



Auditor Debrief

October 27, 2023



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

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AGENDA

1. Review of 2022 Audit Results
2. ESA Direction – Notable
3. ESA's Third Party Attachments Guideline 2.0
4. CSA Standard No.11 – Maintenance
5. 2023 Questions & Issues / Auditor Feedback
6. Focus of 2023 Audits
7. Other Information
 - a) Bulletins
 - b) Other Issues

Summary of Audit Findings for 2022

Total of 60 LDC Audit reports (all submitted)

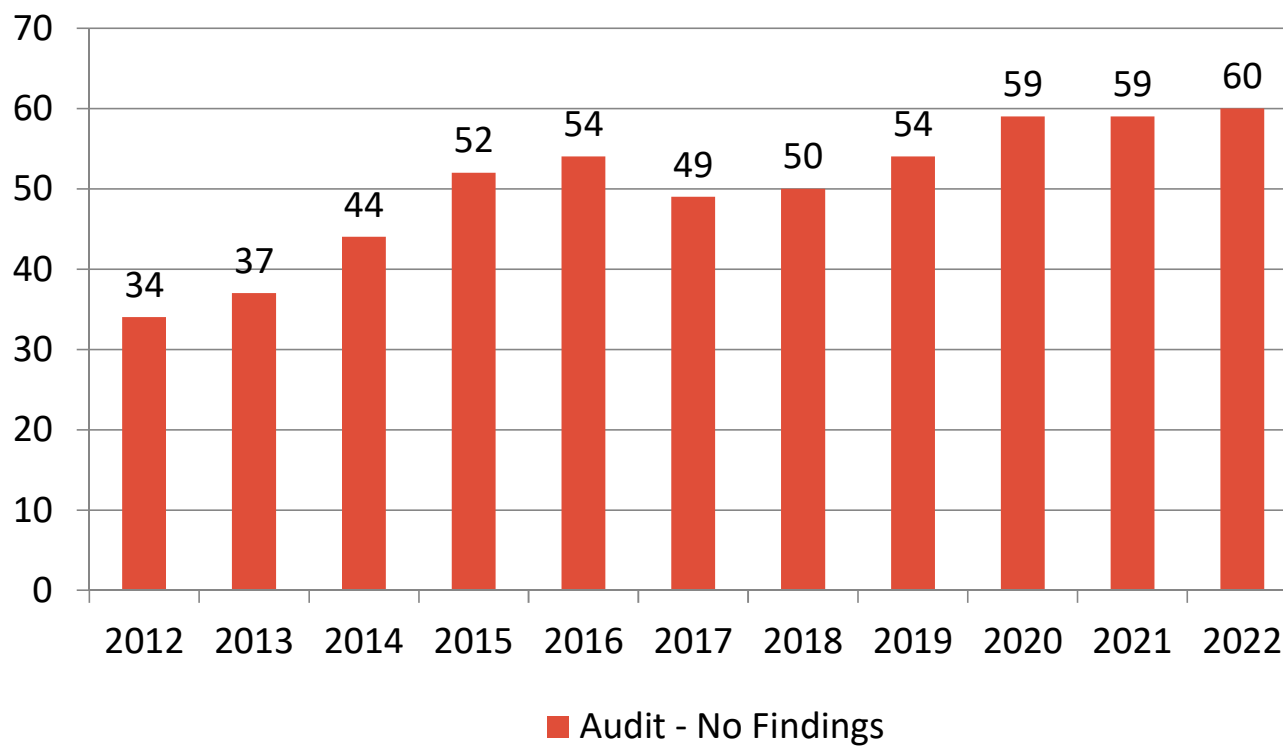
- 26 completed (October 13, 2023).

LDCs - Full Compliance ('19-54), ('20-59), ('21-59).

In the 2022 Audits (preliminary review)

- 0 LDC - Non-Compliance findings
- 0 LDC - Needs Improvement findings

Summary of Audit Findings Life to Date



Switch to %
in the future
as the
number of
Distributors
decrease this
number will
as well.

Section 4 - 8 Audit Findings

Sections 4-8

Nothing appears to be common.

Accurate?



