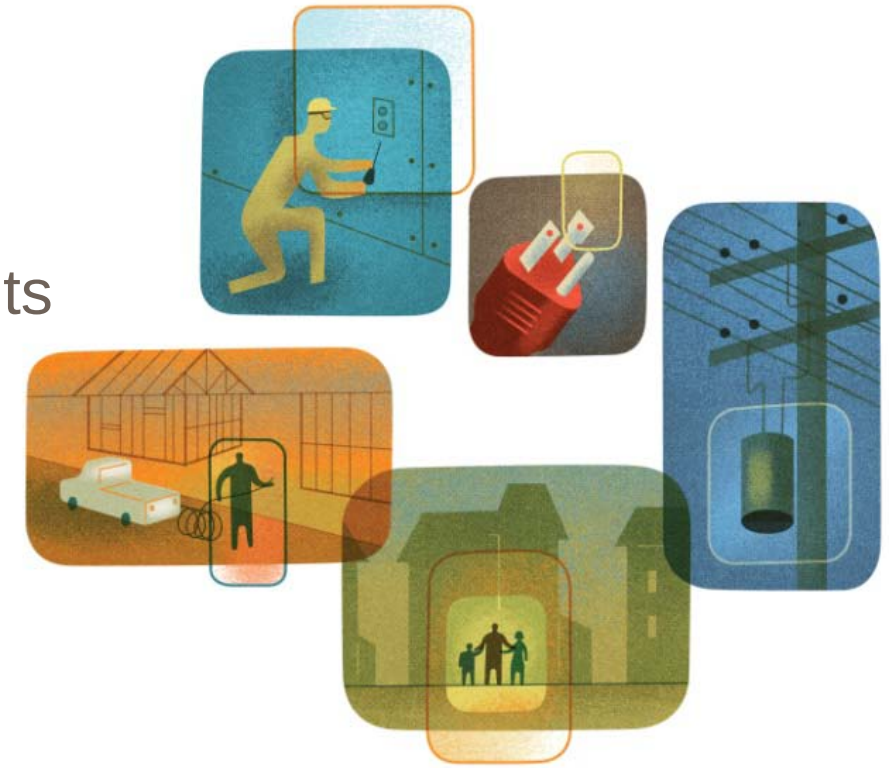
OESC 26th Edition

Proposed Ontario Amendments



Nansy Hanna P.Eng
UAC
Feb 2015

Proposed Ontario Amendments

Section 2:

- Some editorial changes; e.g. remove “in writing”, add definition for LEC, Clarify the ACP process in the Rule.

- Rule 2-005 – An application of inspection not required.
  - Clarify that no application for inspection is required when contractors operating under *Ontario Regulation 215/01 (Fuel Industry Certificates)* are bonding metallic gas piping and no other electrical work is performed or the electrical portion is exempt by 2-005.
  - Add the need to comply with the LDC for plug-in transfer devices

Proposed Ontario Amendments

Section 2:

- Rule 2-022 – Sale or other disposal and use
  - Removing double negative in subRule (3)
  - Recognize Limited Power Supply (LPS) whose output does not exceed Class 2 limit.
  - New Appendix B note to be added to clarify applicable CSA certification standards for Class 2 power supply and LPS
  - Clarify that where the Class 2 power supply is part of a product (e.g. Christmas lights), the product is required to be approved
  - Existing Rule 2-208 “Miscellaneous” is relocated as new Subrule (5)
  - Clarified the need for approval of specific battery operated devices, i.e. haz.loc locations and Catagory III meters

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Proposed Ontario Amendments

Section 2:

- Rule 2-102 – Rebuilt equipment
  - Clarify that retrofitting equipment can be accepted by ESA where the installation meets the specified requirements.

Section 3: Field evaluation of electrical equipment

- Deleted this section

Electrical Safety Authority

Proposed Ontario Amendments

Section 10:

- Rule 10-004 – Revise the definition for ***Effectively grounded metal structural frame of a building*** as Rule 10-500 has been deleted from the CEC

Section 16:

- Rule 16-222 Reinstate subrule 1(b) deleted as an Ontario amendment

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Proposed Ontario Amendments

Section 20:

- Rule 20-060 – Harmonize with ***CSA-B149.1-10*** and (TSSA) to clarify that Only VRA's certified to **CSA 12.6 "Vehicle Refuelling Appliances"** can be installed in accordance with ***CSA-B149.1-10*** and be consider non-hazardous location installations.
- Rule 20-034 – Harmonize with TSSA's CAD for Propane Code Adoption Document Amendment issued August 1st 2014 regarding classification of the areas around Propane Storage and Cylinder Exchanges.

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Proposed Ontario Amendments

Section 26:

Rule 26-744

Rule 26-744(4) – deleted to align with OBC . Ontario only rule introduced in the 20th Edition/1990. The rule mandates the installation of an electric range receptacle even if a gas supply piping or gas connection outlet has been provided for a free-standing gas range.

(2) In order to supply energy to cooking appliances and clothes dryers, every kitchen and laundry space shall be provided with,
(a) an electrical outlet,
(b) a natural gas line, or
(c) a propane line.

Subrules (12) & (13) pertaining to the wiring of an electric dryer are to be removed.

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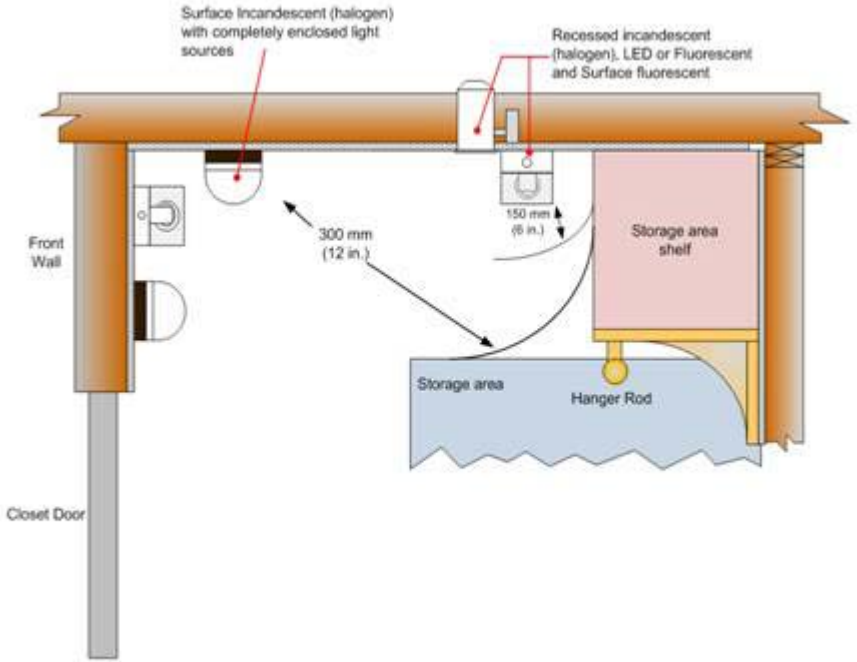
Proposed Ontario Amendments

Section 30:

Rule 30-200

Include the requirement for luminaires installed near or over combustible material and not only “stored material” and

Add Appendix B note to clarify clearances similar to Bulletin



Proposed Ontario Amendments

Section 30:

LED luminaires in building of resedential occupancies supplied by Class 2 circuits

30-1400 Scope (see Appendix B)

Rules 30-1402 to 30-1410 apply to LED luminaires in buildings of residential occupancies, supplied by Class 2 circuits in which the current is limited in accordance with Rule 16-200.

30 -1402 Special terminology

LED Lighting System – a complete assembly consisting of a power source that operates within Class 2 circuit limits, LED luminaires, wiring harness, connectors and associated equipment.

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Proposed Ontario Amendments

Section 32:

- Rule 32-110 – Review permitting smoke detector to be connected to AFCI since the OBC "Ontario Building Code" now requires battery backup

CEC Subject 3938

Electrical Safety Authority

Proposed Ontario Amendments

Section 72:

Introduction of requirements for the location of power supply equipment for recreational vehicles (RVs) relative to the RVs parking lot.

