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RECOMMENDED:	M. Lamoureux	NO:	REV:
APPROVED:	C. Malone		
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Contractor Qualifications
To Work On or Around
Hydro Ottawa Electrical
Overhead Distribution System

REVISION SHEET

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1.0 Introduction

Hydro Ottawa Limited requires competent contractors when working On or Around the Hydro Ottawa Limited distribution system. This procedure specifies the contractor's craftsmanship requirements for overhead activities as well as meeting the requirements of:

- Ontario Regulation 22/04
- ESA / TSSA Guideline for Excavation in the Vicinity of Utility Lines.
- OEB Alternate Bid definition for contractors
- Public Road Authority

2.0 References

City of Ottawa –By-law No. 2003-445: Road Activity

Electrical Safety Authority/Technical Standards and Safety Authority - Guideline for Excavation in the Vicinity of Utility Lines

Hydro Ottawa - ECS0012: Conditions of Service

Hydro Ottawa - OLS0002: Clearances to Adjacent Buildings 2.4/4.16kV to 44kV

Hydro Ottawa – OLS0003: Clearances to Adjacent Utility Poles for 2.4/4.16kV to 44kV

Hydro Ottawa – POL-ENV-001: Environmental Policy

Hydro Ottawa - PRO-MS-008: Contractor Management Program

Hydro Ottawa - WI-MS-002: Contractor OHSE Requirements

Infrastructure Health and Safety Association (IHSA) - Electrical Utilities Safety Rules (EUSR), (<http://www.ihsa.ca>)

Ontario College of Trades and Apprenticeship Act

Ontario Energy Board: Distribution System Code

Ontario Government: Occupational Health and Safety Act

Ontario - Regulation 22/04: Electrical Distribution Safety Regulation

Ontario – Regulation 213/9: Construction Projects

3.0 Scope

This procedure will cover the qualifications and minimum experience requirements for a Hydro Ottawa Limited approved or qualified overhead contractor. It will also identify which contractor can perform specific types of work as it relates to Hydro Ottawa Limited, 3rd Party utility, or the public being the constructor.

These qualifications are only one component of several in obtaining an annual “Hydro Ottawa Approved Contractor” status with Hydro Ottawa Limited for a specific type of work. There are several components within the “Hydro Ottawa Limited Approved Contractor” certification, which vary depending on the type of work.

These components are:

1. Liability;
2. Craftsmanship;
3. Safety and Environmental, and;
4. Security Clearance.

For the installation and maintenance of overhead structures in Hydro Ottawa's Limited electrical overhead distribution system, both the liability and craftsmanship components are required. The craftsmanship component for HOL of a "Hydro Ottawa Limited Approved Contractor" shall be comprised of the certification Around underground and overhead electrical systems, experience (through references) working in the relevant electrical environment, required tools & equipment.

This document outlines the requirements a contractor needs to understand when working on or around Hydro Ottawa Limited overhead system or when applying to become a Hydro Ottawa Limited Approved or Qualified Contractor to install and maintain overhead structures in Hydro Ottawa's Limited electrical overhead distribution system.

Only Hydro Ottawa Limited Approved Contractors can work in the energized overhead system. Specifically, Section 6 covers the minimum trade certification and experience required for such work.

This working procedure excludes mutual aid work where another distribution utility is assisting HOL and HOL has provided competent staff to oversee the work of the mutual aid utility(s).

4.0 Definitions, Abbreviations, and Acronyms

"3rd Party Plant" means other utilities authorized in the Right-Of-Way (i.e Bell, Rogers, Natural Gas, street lighting, traffic, city parks, etc.).

"Alternate Bid" has the meaning ascribed in its Conditions of Service (ECS0012) Section 2.1.

"Around" means to locate existing Hydro Ottawa cables/conductors and structures by non-mechanical methods (i.e. hand digging or equivalent) within 1.5 metres horizontally underground or within 3 metres radially overhead and where no handling or undermining of cables, poles, anchors, or other electrical structures will be involved or permitted.

"Demonstrated" means that Hydro Ottawa has evaluated the contractor on their performance to carry out specific tasks or to construct electrical systems, structures, or equipment which may be in the vicinity of high voltage cables/conductors. Each task is to be evaluated and documented by Hydro Ottawa as proof of competency for that task.

"Greenfield" means an un-developed or un-serviced area where utility infrastructure is required to be installed (i.e. roads, sewer, water, and utilities).