NEW ESA BULLETINS

Information and Direction

Notable ESA Direction – Since last year

1. Bulletin 2-31-0 Application of OESC to electrical installations within distributor owned stations
2. DB-01-23-v1 Customer-Owned Gas Insulated Switchgear (GIS)
3. DB-08-22-v1 Metering and Measurement Canada Specifications
4. Energized Temporary Distribution Work

OESC Bulletin

2-31-0



Bulletin 2-31-0 Application of OESC to electrical installations within distributor owned stations

Clarify the application of OESC requirements within distributor owned stations, including

1. Plan Review submissions;
2. Filing notifications of work; and
3. Inspection

Bulletin 2-31-0 Application of OESC to electrical installations within distributor owned stations

Excerpts

Although the following electrical equipment and installations are not exempt under OESC, ESA will permit the below to follow the provisions and processes under Reg 22/04 to demonstrate compliance with the OESC, (without filing notifications with the ESA), under the associated **conditions**:

Interpretation: The following parts of indoor and outdoor parts of stations, when distributor-owned, can meet the OESC by meeting Regulation 22/04.

Bulletin 2-31-0 Application of OESC to electrical installations within distributor owned stations

Interpretation

- The bulletin uses the Part I definition of “station”, which encompasses a large amount of equipment.

Definition

Station — an assemblage of equipment at one place, including any necessary housing, for the conversion or transformation of electrical energy and for connection between two or more circuits.

Bulletin 2-31-0 Application of OESC to electrical installations within distributor owned stations

Indoor – lighting, general-purpose receptacles, transformers with a secondary voltage below 750 V & downstream panelboards, sump pumps, space heating, etc.

Note: Indoor and Outdoor refer to the location of the electrical equipment and/or installation.

Bulletin 2-31-0 Application of OESC to electrical installations within distributor owned stations

Conditions (Indoor):

1. The building/structure is either secured (tamperproof hardware and/or locked) or located within a secured fenced compound;
2. The primary purpose of the building/structure and these electrical installations is to support the distribution of power;
3. The electrical installations are not accessible to public (including employees who are not qualified trades personnel* to interact with such systems); and
4. The building is dedicated to housing distribution equipment (e.g. switching arrangement) and contains no other occupancy (such as, but not limited to meeting rooms, offices, cafeterias, warehouses, garages, machine shops, recreational facilities, training facilities, etc.)



Bulletin 2-31-0 Application of OESC to electrical installations within distributor owned stations

Interpretations – INDOOR

- Indoor station equipment can be accessible to professional engineers or other non-trades staff, when they will be accompanied by a qualified trades person. In this scenario **Condition 3 is met**.
 - Example 1: A P.Eng is expected to work on relay or SCADA onsite then the condition is met if the journeyperson provides the access.
 - Example 2: A P.Eng or labourperson (wall painter) is not provided access by a qualified trades person then **Condition 3 is not met**.
- If the building contains a washroom or office then **Condition 4 is not met**.

Bulletin 2-31-0 Application of OESC to electrical installations within distributor owned stations

Outdoor – lighting, station motorized gates, fencing, security equipment, underground vaults, cooling fan power, etc.

Conditions (Outdoor):

1. Outdoor installations when the facility is fenced, includes only building/structures as described above, and does not contain any other building.

All other electrical installations and equipment for facilities (including but not limited to construction trailers), systems and processes that are not a direct and integral or supporting part of the electrical distribution system **will be subject to the requirements of the OESC including filing notifications of work, Plan Review submission, GPR studies etc.**

Note: Construction trailers are re-locatable structures. They are not considered vehicles under the OESC

Bulletin 2-31-0 Application of OESC to electrical installations within distributor owned stations

Interpretation – OUTDOOR

Applies to fenced stations, (fences include walls), but not pad-mounted stations.

- If a transformer's cooling fans are outdoor and behind a wall only, then **Condition 1 is met.**
 - If you build a pad-mounted station without a fence and have lighting, **Condition 1 is not met.**
- Only applies with “underground vaults”, does not apply to vaults at ground level. So, if you have one inside the fence **Condition 1 is not met.**
- Construction trailers are required to meet OESC, as per bulletin.
- Motorized gate assembly that is part of a fenced station, **Condition 1 is met.**



DB-01-23-v1

Customer-Owned Gas Insulated Switchgear (GIS)

Customer-Owned Gas Insulated Switchgear (GIS)

Bulletin focuses on GIS switchgear, but same direction could be applied to metal enclosed switchgear.