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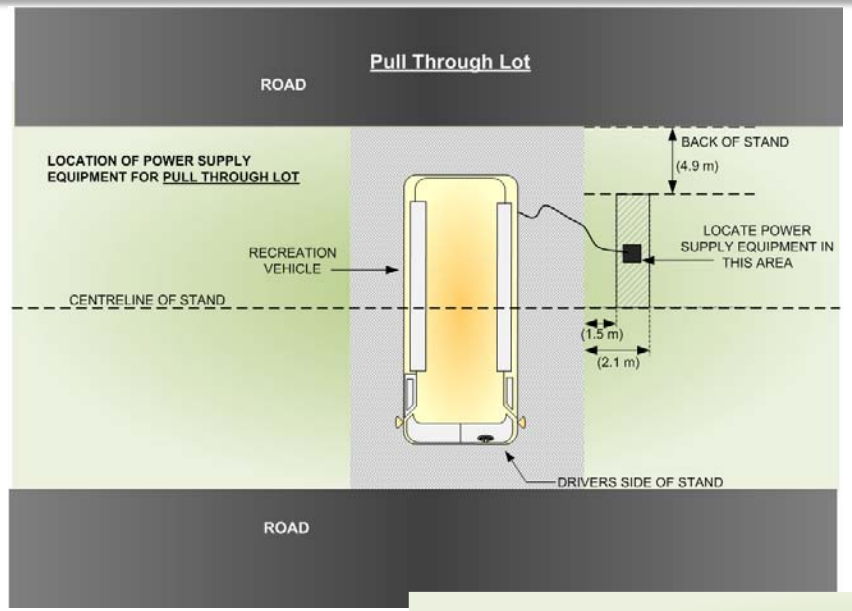
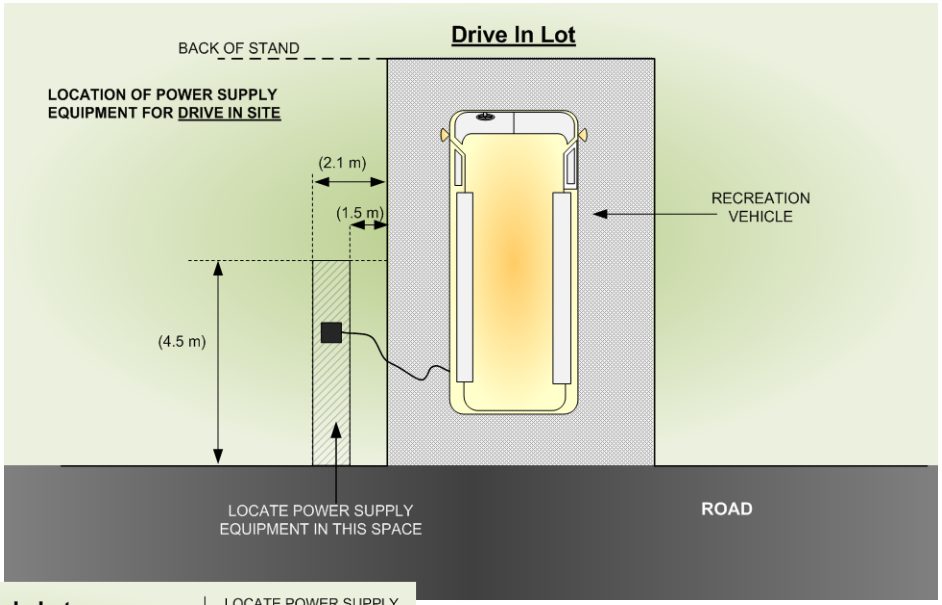
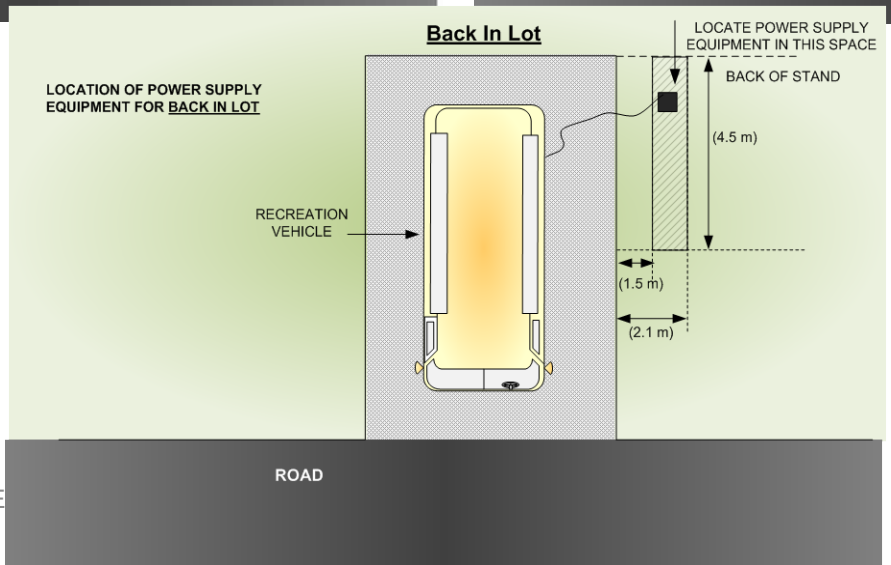
Proposed Ontario Amendments







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Proposed Ontario Amendments

Section 78:

Include non-commercial docking facilities associated with a dwelling unit into the scope of section 78 and provide prescriptive rules for wiring of such facilities.

Electrical Safety Authority

Thank you

Electrical Safety Authority

LDC Public Safety Measure Project

UAC update

February 25,2015

Purpose

Brief UAC on progress to date on the development of a Public Safety Measure for use on OEB/LDC Scorecard

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Background

- **OEB initiated a consultation with ESA and stakeholders to identify a *Public Safety* measure**
- ESA engages stakeholders (LDC's , Consumers) ,EDA and OEB participate as observers
- **Powerline contacts accounts for 49% of all electrical related fatalities over the period 2004-2013**
- **Inclusion of a *Public Safety* measure is an opportunity to engage the LDC community in a common goal in this critical safety priority**

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The Purpose of the Public Safety Measure

To monitor the **effort** and **impact** LDCs are having on improving public electrical safety for the Distribution Network

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Public Electrical Safety – As it Relates to Utility Distribution Assets