"Hold Off" means an electrical device having its operation restricted to previously agreed limits by the placement of a hold off tag. Hold Offs shall only be held by a certified representative of the contractor. Hold Off is a specific process within the electrical utility Work Protection Code.

“**HOL**” means Hydro Ottawa Limited

“**Hydro Ottawa Limited (HOL) Approved Contractor**” has the meaning ascribed in its Conditions of Service (ECS0012).

“**Hydro Ottawa Limited (HOL) Qualified Contractor**” has the meaning ascribed in its Conditions of Service (ECS0012).

“**Infill**” has the meaning ascribed in its Conditions of Service (ECS0012).

“**Integral**” has the meaning ascribed in its Conditions of Service (ECS0012). Operation, maintenance, repairs, or minor replacement shall be undertaken on Integral equipment by Hydro Ottawa. ESA permits are taken for both planned and emergency work; Referenced from Hydro Ottawa Conditions of Service Section 4 for Definitions.

“**Light Civil Works**” has the meaning ascribed in GQS0002.

"**On**" means to physically break into/or handle existing cable/conductor or associated support structure.

“**Primary**” means cables/conductors with a voltage between 750 volts and 50,000 volts.

“**Private Property**” means properties off the public road allowance or other Hydro Ottawa limited Right of Ways (e.g. Easement).

“**Public Contractor**” refers to a contractor or person who has not been evaluated for quality, craftsmanship, health, safety, environmental or financial stability by Hydro Ottawa. Where the Public contractor is working within the public road allowance, the contractor shall be bonded with the road authority or be working directly for a utility that has rights to the within the public road allowance.

“**Secondary**” means cables and conductors with a voltage less than 750 volts.

“**Structures**” mean poles, anchors, manholes, switching manholes, 1 & 3 phase transformer pads, concrete duct bank, and direct buried ducts;

“**Supervision**” means when Hydro Ottawa or its agent reviews the work only with respect to the quality Around/On Hydro Ottawa existing plant.

"**Undermining**" means to remove the sub-base or undisturbed soil from beneath the pole, anchoring, underground cable, or electrical structure for placement of utilities or other structures.

“**Utility Coordination Agreement**” means an agreement between HOL and the road authority for the road authority to install new de-energized specific HOL structures to assist with a specific road project.

5.0 Contractor Requirements

The requirements below apply to both an HOL Approved Contractor, who is hired directly by HOL, and a HOL Qualified Contractor, who is hired by a 3rd party. The HOL Approved Contractor can work On or Around HOL overhead plant were as the HOL Qualified Contractor can only work around HOL overhead plant.

Please note that only HOL Approved Contractor can work On HOL or Integral conductors and are hired directly by HOL unless otherwise authorized in writing by HOL.

Once approved, the contractor cannot transfer its HOL approval to an affiliate, subsidiary, subcontractor, or hiring company. Third party contractors hired as a subcontractor to an HOL Approved Contractor must first go through HOL's Approved Contractor process – refer to Appendix A.

These qualifications are established by HOL and may change from time to time. It is the contractor's responsibility to remain current with the latest version of this specification.

Although this procedure is directed towards the contractor's craftsmanship there are several HOL requirements that the contractor must provide to become and maintain the HOL Approved Contractor or HOL Qualified Contractor status, which are:

5.1 Health and Safety

For HOL's Contractor Safety Management Program refer to PRO-MS-008: Contractor Management Program and WI-MS-002: Contractor OHSE Requirements.

In addition, the HOL Approved Contractor shall provide HOL access to all tools (including personal protective equipment), vehicles (including MTO truck signage), tools/equipment, sponsor's vehicle signage, etc. for inspection and approval of their use.

5.2 Environment

HOL's Approved contractor has an environmental responsibility to protect the environment as per HOL environment policy POL-ENV-001.

5.3 Financial

HOL's Approved Contractor must be in good financial standing and pass a credit check.

5.4 Craftsmanship

As well as the requirements set out in this procedure, HOL will review all references and staff qualifications as it pertains to an HOL Approved Contractor or HOL Qualified Contractor craftsmanship.

5.5 Discipline

Once a HOL Approved Contractor or HOL Qualified Contractor has been approved or qualified by HOL for a specific year and type of work, the contractor can be placed on probation or removed from the approval or qualified status for specific misconduct – see HOL’s contractor discipline process for more information.