Highlighted Issues:

- The equipment does not meet the high voltage service entrance requirements of CSA C22.2 No. 31 and OESC Rule 36-204.
- Separate compartments for “Supply Authority” and “Customer” switches.
- Grounding of the distribution system in the switchgear by non-distributor staff, while energized (i.e. live).
- Main Customer Switch must be accessible to the Customer (i.e. not locked by the Supply Authority).

Customer-Owned Gas Insulated Switchgear (GIS)

As an interim solution until May 1, 2025, ESA will consider accepting customer-owned GIS equipment that is not approved for service entrance under specific criteria, which the following affect Electrical Distributors:

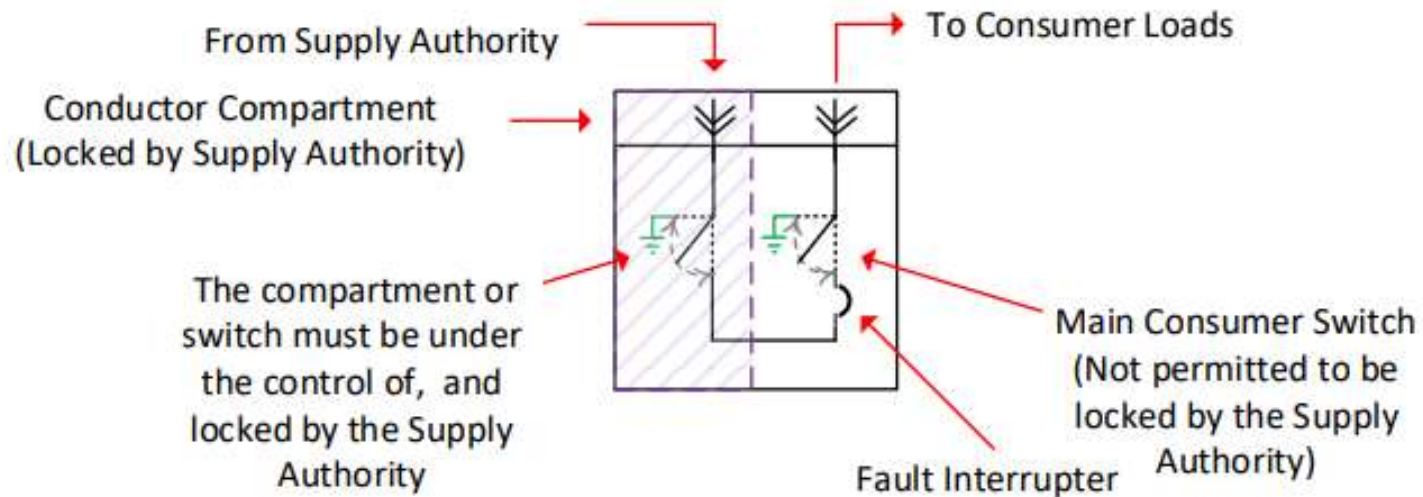
- Enclosure to have lockable separate compartments for:
 - Supply authority switching;
 - Supply authority cables; and
 - Main consumer switch;
- Compartments containing the cables and switch for supply authority use shall be locked by the supply authority and labelled “COMPARTMENT FOR SUPPLY AUTHORITY USE ONLY”;
- Switches capable of grounding the service conductors shall be made incapable of being placed in the grounded position (Figure B2), unless locked in a separate compartment under the control of the supply authority (Figure B1) ; and
- The main consumer switch shall remain readily accessible (not locked by the supply authority).

Customer-Owned Gas Insulated Switchgear (GIS)

The following Figures are examples that illustrate requirements for the possible configurations of customer owned GIS, used as service entrance equipment.