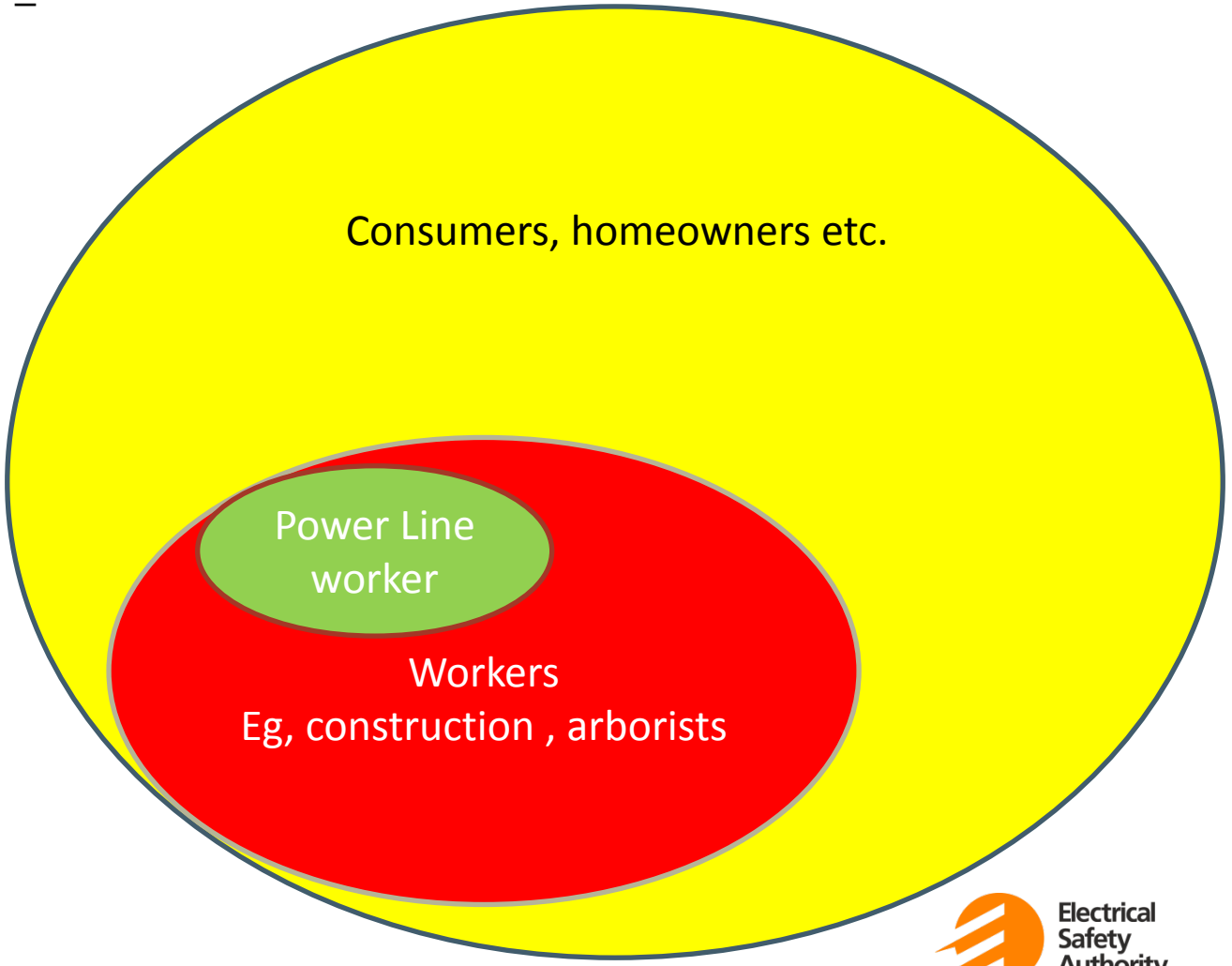
Public electrical safety = electrical safety for <u>everyone</u> in Ontario

Relative Risk Ranking (fatalities)

Green : 1
Yellow : 4
Red : 11.4

Utility Contacts

Green: 13%
Yellow: 13%
Red: 74%



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Proposed Public Safety Measure

Three part measure consisting of the following:

1. The level of public awareness within an LDC's territory of the most important electrical safety information and precautions related to the distribution network assets;

2. The level of compliance with Ontario Regulation 22/04;

3. The number of serious electrical safety incidents occurring on an LDC's assets per year as already defined by Ontario Regulation 22/04.

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Next Steps

1. EMT review – Nov, 2014 - complete
2. ESA formulating draft public safety measure - complete
3. Briefing of RAGC in Nov., 2015 - compete
4. Briefing of ESA Board and OEB - Dec , 2014- complete
5. Public Consultation – Jan / Feb - on going
6. Briefing update for RAGC – Feb 25, 2015 - in process
7. Final Measures to ESA Board and OEB- Mar. , 2015

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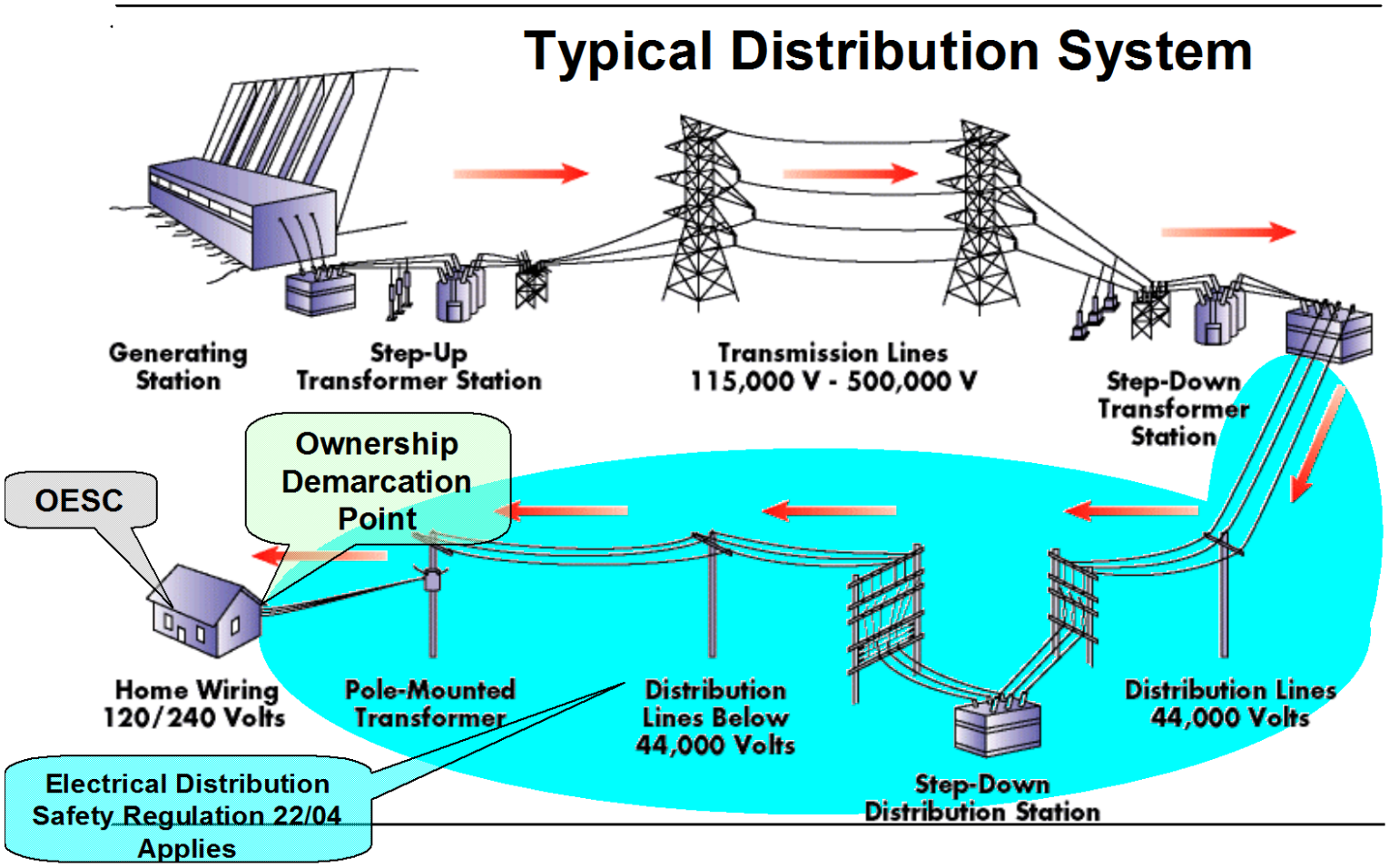
Appendix