5.6 Duty to Report

The HOL Approved Contractor or HOL Qualified Contractor has ongoing responsibilities to report to Hydro Ottawa various contractor status requirements and field safety and access issues as noted in the Request for Proposal documents.

5.7 Security Clearance

Due to specific access locations to sensitive Hydro Ottawa and customer facilities maybe required for the overhead work, the contractor shall obtain federal security clearance to Level II when requested.

5.8 Construction Verification Program (CVP)

Where the contractor is required to inspect the overhead installation under Hydro Ottawa’s CVP program (in compliance with O. Reg. 22/04), the contractor shall demonstrate competence with its skill and ability to complete all requirements under the CVP program.

6.0 Craftsmanship Experience

There are different craftsmanship experience requirements depending on the work being performed. This section summarizes the competencies the contractor must demonstrate when working On or Around HOL overhead systems for the installation of overhead structures for HOL Approved or Qualified Contractors.

6.1 For the installation of Overhead Systems – Qualified Contractor

Type of work performed:

- installation of electrical overhead systems in de-energized Greenfield areas
- installation of light civil work to facilitate the installation of electrical overhead systems in de-energized Greenfield area, which includes
 - excavate for pole holes and anchors
 - install anchors/anchor holes
 - install ground grid around poles
- complete re-instatement of hard and soft surfaces

The Contractor's shall have the minimum experience and shall maintain the qualifications shall be as follows:

- Overhead High Voltage Contractor specializing work identified above having
 - (a) An ESA licensed high voltage pole line contractor on the ESA Authorized Contractor Program; or
 - (b) Qualified to encroach within the minimum electrical distances prescribed for work performed on or around electrical high voltage systems, in accordance with sections 181 and 183 of O.Reg. 213/91(Construction Projects) and:
 - (i) an electrician certified under the Ontario College of Trades and Apprenticeship Act, 2009, S.O. 2009, c. 22, as amended from time to time, and licensed to perform work on or around electrical transmission or outdoor distribution systems rated at more than 750 volts, or
 - (ii) a person with equivalent qualifications by training and experience (such as a Construction/Power Lineworker or Powerline Technician)
- at one crew member having at least 10 years' experience of work experience in this environment within the last 5 years in and around de-energized distribution system
- The maximum apprenticeship (with an apprentice having a minimum of successful completion of first year) to competent high voltage electrical worker ratio is 1:1
- certified in IHSA work protection code

6.2 For the installation of Overhead Systems - Approved Contractor

Type of work performed:

- Installation/modifications/removal of electrical overhead systems in de-energized and energized areas
- installation of light civil work to facilitate the installation of electrical overhead systems in de-energized and energized areas, which includes
 - excavate for pole holes and anchors
 - install anchors/anchor holes
 - install ground grid around poles
- complete re-instatement of hard and soft surfaces

The Contractor's shall have the minimum experience and shall maintain the qualifications shall be as follows:

- Overhead High Voltage Contractor specializing work identified above having
 - (a) An ESA licensed high voltage pole line contractor on the ESA Authorized Contractor Program; or
 - (b) Qualified to encroach within the minimum electrical distances prescribed for work performed on or around electrical high voltage systems, in accordance with sections 181 and 183 of O.Reg. 213/91(Construction Projects) and:
 - (i) an electrician certified under the Ontario College of Trades and Apprenticeship Act, 2009, S.O. 2009, c. 22, as amended from time to time, and licensed to perform work on or around electrical transmission or outdoor distribution systems rated at more than 750 volts, or
 - (ii) a person with equivalent qualifications by training and experience (such as a Construction/Power Lineworker or Powerline Technician)

- at one crew member having at least 10 years' experience of work experience in this environment within the last 5 years in and around de-energized distribution system
- The maximum apprenticeship (with an apprentice having a minimum of successful completion of first year) to competent high voltage electrical worker ratio is 1:1
- certified in IHSA work protection code
- demonstrated ability to access and use vehicles and equipment to complete the work in a safe, efficient, and environmentally friendly manner
- demonstrated exceptional customer service and the ability to deal with difficult people
- demonstrated ability to work in high volume traffic while ensuring public mobility and safety

The Contractor may require up to full time Hydro Ottawa site presence for technical reference, system security, and quality assurance inspection.