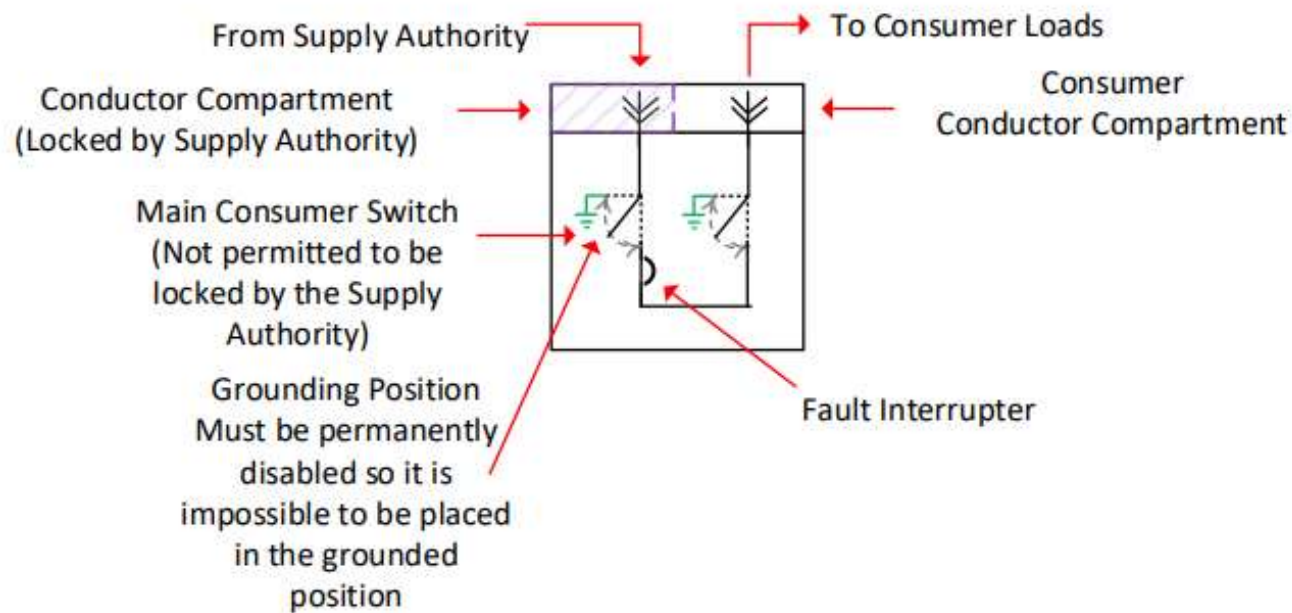
Customer-Owned Gas Insulated Switchgear (GIS)

Figure B1: 2 Way GIS with first switch under the control of the Supply Authority



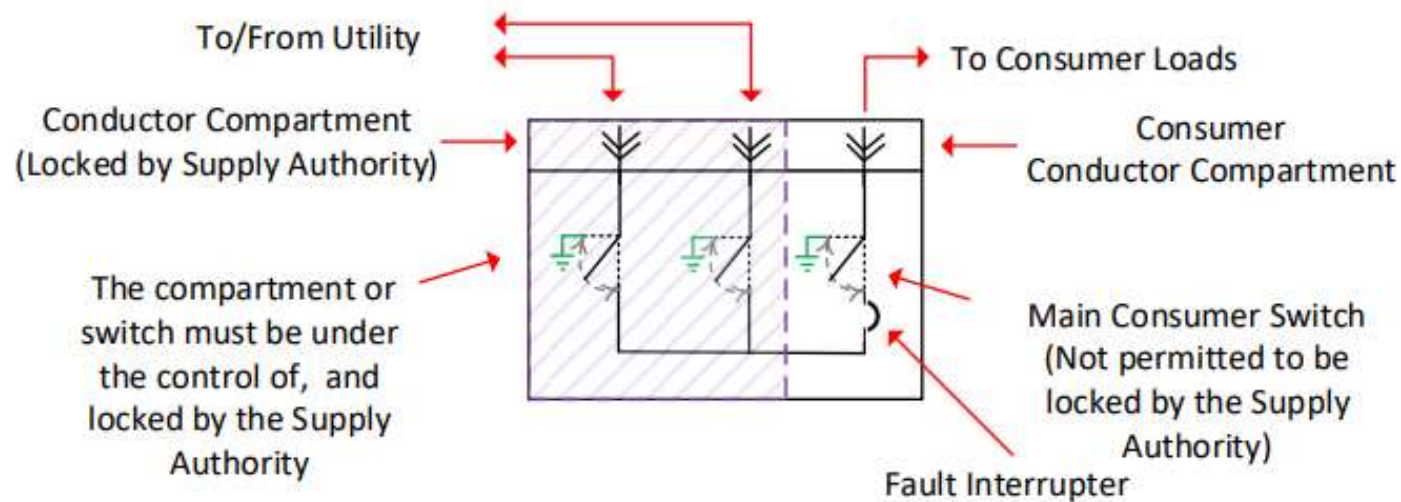
Customer-Owned Gas Insulated Switchgear (GIS)