The Distribution Network Scope



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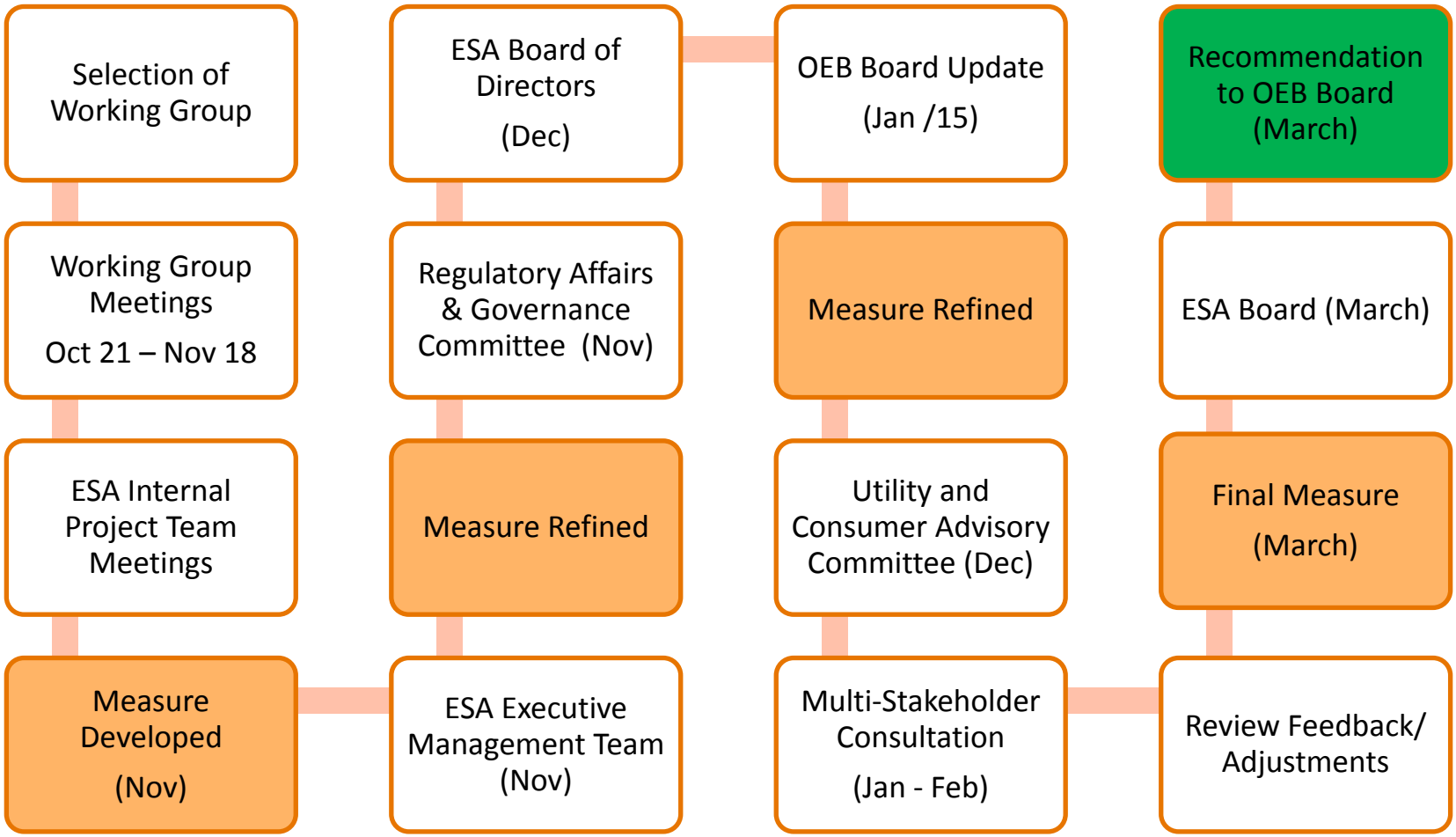
LDC Public Safety Measure Process



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BBP Best Business Practice **EXTERNAL**

Revision: N/A
BBP Revision History
Date Created: December 16, 2014

OVERVOLTAGE AND LIFE SAFETY DEVICES (Rev 1.0)

(See also: N/A)

SYNOPSIS:

- This BBP outlines the best practice in the event an overvoltage has occurred which may have negatively affected customers' Life Safety Devices.

INTENT/RATIONALE/BACKGROUND:

This document outlines the procedure which is considered to be a Best Practice for both LDCs and ESA in the event an overvoltage has occurred which may have negatively affected customers' *Life Safety Devices*. Overvoltage events which may have negatively affected customers' *Life Safety Devices* include:

1. Meter Damage - Where the LDC has reason to believe damage was caused due to overvoltage, including a lightning event; or
2. Primary to Secondary Line Contacts

The following devices are considered to be *Life Safety Devices*:

1. Ground Fault Circuit Interrupters (GFCIs)
2. Arc Fault Circuit Interrupters (AFCIs)
3. Smoke Detectors; and
4. Carbon Monoxide Detectors

BEST PRACTICE DIRECTION:

When an overvoltage event occurs, as defined above, this overvoltage may cause damage to *Life Safety Devices* beyond the demarcation point (ex. in a home or business). The following documentation outlines what is considered to be a Best Practice in regards to informing building owners of the potential damage to their *Life Safety Devices* after an overvoltage event has occurred.

- The LDC is to notify customers of the potential damage to their *Life Safety Devices*. This can be accomplished by issuing the attached letter or by issuing a similar LDC generated letter.

- The LDC is to notify ESA for the event by emailing the information to **esa.cambridge@electricalsafety.on.ca.** The information will be used to inform the Inspector in the area of the overvoltage event. Information to include in the email:
  - The address or addresses which received a letter warning of the potential damage to *Life Safety Devices*;
  - The date overvoltage event; and
  - Any other valuable information.

IMPORTANT SAFETY INFORMATION

POTENTIAL DAMAGE TO LIFE SAFETY DEVICES IN YOUR HOME OR BUSINESS

It has come to our attention that your address **may have been affected by an overvoltage on INSERT DATE.** An overvoltage may have caused damage to Life Safety Devices in your home or business.

What are Life Safety Devices and what do they do?

- Ground Fault Circuit Interrupters (GFCI circuit breaker or receptacle)—protection from electrical shock in wet areas such as kitchens, bathrooms, whirlpool tubs, outdoors, etc..;
- Arc Fault Circuit Interrupters (AFCI circuit breaker or receptacle)—protection from fire in locations such as bedrooms, etc...;
- Smoke Detectors - protection from smoke and fire; and
- Carbon Monoxide Detectors – protection from carbon monoxide.

If these devices have been damaged by an overvoltage they may not provide protection as intended.





What Should You Do?

Damage cannot be solely detected by a visual inspection.

ESA recommends that you follow the manufacturers' instructions to test:

- Any GFCI and AFCI devices to ensure they are working properly and replace if not;
- Smoke and Carbon Monoxide Detectors and replace any faulty detectors;

If you need to hire someone to do electrical repairs in your home, you must hire a Licensed Electrical Contractor. There is a searchable database at **www.esasafe.com**.

The Electrical Safety Authority

The Electrical Safety Authority (ESA) is an administrative authority acting on behalf of the Government of Ontario with specific responsibilities under the Electricity Act and the Safety and Consumer Statutes Administration Act. As part of its mandate, ESA is responsible for administering regulation of the Ontario Electrical Safety Code, Licensing of Electrical Contractors, and Master Electricians, Electrical Distribution Safety, and Electrical Product Safety.

FOR MORE INFORMATION, CONTACT
THE ELECTRICAL SAFETY AUTHORITY:
1-877-372-7233
www.esasafe.com

BBP Best Business Practice
Revision: N/A
BBP Revision History
Date Created: December 16, 2014

Creation Details

Created by: Jason Hrycyshyn, P.Eng
Reviewed by: Name and Role (SMT member or member of other department)
Approved by: EMT Member(s)

