

Auditor Debrief

**November 13, 2014
(web version)**

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

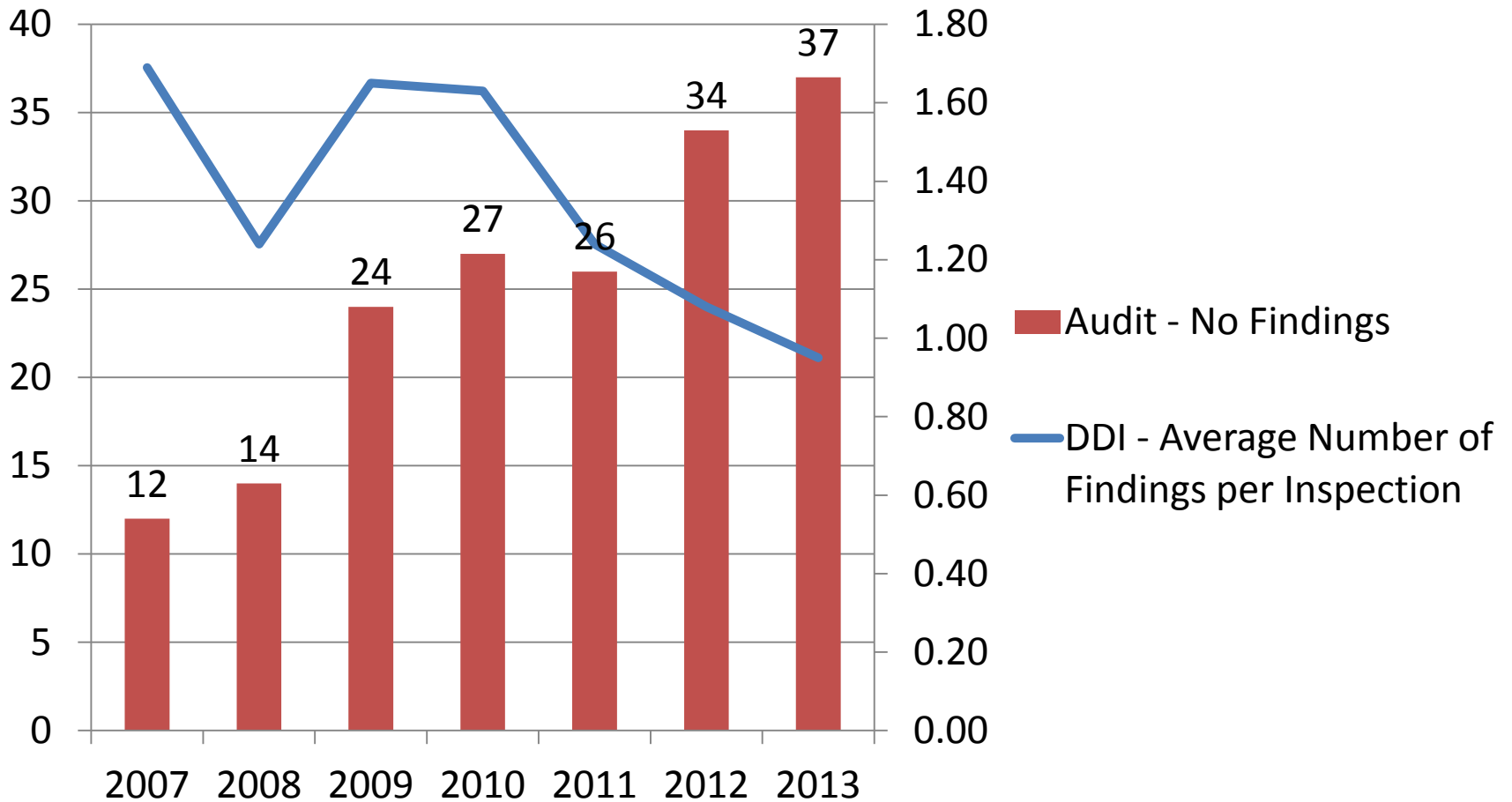
AGENDA

1. Review of 2013 Audit results
2. 2014 Questions & Issues
3. Focus of 2014 Audits
4. Auditor Feedback
5. Other Information
 - a) Bulletins
 - b) Other Issues