Figure B2: 2 Way GIS with first switch not under the control of the Supply Authority



Customer-Owned Gas Insulated Switchgear (GIS)

Figure B4: Supply Authority Distribution Loop/Dual Radial Feed





DB-08-22-v1

Metering and Measurement Canada Specifications

Metering and Measurement Canada Specifications

ESA Direction

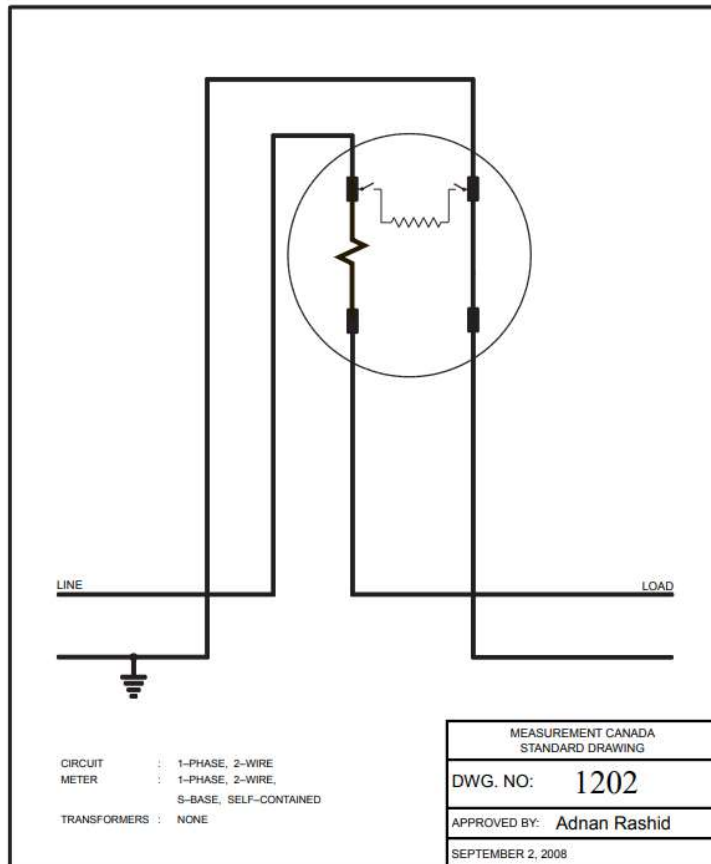
Measurements Canada (MC) specifications for metering work (electricity metering equipment and its associated equipment) are **deemed to satisfy Regulation 22/04 section 7, without approvals by a professional engineer** that is subject to the Professional Engineers Act (i.e. licensed engineering practitioners of Ontario).

Since the **MC specifications address only the accuracy** of the electricity metering, the **Electrical Distributor shall ensure that the installation work is based on plans, standard design drawings or standard design specifications that meet all the safety requirements, as per Regulation 22/04 section 4**. A list of metering related safety requirements include, but are not limited to providing:

- adequate space provisions for proper operation and maintenance (e.g. working space);
- insulating and barrier provisions to prevent inadvertent contact with live conductors (e.g. conduits, ground movement mitigation of equipment to meters);
- clearances and separations to minimize the possibility of contributing to or causing a fire or explosion (e.g. clearances to gas discharge openings, mechanical protection information).