The Contractor's on-site tradespersons shall have direct responsibility for the quality of the work completed by the labourers and apprentices.

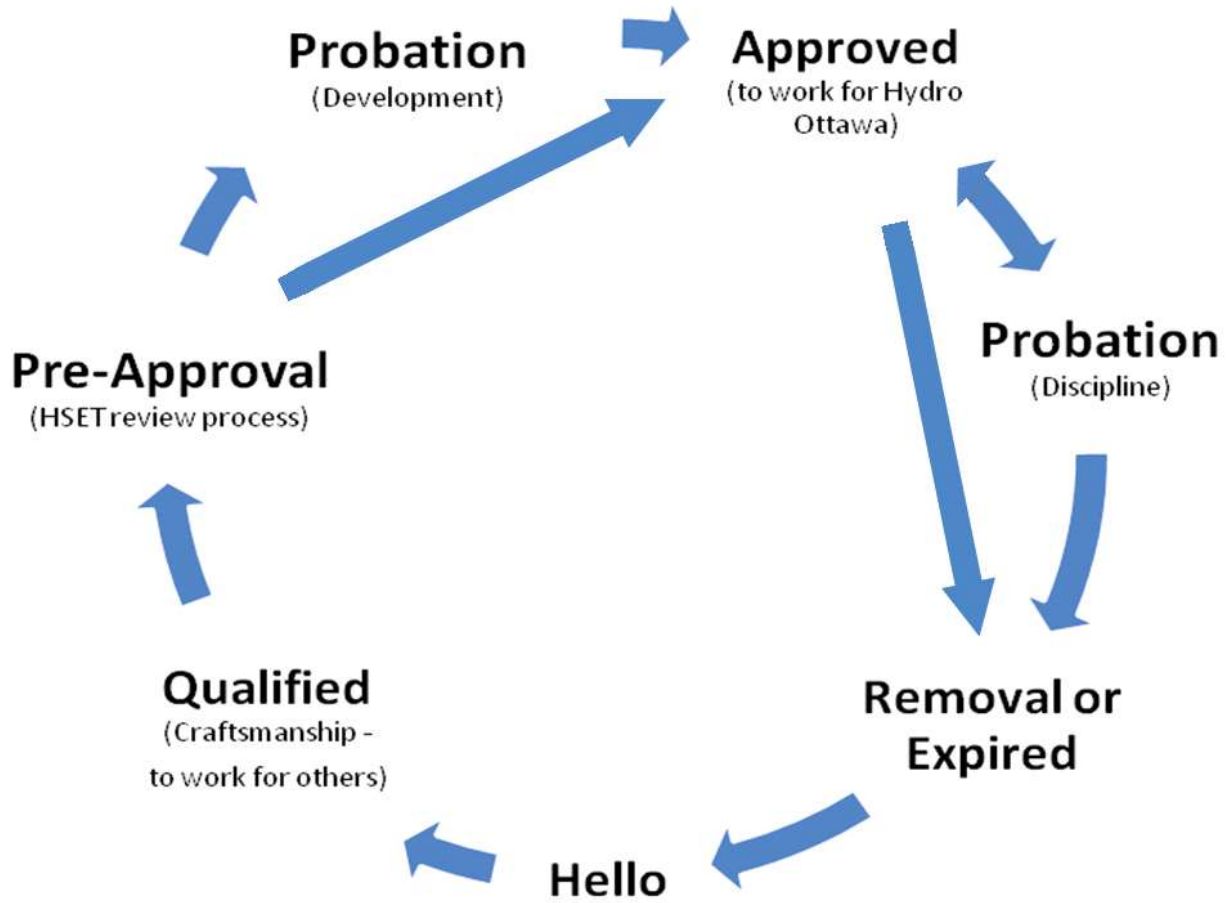
7.0 Information Reporting When Working for Hydro Ottawa

The Contractor craftsmanship approval is dependent on the approval of components such as skilled personnel, equipment, tools, vehicles, and third party authorizations (from groups such as ESA, MOL, MOE, MTO, ISHA, the municipality, ...) to carry out standard work. If any required component is changed, added, removed, or service level lowered during the specific year of approval, the approved contractor shall notify the Hydro Ottawa responsible manager immediately in writing of their lower capabilities.