Summary of Audit Findings for 2013

- 37 LDCs - Full Compliance
- 30 LDCs - Needs Improvement only
- 23 LDCs with only one Needs Improvement ('10-17;'11-27,'12-21) and 3 LDCs with more than two Needs Improvements ('10-14;'11-11,'12-6)
- 5 LDCs had 1 Non-compliance
- 4 LDC had more than 1 Non-compliance

Summary of Audit Findings Life to Date



Common audit findings

Section 6 – Equipment Approvals

- Process for approving equipment returned from field or refurbished
 - No process documented for approving equipment for re-use from field or refurbished/repared.
 - Some equipment is returned to inventory without approval/ approval records not documented
 - The documented procedures/policies should be updated to reflect current practice
 - There is discussions underway regarding the Cam Tran C2C Program and similar programs.
- Approved equipment list
 - Unapproved equipment used
 - Not maintained / updated
 - Controls to ensure that only approved equipment is purchased
 - Legacy equipment in inventory not on approved list.

Common audit findings

Section 7 – Design

- Plans signed by persons not P.Eng.
Must be registered with the PEO.
- Designs without certificates of approval
- Plan changes not approved /approval not recorded
- Designs not reviewed / approved for re-closer protection settings or no Certificate of Approval

Common audit findings

Section 8 – Construction Inspection and sign-off

- Maintenance schedules (section 4)
 - Documentation incomplete;
 - Lack of verification that entire system is reviewed on 3 or 6 year cycles.
 - No schedule for some equipment/ records unavailable
- Incomplete/missing Records of Inspection and/or Certificate
- Not all work being signed off – meter replacements; small repairs; Trouble calls
- Work energized in stages
 - Need Record of Inspection & Certificate at each stage of energization
- Missing Third Party attachment ROI/Certificates
- Not following approved CVP / CVP not updated to reflect new processes

Auditor Question

- Q. Does listing non-major equipment on the USF equipment list provide sufficient evidence of equipment approval by an LDC? Does this satisfy ESA Technical Guideline 2.7.5 for “supporting documentation” or must each LDC provide a record of approval by its competent person?
- A. No. The list is one in which other LDCs have approved equipment and often there is the supporting documentation in which they have done so. The LDC is required to approve the equipment via one of the options listed in the Guideline under 2.7.5.

USF Statement on the “USF Equipment List”

- The USF website is a library of information, including industry standards, and manufacturers test reports.
- All of this information is available for use by any USF Member in order to approve its materials, using its internal process, by a competent individual.

Auditor Question

- Q. Is a person listed in the LDC's CVP as competent, considered to be competent for approving equipment for use and re-use? What if the LDC's documented equipment approval procedure shows that persons listed in the CVP as competent are also considered competent to approve equipment?
- A. **No. The CVP is only for addressing Section 8 requirements and not Section 6.**
 - B. Some LDCs included equipment approvals within the CVPs, however when this was done ESA encouraged its removal, and if that was not accommodated ESA made it clear that ESA was not approving the LDCs Section 6 practices.
 - C. The person may be competent to approve under Sections 6 and 8, however the CVP is not the document which would state this.

Auditor Question

- Q. Is a certificate of approval (or P.Eng. seal) required for third party attachment plans submitted by one LDC attaching to the pole line of a neighbouring LDC? The plans could be based on the standards of both LDC's.
- A. Yes a certificate of approval is required under Section 7. ESA has stated it has the same expectations of any 3rd Party Attacher, no matter if they are another LDC, communication company, or other.

Auditor Question

- Q. Soil resistivity measurement is required for substation grounding electrode design. Could a ground resistivity study by a consultant that displays neither a certificate of approval nor a P.Eng. seal be relied upon by an LDC for calculation of GPR, step and touch potentials? Should auditors record this as a noncompliance, needs improvement or an observation?
- A. This information is used to create the ground grid for the station, which is important to ensure a safe installation. The entire plan must be covered under a Certificate of Approval. The plan can be split up between P.Eng's and/or ESA (the Authority).
- B. If it can't be demonstrated that the entire plan is covered this is a Non-Compliance with 22/04.

Auditor Question

Q. What if the LDC designs the grounding electrode for a 44 kV substation without a soil resistivity study?

- A. ESA is not aware of any LDC having standard design drawings for 44kV installations. This is typically under a “Plan”.
- B. Step and Touch shall be controlled, so this needs to be addressed, and this is addressed through a soil resistivity study. If this is not addressed this should be documented as a Non-Compliance.