Note: “Observations” may appear in Audits and Compliance Assessments starting January 1, 2023 for this issue. “Needs Improvement” or “Non-Compliance” findings may appear starting January 1, 2024.

Metering and Measurement Canada Specifications

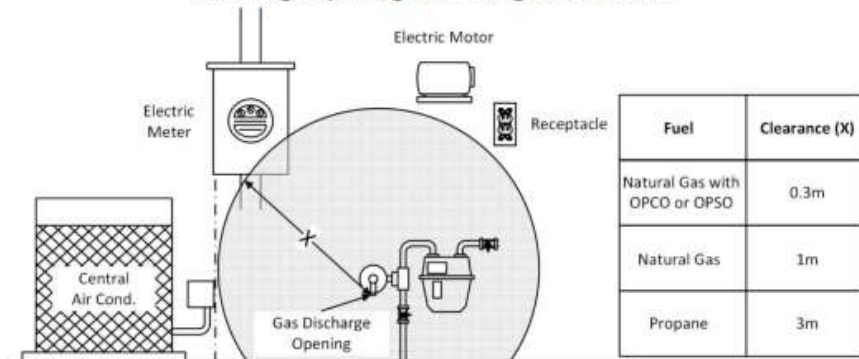


Measurement Canada drawing does not show safety details such as:

- adequate space provisions for proper operation and maintenance (e.g. working space);
- insulating and barrier provisions to prevent inadvertent contact with live conductors (e.g. conduits, ground movement mitigation of equipment to meters);
- clearances and separations to minimize the possibility of contributing to or causing a fire or explosion (e.g. clearances to gas discharge openings, mechanical protection information).

Metering and Measurement Canada Specifications

Figure B1 - Minimum clearance required between electrical equipment and gas discharge opening according to FS-255-21



The MC drawings can be used without modification, however any missing information to address the Safety Standards of Regulation 22/04 are required to be addressed in order to be in full compliance with Regulation 22/04.

Example of information regarding clearances to other equipment, does not exist within the MC drawings and this needs to be addressed by the Distributor.

Note: CEC Part III uses 0.9m and the OESC uses 1.0m for the clearance to Natural Gas without OPCO or OPSO.

Energized Temporary Distribution Work

Energized Temporary Distribution Work

ESA - Flash Notice

ESA has been recording more incidents of work in proximity to the demarcation point for disconnection purposes, where ESA is questioning the barriers of equipment.




Energized Temporary Distribution Work

ESA - Flash Notice

As per Distributor Bulletin DB-05-18 entitled “Energized Temporary Distribution Work”, ESA is looking for Distributor’s to meet Sections 6-8 of Regulation 22/04.

Electrical Distributors are expected to have approved plans, drawings or specifications that address the work shown in the pictures on the previous slide.

The plans, drawings or specifications should address what is standard practice. Are energized parts or conductors allowed within the equipment that a customer or Licensed Electrical Contractor (LEC) is expected to work on or it? What are suitable barriers to address live parts and/or conductors that may be temporarily exposed.



IHSA's Guideline for Working Near Overhead Electrical Powerlines and Equipment

IHSA's Guideline for Working Near Overhead Electrical Powerlines and Equipment

ESA - Flash Notice

The guideline targets non-electrical construction workers (including roofers, painters, carpenters and other trades) that work outdoors near overhead powerlines.

Highlight

The guideline and ESA **recommend** a safe minimum distance of **1 metre (3.3 feet) below 750V**.



Above-Ground Duct Barriers for Supply Service Conductors

Above-Ground Duct Barriers for Supply Service Conductors

ESA - Flash Notice

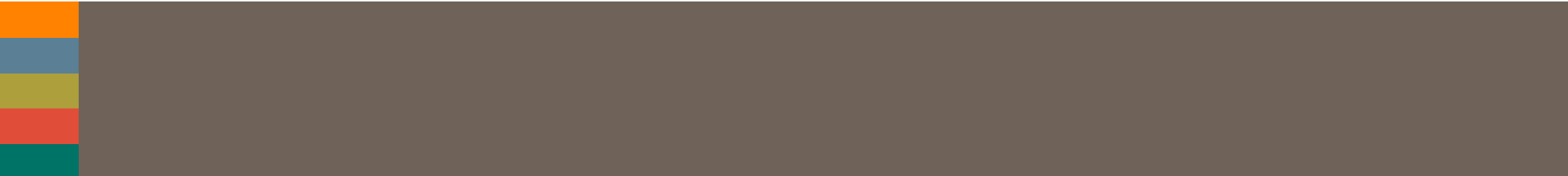
ESA is recommending that Electrical Distributor's standards should incorporate means to account for ground movement for ducts attached to supply enclosures, such as meter bases.