Revision History

Reviser	Dept	Revision Made to Document	Rationale	Rev. #	Date

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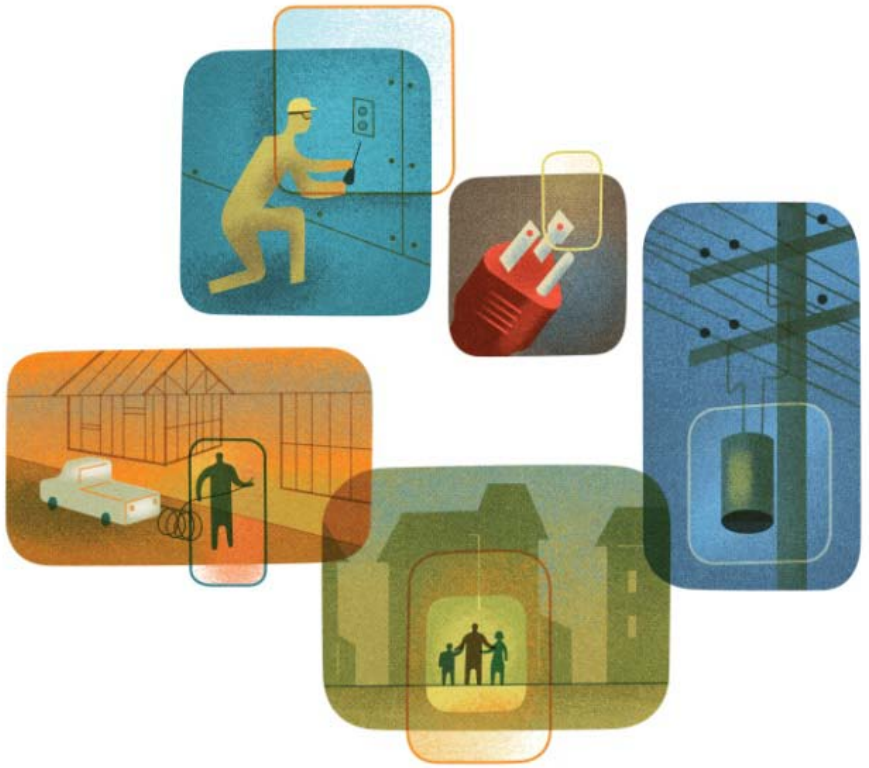
Overvoltage and Life Safety Working Group



Jason Hrycyshyn, P.Eng

February 19, 2015

Temporary Overvoltage W.G.

Scope

Create a Best Practice which ESA and LDCs can follow in the event there is a overvoltage event which may have negatively affected customers life safety devices.

Results

1. Created a Best Practice in the Working Group Meeting, held December 12, 2014
2. ESA reviewed the document internally, no changes required
3. Working Group members sent document for comment on February 18th
4. Review today by the UAC, seeking advice.

Temporary Overvoltage W.G.

Highlights of BBP

1. Meter Damage - Where the LDC has reason to believe damage was caused due to overvoltage, including a lightning event; or
2. Primary to Secondary Line Contacts

A. Ground Fault Circuit Interrupters (GFCIs)
B. Arc Fault Circuit Interrupters (AFCIs)
C. Smoke Detectors; and
D. Carbon Monoxide Detectors

LDC to notify affected customers with attached letter

Temporary Overvoltage W.G.

Name	Company
Aaron Goldman	PowerStream
Alexey Shipkov	ESA - Product Safety
Don Campbell	ESA - Inspector
Farrah Bourre	ESA - Communications
Gerry Yamashita	Hydro One
Greg Sheil	London Hydro
Jason Hrycyshyn	ESA
Kevin McCauley	Utilities Kingston
Lloyd Frank	Kitchener-Wilmot Hydro
Patrick Falzon	ESA

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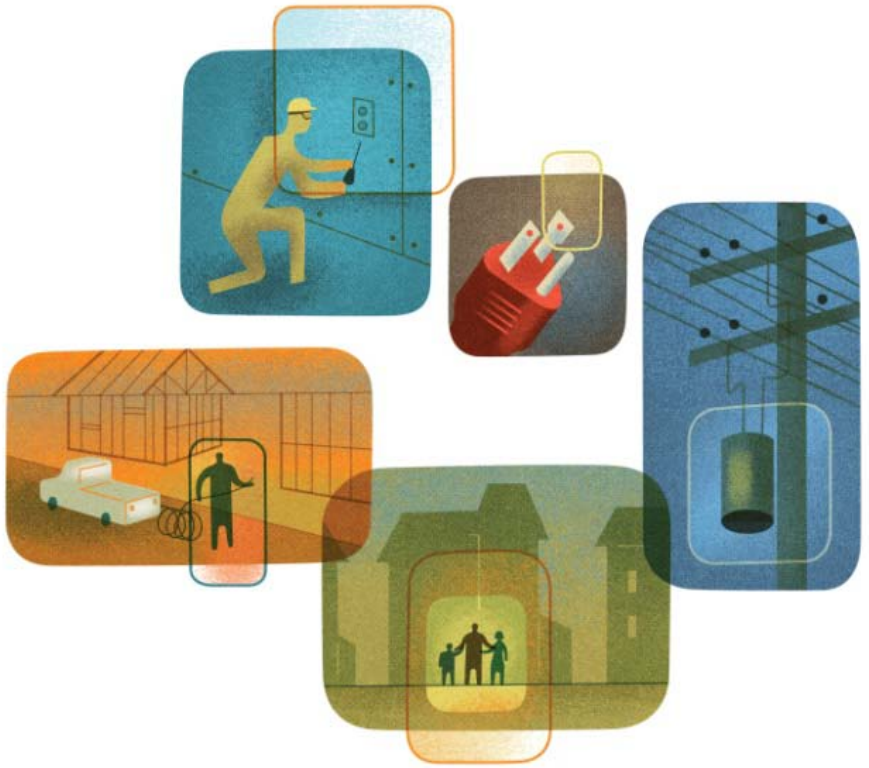
2015 Powerline Safety Campaign



Utility Advisory Council

February 26, 2015

2014 Recap: Trade Campaign

Objectives

- To increase awareness of powerline safety risks on and near job sites
- To drive traffic to powerlinesafety.ca
- Raise awareness of Powerline Safety Week **May 12-18, 2014**

Strategy

- Leverage existing assets where possible
- Enhance trade campaign with new creative, stronger presence
- Engage partners to increase impact

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Target Audience

Focus on at-risk workers

- Powerline contacts in occupational settings continue to occur
- Challenging groups to reach – focus on small business owners as well as safety professionals at large companies
- Heavy construction, arborists, roofers and vehicles/operators with aerial devices

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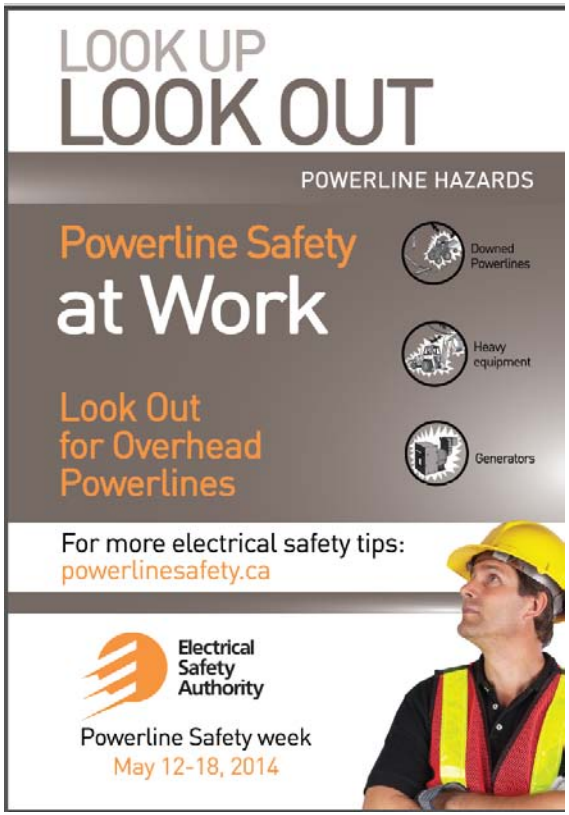
Paid advertising

Combination of print and online trade publications

- Leverage existing creative including YouTube video
- Drive to powerlinesafety.ca



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Direct response pilot

Create toolkit of safety materials for online order free of charge

Heavy construction and arborists/landscapers

- 53 heavy construction orders (311 kits)
- 19 landscape orders (86 kits)
- 1 roofer order (2 kits)

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Mass Media Campaign Objectives

Raise awareness of powerline safety risks in the community and around the home

- Target audience: homeowners with impending outdoor maintenance/related work near powerlines
- Timing: April 21 to May 11; leading up to Powerline Safety Week – May 12-18,2014

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Paid advertising

Short format broadcast advertising supported by online display advertising

- :10 sec closed captioning TV spots on The Weather Network, CP24 , CTV affiliate stations
- :10 sec radio tags in 5 northern Ontario markets
- Standard online display units on theweathernetwork.com