C. CSA 22.3 No.7

15.4.1 Pad-mounted supply equipment

Pad-mounted supply equipment (i.e. transformers and switchgear) shall be grounded to control step and touch potentials.

Auditor Question

Q. Load-break switches are considered major equipment. Should not in-line switches also be considered major equipment since they can be operated without a load-breaking tool?

- A. Section 2.1.1 of the Technical Guideline lists the Major Equipment. At this time the following excerpt exists:
 - *Load break switches, including single and three phase units (air, SF6, oil, vacuum insulated, solid dielectric, etc).*
- ESA will examine expanding this section to include other switches, however at this time Auditors are expected to use the existing list.

Auditor Question

- Q. Do as-built plans provide sufficient evidence that a final inspection has been done and deficiencies have been corrected or is a certificate of inspection also required?
- A. No. Regulation 22/04 requires that a Record of Inspection and Certificate exist before putting a distribution system into use. ESA expects these documents will be created, as per the LDCs approved CVP. ESA has not approved as-built plans on their own as representative of a Record of Inspection and/or Certificate.

Auditor Question

- Q. Is the signature of a P.Eng. on a document equivalent to a P.Eng. seal?
- A. Regulation 22/04 requires a Certificate of Approval to exist. ESA does not approve the format of the Certificates of Approval nor regulates the proper use of the P.Eng signature/seal. Sample Certificates of Approval are provided in the Technical Guideline, however the wording should be similar.

Certificate of Approval

The installation work covered by this document meets the safety requirements of Section 4 of Regulation 22/04

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Auditor Question

Q. Is the signature of a P.Eng. on a document equivalent to a P.Eng. seal?

B. ESA sees this question as a PEO / PEA question. On the PEO's website the following can be found.

When do I need to use my seal?

Section 53 of [Regulation 941](#) of the [Professional Engineers Act](#) states that "[e]very holder of a licence, temporary licence or limited licence who provides to the public a service that is within the practice of professional engineering **shall sign, date and affix the holder's seal** to every final drawing, specification, plan, report or other document prepared or checked by the holder as part of the service before it is issued."

Auditor Question

Q “In comparison to wood poles, there are many disadvantages and concerns in using concrete poles, not the least of which is safety, as listed below:

- Safety: Concrete poles are electrically conductive and could pose an electrical hazard if the energized electrical plant comes in contact with the pole.
- The safety issue is an overarching concern. In accordance with Regulation 22/04 “Electrical Distribution Safety”, we are bound to engineer, construct and operate our system in the safest way possible.

In consideration of the above, I would like to know if ESA has any concerns with using concrete poles. “

A. No concerns with using concrete poles. This equipment, like all equipment, is to be approved. This should address the safety aspect.

Focus of 2014 Audits

- Auditors are requested to focus on the LDC's maintenance results (compliance with the Ontario Energy Board's Distribution System Code – Appendix C).
- In particular chambers (also known as vaults), and similar underground infrastructure is highlighted.

Bulletins published

- DB-05-14 Major Equipment Refurbishment
- DB-04-14 Installation Methods – Sags and Tension Overhead Conductor
 - Using Sag and Tension Tables to ensure conductors remain in their expected zones
- DB-03-14 Installation Methods – Guy Anchors
 - Importance of installing anchors correctly

Bulletins published

- DB-02-14 Process for Safety Concerns on Joint Use Poles
 - Regulator's expectation that LDC infrastructure on 3rd Party Poles will remain safe, due to the regular inspections that will take place as per Appendix C of the OEB DSC.
- DB-01-14 Barrier Support Structures and Grounding Requirements
 - Regulator's expectation that no matter who owns the barrier, the LDC has a responsibility to ensure their infrastructure remains in a safe condition

Other Issues

ESA will be looking for Working Group volunteers in order to create Best Practices around the following items.

1. Major storm damage
2. Temporary Overvoltages

LDC Mergers

Mergers and Acquisitions

- NO LDC mergers have occurred

Potential changes in the near future

- Norfolk Power acquisition by Hydro One – approved (OEB license still exists)
- Haldimand Country Hydro Inc acquisition by Hydro One – waiting for OEB approval
- Woodstock Hydro acquisition by Hydro One – waiting for OEB approval
- Brant County Power Inc acquisition by Cambridge & North Dumfries Hydro Inc - (OEB license still exists)

- Any Questions?