Contractors have a duty to report as required in GAP0018. In addition to this duty to report requirement, the contractor shall also provide to HOL the following information when accessing Hydro Ottawa's electrical distribution system:

- a. the job plan and associated traffic plan;
- b. work site tailboard;
- c. the communication coordination and emergency contact list;
- d. the May-Day and rescue plan;
- e. Pre-notice to HOL's System Office for work protection (eg. Hold Offs) and confined space entry; and
- f. the current Hydro Ottawa work protection.

Appendix A – Hydro Ottawa Contractor Authorization Lifecycle





Schedule 1 – Contractor Requirements for Working On/Around Hydro Ottawa Overhead Electrical System

Abbreviations for Tables 1-1, 1-2, and 1-3:

- A** = Hydro Ottawa or its Approved Contractor. All work shall be performed by Hydro Ottawa or its Approved Contractor when indicated by an “A” in the following tables. See Conditions of Service, Section 4 (Glossary)
- Q** = Hydro Ottawa Qualified Contractor. All work shall be performed by the Qualified Contractor when indicated by a “Q” in the following tables. See Conditions of Service, Section 4 (Glossary)
- P** = Public Contractor
- Hor** = Horizontally away from Hydro Ottawa existing plant
- Long** = Longitudinal with Hydro Ottawa existing plant
- Rad** = Radial
- ROW** = Hydro Ottawa having legal access in a specific right of way.
- m** = meter

Table 1-1

MINIMUM Requirements for Installing 3rd Party Plant “Around” Hydro Ottawa's Existing Overhead Electrical System		
Utilities which have been granted rights to be in the public road Right of Way can install their overhead plant as per the road authority and utility approved road/trench cross sections and standards ¹ .		
Work Type	Work “Around” Hydro Ottawa's plant	
	With existing energized primary conductors	
	>3m+ swing Rad ³	<3m+swing Rad ^{2,4}
Building work	P	Q
Lifting and Craning	P	Q
Poles and signs	P	Q
Vegetation management ⁶	P	A
Non-electrical utility	P	Q ³
Pole support area excavation	Q ⁵	Q
Decorative attachments	P	n/a
Transportation of oversized loads	P	Q

Notes pertaining to Table 1-1:

1. May require on-site Hydro Ottawa supervision.
2. To work On primary energized conductors requires a HOL Approved Contractor. If all conductors can be de-energized as determined by Hydro Ottawa, a HOL Qualified Contractor may be used with a documented engineered support, protection, and emergency access, restoration plan, and ESA APC approved high voltage contractor. The owner of the 3rd party plant shall enter into a Coordination Agreement with HOL at least 60 days prior to the proposed construction commencement.
3. HOL authorized telecommunication utilities and municipal street lighting/traffic signals can work On or Around to HOL energized overhead system as per HOL’s specifications OLS0002, OLS0003, pole attachment agreement(s), and legislation.
4. Any work within one metre of energized primary lines with be undertaken directly by HOL or its Approved Contractor.
5. The excavator is to submit an engineered support plan for poles and anchors within 3m of the proposed excavation for HOL to review at least 60 days prior to the proposed construction commencement.
6. Vegetation to clear limb fall-arc and clearance above wires.

Table 1-2

MINIMUM Requirements for Installing New De-energized Overhead Electrical Structures ⁷			
Work Type	HOL Owned	Customer Owned Electrical Structures ⁷	
	Structures	HOL Conductors or Integral Customer Conductors	Non Integral Customer Conductors
Alternate Bid Agreement	Q	Q	P
Utility Coordination Agreement	Q	Q	P

Notes pertaining to Table 1-2:

7. To work On primary energized conductors requires a HOL Approved Contractor. If all conductors can be de-energized as determined by Hydro Ottawa, a HOL Qualified Contractor may be used with a documented engineered support, protection, and emergency access, restoration plan, and ESA APC approved high voltage contractor. The owner of the 3rd party plant shall enter into a Coordination Agreement with HOL at least 60 days prior to the proposed construction commencement.

Table 1-3

MINIMUM Work On Hydro Ottawa’s Existing or Integral Customers Owned Existing Overhead Electrical System	
Work Type	
Install, change, rebuild, remove de-energized overhead electrical systems	A
Install, change, rebuild, remove energized overhead electrical systems	A
Work in substations ⁸	A
Work on a JU pole with another LDC	A

Notes pertaining to Table 1-3:

- 8. The HOL Approved Contractor is required to have an Authorized Individual escort in sensitive areas as determined by HOL such as substation.