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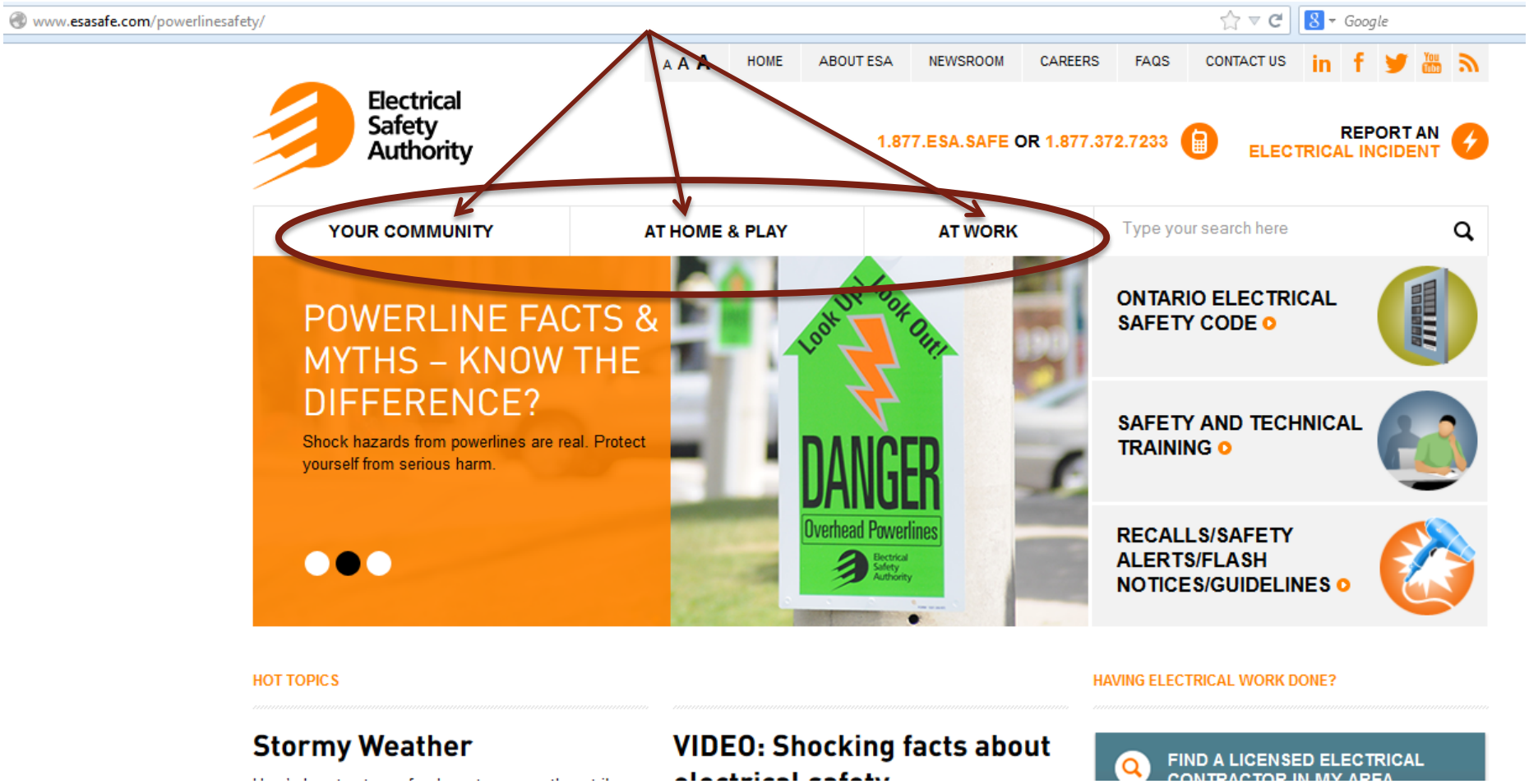
Drive to powerlinesafety.ca



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Advertising toolkit

A collection of approved plug-and-play advertising material

- Provides flexibility to execute local advertising campaigns
- allows for customization of branding/logo
- quick, easy and cost-effective way to do brand advertising in conjunction with an important message

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Toolkit elements

Newspaper & magazine ads

Collateral material & handouts

:30 radio & radio tags

Press release material

Social media material

Website content

Safety tips

Newsletter material (email/direct mail)

Out of home advertising

Online ads

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Innovative, engaging campaign

Powerline Safety Week

Powerline Deadly Dozen

- Online “crime scene” game
- Deliberately graphic/realistic
- Mock evidence images/reports
- “Teach not tell”
- Solve the case and earn contest entry

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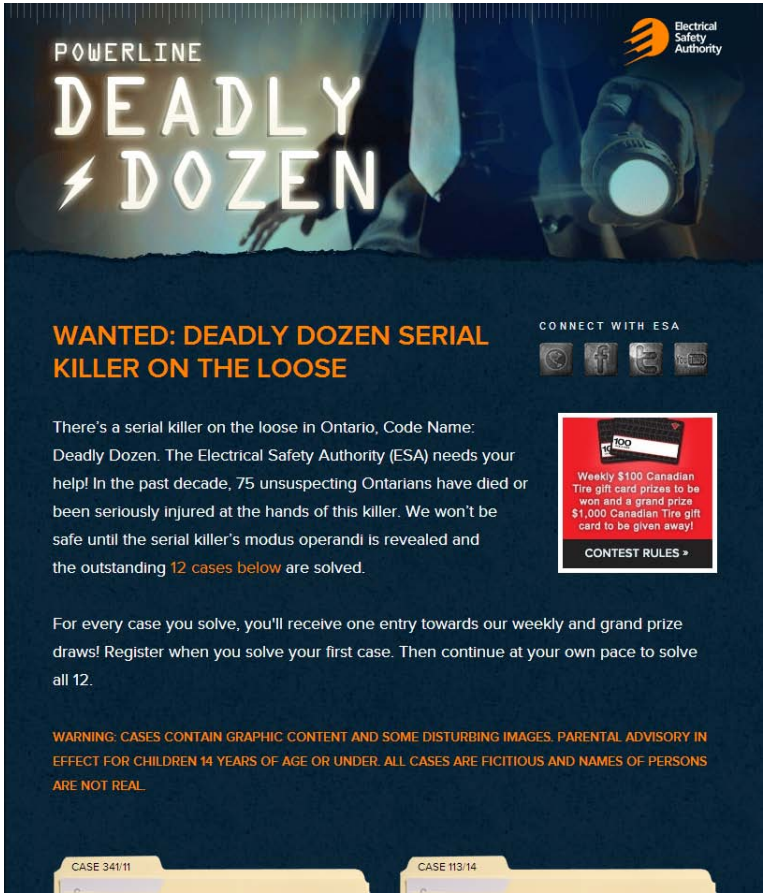
2014 Campaign Results

- 10 million impressions
  - Media coverage on radio and in print
- 65,152 website visits
  - 12 pages per session
  - 5:45 minutes per session avg.
- 6,827 contest entries
- 33 LDCs participated



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2015 Powerline Safety Campaign

2015 Powerline Safety Campaign Objective and Target Audience

Raise awareness of powerline safety hazards among high risk groups

Occupational powerline incidents outnumber non-occupational by 2.4:1

- Occupational: males (18-53); groups at highest risk include heavy construction, landscapers and arborists, and roofers
- Non-occupational: males (18-46)

Risk and evidence-based approach

- Direct resources to higher-risk areas to maximize safety impact; target audience based on incident data
- Focus groups to test messages to ensure resonance; pre/post campaign testing to assess performance