10.3.2 Above-ground duct attached to supply enclosures

Above-ground duct attached to supply enclosures shall account for ground movement (e.g., settlement, freeze/thaw cycles, seasonal soil moisture variation, or future weather projections), and changes through expansion or contraction to the duct.

Note: **Expansion joints** for duct can be used to account for ground movement and expansion and contraction forces.



Third Party Attachments Guideline & CSA C22.3 No.11 - Maintenance

Third Party Attachments Guideline

ESA – Released new guideline July 7, 2023 (old was October 5, 2005)

Highlights

1. Six (6) bulletins were moved into the Guidelines. Some bulletins remain on the website as they are also applicable to the Section 7 guideline.
2. Guidance on “Software-based engineering tools” was added
 - Distributor may stipulate the software and associated settings to use when analyzing the loading of supporting structures.
3. “Certificate of Approval” or “Certificates of Deviation” are acceptable forms of documentation to address deviations.
4. CVP re-fresher training interval information was added.
 - 1 year recommended. 2 years with documented agreement with ESA.
5. Encourages Attachers to submit documentation to be appended to the distributors CVP.



CSA STANDARDS - REGULATION 22/04

ESA is still in preliminary talks with the OEB regarding C22. 3 No.11.

OEB is reviewing the standard and ESA plans to harmonize the maintenance requirements with the OEB.



Building Broadband Faster Act (BBFA)

or

Accelerated Broadband Program (ABP)



BUILDING BROADBAND FASTER ACT (BBFA)

The Ontario Government is leading an initiative to ensure that all Ontarians have access to Broadband (from wireline) by 2025.

This means that about **700k households (premises)** will need to receive access **by 2025**. Initiative launched **March 2021** and the **rules put in place by November 2021**.

Other Related Names:

- Accelerated High-Speed Internet Program (AHSIP) - (previously the Accelerated Broadband Program)
- Up to Speed - Ontario's Broadband and Cellular Action Plan



Auditor Questions

Questions?

Proposed schedule – Order in which to address guidelines **(Note 1)**

- 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)

Note: Order may be changed as needed to address new requirements, stakeholder feedback, etc (e.g. Regulation amendments).

Proposed schedule – Order in which to address guidelines

- 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)

Focus of 2023 Audits

ESA is looking for the Auditors to focus on the following items in the next Audit Year.

- Energized Temporary Distribution Work, particularly around the demarcation point as outlined in the Flash Notice.
- Metering standards or specification development in order to address any safety gaps in their information for field crews.
- Recognition of OESC Code Bulletin 2-31-* in the event that new distribution stations are being planned or built.
- Maintenance

Bulletins published

Bulletins

[DB-01-23-v1 Customer-Owned Gas Insulated Switchgear](#)

[DB-08-22-v1 Metering and Measurement Canada Specifications](#)

Flash Notices

[DFN-02-23-v1 Above-Ground Duct Barriers for Supply Service Conductors](#)

[DFN-01-23-v1 IHSA's Guideline for Working Near Overhead Electrical Powerlines and Equipment](#)

Other Issues

1. Configurations of Concern – On-going
2. Legislative Review Panel, Ontario's Broadband Plan & Building Transit Faster Act - On-going
3. COVID-19 - No changes(Auditor & LDC decides on remote audits)
4. Section 7-8 Guidelines - Review will begin in the Q1 of 2024
5. CSA (O/H & U/G) standards - On-track (2022 amendment, 2025 new versions)
6. Load Serving Entities / DSOs - On-going (No new news)



Questions

Any Questions?