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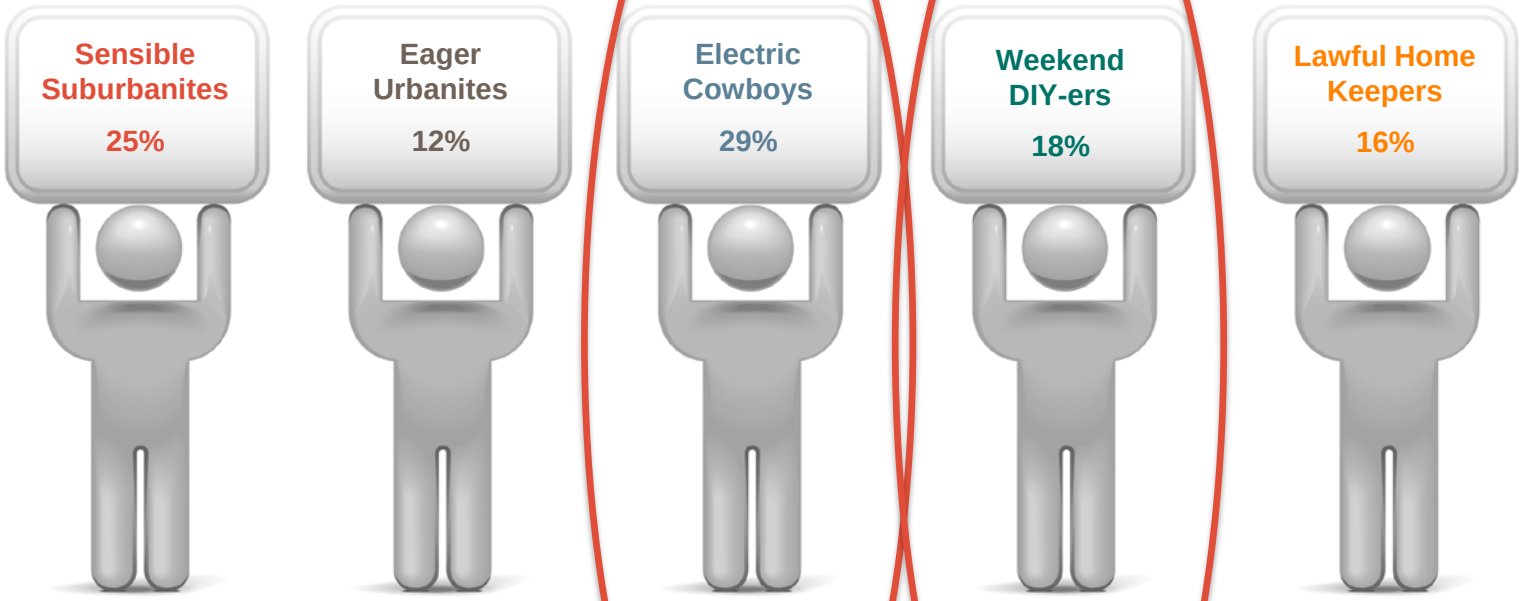
Five Ontario Consumer Segments

TARGET:	Simply Unaware	Interested in More	Challenging At-Risk	Comfortable Informed	Proactive: Low Hanging Fruit
	Sensible Suburbanites 25%	Eager Urbanites 12%	Electric Cowboys 29%	Weekend DIY-ers 18%	Lawful Home Keepers 16%
FOCUS:	***Informing*** Fill in the extensive information gaps	***Engaging*** Give them more reason and information to further support	***Preventing*** Policing and saving them from 'themselves'	***Collaborating*** Working with them for informed DIY decisions	***Advocating*** Provide means for them to advocate for their and others' safety



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Occupational Campaign

Focus on highlighting the hazard

- Raise awareness of powerline hazard on job site
- Drive traffic to powerlinesafety.ca
- Provide links to occupational health and safety resources in broader safety system
  - Where to find training: IHSA
  - Safety rules/procedures: OHSA
  - Employer, supervisor and worker obligations: MOL
  - Encourage workers to speak with H&S professionals

Next steps

- Creative development and focus group testing to refine messaging

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Trade Campaign

- Target audience: the construction worker on-site
- Attention-grabbing online video
- Capturing in freeze-frame the moment of a powerline contact during a construction project
- Showing the dramatic impact including on people
- Placing the moment of event in the mind of the audience
- Driving them to powerline info web content
  - Where to go to find safety information

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Consumer campaign

Build on momentum created by LDC participation in 2014

- ESA “air cover” digital campaign
- Plug-and-play creative elements for LDCs to create materials/advertising/digital content
- Turnkey options for LDCs to provide at events, in offices, etc.
- Messaging to raise awareness of hazard and also how to avoid it
- Next steps
  - Finalize creative elements and share with LDC Communications staff

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Impacts of Updating Regulation 22/04 Referenced Standards and Code

Jason Hrycyshyn, P.Eng

February 19, 2015

Impacts of Regulation 22/04 Updates

Regulation References

ESC – Electrical Safety Code
C22.3 No.1 (2001) – Overhead Systems
C22.3 No.7 (1999/2000) – Underground Systems
NESC (C2 - 1997) – National Electrical Safety Code – Distribution Stations

UAC Action

ESA is looking for feedback from LDCs on the impacts of updating the referenced Standards and Code to the latest versions.

Impacts of Regulation 22/04 Updates

Highlights of Changes from Referenced Standards to Latest

1. ESC – Is by default the latest version
2. No.1
   - Some horizontal clearance changes
   - Some grade of construction changes
   - Conductor tensioning
   - Linear vs Non-Linear Design Allowances

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Impacts of Regulation 22/04 Updates

Highlights of Changes from Referenced Standards to Latest

3. No.7
   - Reference to C22.3 No.61936-1 for fenced or indoor supply stations
   - Overvoltage Protection – BIL protection
   - Protection of above surface equipment ex. bollards
4. NESC
   - C22.3 No.61936-1
   - Signage
   - Storing Materials, Equipment, Vehicles in Stations

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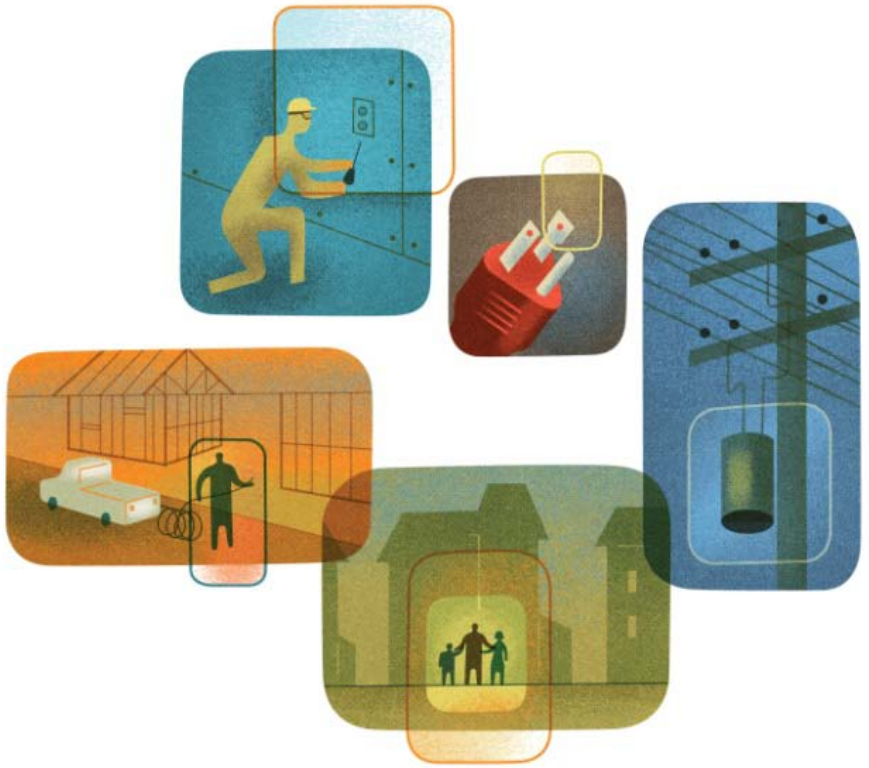
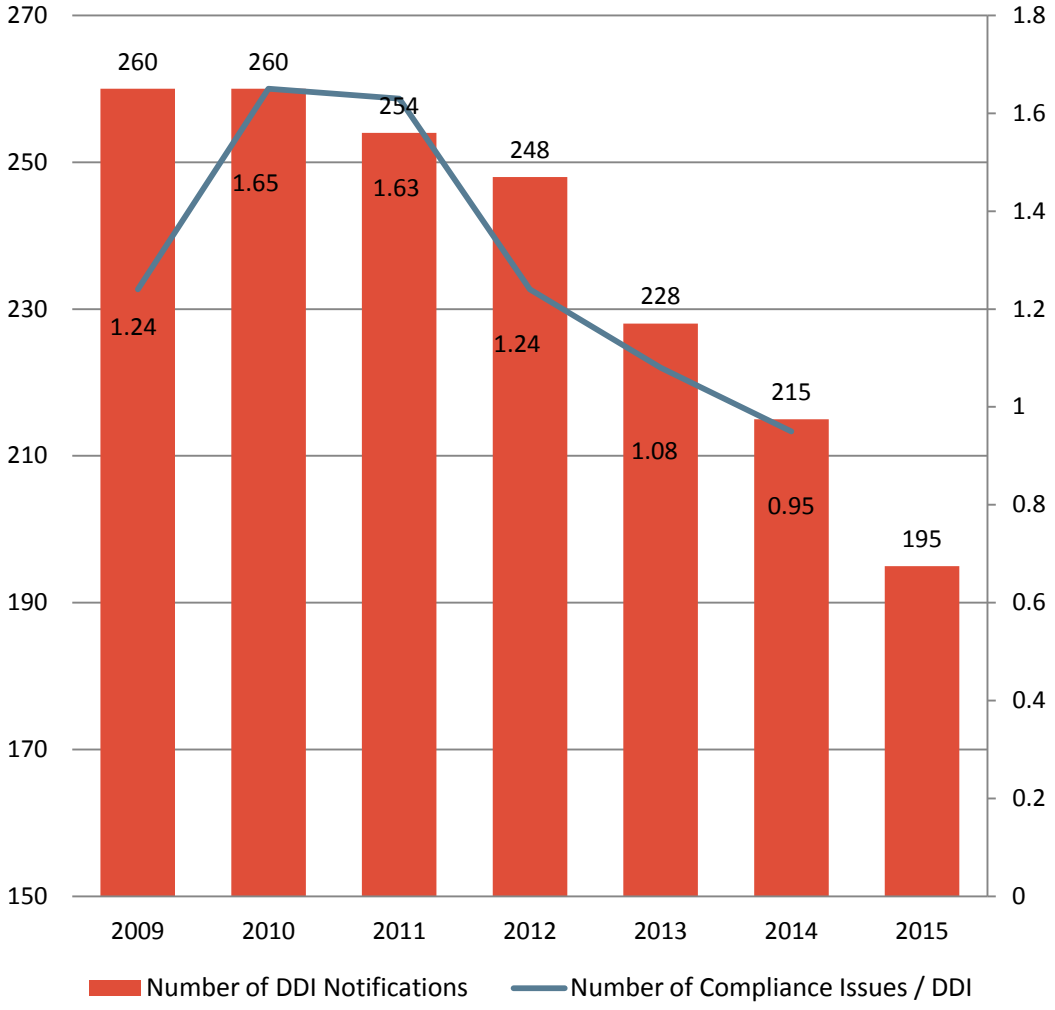
Due Diligence Inspections



Jason Hrycyshyn, P.Eng

February 19, 2015

Number of Inspections & Results



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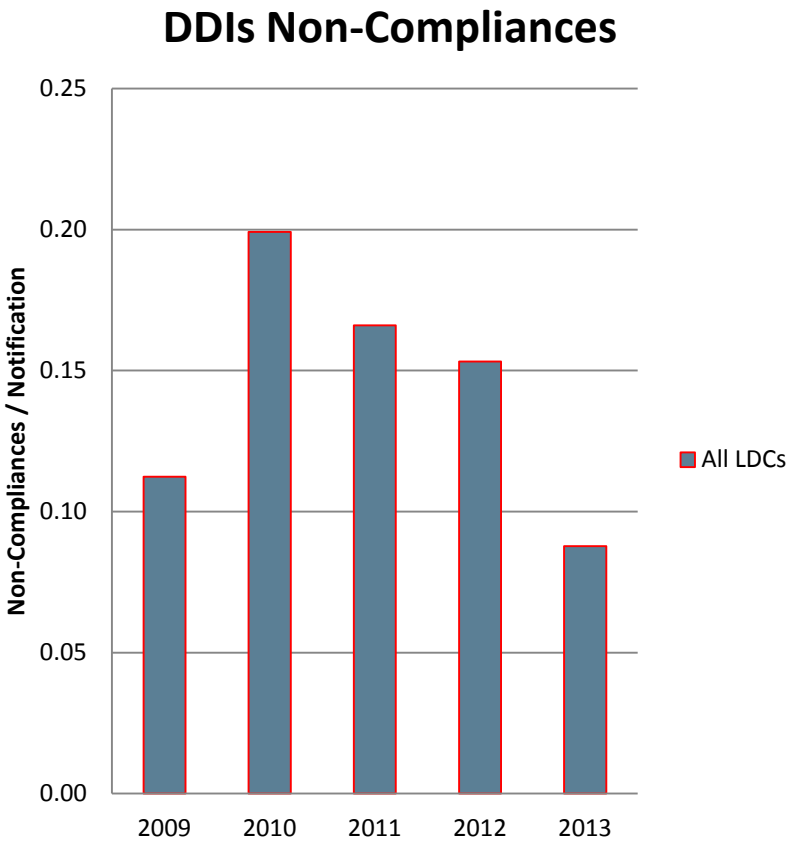
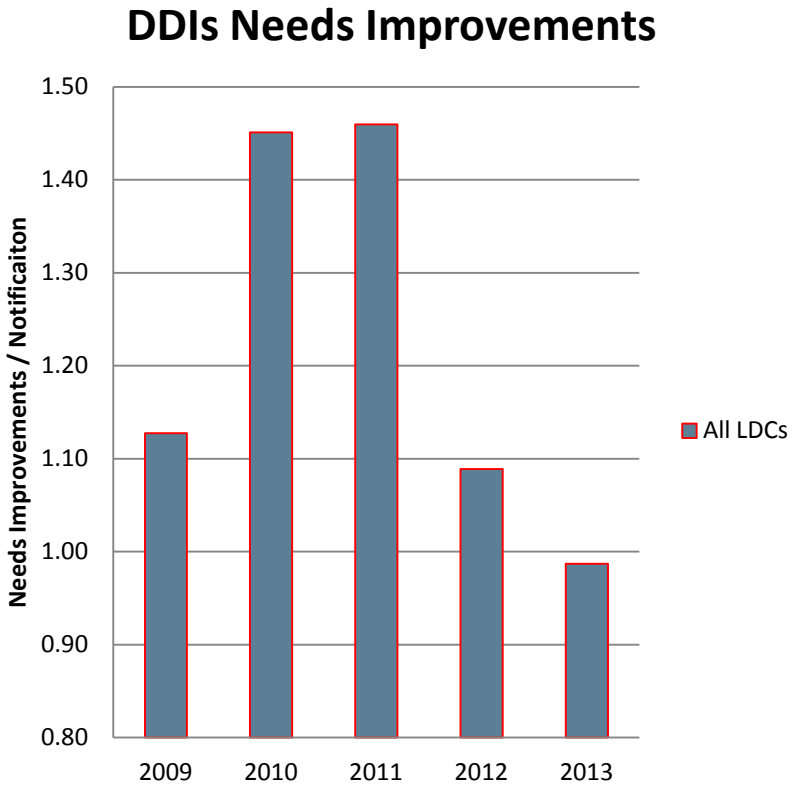
Hydro One vs the Industry?





Note: ESA continues to review and evolve its approach to working with Utilities

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4.2.4.2 Mechanical protection of supply cables

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Same Area – Different Pole

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Shovel side of pole and guard is inadequate

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Shovel side of pole and guard is inadequate

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