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BY COURIER

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Ms. Kirsten Walli  
Secretary  
Ontario Energy Board  
Suite 2700, 2300 Yonge Street  
P.O. Box 2319  
Toronto, ON.  
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Dear Ms. Walli:

**Inconsistent Definitions of “Supporting Guarantee” in the Transmission System Code and the Utility Work Protection Code**

We bring to the attention of the Ontario Energy Board (the “Board”) a safety issue regarding the definition of the term, “Supporting Guarantee”, as it appears in appendices 1A (Form of Connection Agreement for Load Customers) and 1B (Form of Connection Agreement for Generator Customers) of the Transmission System Code (the “TSC”).

**Executive Summary**

Hydro One notes that the term “Supporting Guarantee” is used in both the TSC and the Utility Work Protection Code (the “UWPC”) in relation to the isolation of power systems equipment for the purpose of ensuring a safe work area. However, the term is defined differently in the two Codes.

Whereas the TSC definition merely requires the existence of operating instructions to achieve isolation, the UWPC definition actually involves a guarantee of the state or condition of isolation. It is Hydro One’s view that the TSC definition can, and should, be modified to ensure a safer work environment. Based on the analysis in Appendix A of this letter, Hydro One believes that a replacement of the current definition in the TSC with the UWPC definition would result in greater protection for power systems equipment, utility staff and the public.

Hydro One, therefore, respectfully requests that the Board review the definition of “Supporting Guarantee” in the TSC and consider amending that definition. Given the surrounding safety implications, Hydro One further requests that the Board assign a high priority to this matter.

## Background

Hydro One's Ontario Grid Control Centre processes (either as requester or issuer), on average, 800 Supporting Guarantees annually in relation to transmission customers. A request for a Supporting Guarantee from a customer to Hydro One, or vice versa, is generally understood by Operating Authorities in Ontario to refer to a guarantee that a line, bus or circuit will remain in a state or condition of isolation after such device has been isolated.

It has come to the attention of Hydro One that the definition of the term, "Supporting Guarantee", pertaining to the isolation of power systems equipment for the purpose of ensuring a safe work environment, is not consistent between the TSC and the UWPC.

### "Supporting Guarantee" and its definition in the TSC

The term "Supporting Guarantee" is used in the following sections of the TSC pertaining to planned work and the isolation of transmission facilities – specifically, the sections are contained in appendices 1A (Form of Connection Agreement for Load Customers) and 1B (Form of Connection Agreement for Generator Customers) of the TSC, as issued on July 25, 2005:

27.6.2 (a), 27.6.4 (a), 27.7.1, 27.8.1, 27.10.5, 27.10.6

The term "Supporting Guarantee" is defined in appendices 1A and 1B as:

*1.1.20. "Supporting Guarantee" means operating instructions, such as instructions to open or close a switch or to lock devices in the open position, given to protect the safety of staff and the public while work is being performed by a Party*

Under this definition, a "Supporting Guarantee" does not actually guarantee that a device is required to both be isolated and to remain isolated; it only ensures that operating instructions are available and can be utilized to open or close switches or to lock devices in the open position.

### UWPC Definition

"Supporting Guarantee" is defined in the Glossary of Terms of the UWPC as:

*A Supporting Guarantee is a guarantee issued in support of a Work Permit(s) and/or another Supporting Guarantee(s).*

*It certifies that an isolated or isolated and de-energized condition exists at points under the control of the issuer of the Supporting Guarantee.*

*A Supporting Guarantee can be:*

- 1. a PC10C, PC17B, or PC2 Supporting Guarantee or*
- 2. another type issued by a foreign organization.*

This definition clearly ensures that a state of isolation (and de-energization) exists for work to proceed under a Work Permit. Furthermore, it also ensures that the ongoing state of isolation (and de-energization) is under the control of the Issuer of the Supporting Guarantee.

### Occupational Health and Safety Act

Section 181 (1), entitled “Electrical Hazards”, in O.Reg. 213/91 (Occupational Health and Safety Act) states:

*181. (1) Except where otherwise required by this Regulation, electrical work performed on or near electrical transmission or distribution systems shall be performed in accordance with the document entitled “Electrical Utility Safety Rules” published by the Electrical and Utilities Safety Association of Ontario Incorporated and revised January, 2009. O. Reg. 627/05, s. 4; O. Reg. 443/09, s. 5.*

### Electrical Utility Safety Rules

The Electrical and Utilities Safety Association of Ontario’s “Electrical Utility Safety Rules” (Revised January, 2009) in turn references the UWPC in the glossary and in sections 114 (Safe Conditions for Work) and 115 (Work on Isolated Circuits).

#### *114 Safe Conditions for Work*

*No work shall be done on electrical apparatus, mobile or fixed equipment, mechanical equipment or systems which may have electrical, dynamic or potential energy, unless safe conditions for work are provided by one or more of the following methods,*

- a) the apparatus is isolated and de-energized in accordance with the utility work protection code;*
- b) worker protection is provided by an Approved Isolation Procedure as defined in the utility work protection code;*
- c) worker protection is provided by an approved practice (e.g. live line work), and the work is performed by a competent worker;*
- d) the apparatus is physically removed from the immediate vicinity of any source of electrical, dynamic or potential energy, has no ready means of connection, and has had all stored energy discharged.*

#### *115 Work on Isolated Circuits*

- 1. No work shall be performed on an isolated circuit until formal work protection is established and the circuit de-energized in accordance with the utility work protection code.*
- 2. All isolating, de-energizing, tagging and locking of devices must comply with the provisions of the utility work protection code.*

## Recommendation

Hydro One recommends that the Board amend its definition of “Supporting Guarantee” in the TSC as follows:

*“Supporting Guarantee” means the definition found in the Glossary of Terms in the Utility Work Protection Code that has been approved and adopted by the Electrical & Utilities Safety Association of Ontario and Hydro One Inc., as may be amended from time to time.*

In the interim, Hydro One is advising its customers that discussions are underway with the Board on this matter, and that, in compliance with the provisions of the Occupational Health and Safety Act, Hydro One will continue to apply the UWPC definition of “Supporting Guarantee” in its operations. A sample of the text used in Hydro One’s communication to customers is attached as Attachment 1.

Finally, it should be noted that this issue is not exclusive to Hydro One, but affects all transmitters and transmission customers in Ontario.

Sincerely,

Susan Frank

Attach.

## Appendix A

### Analysis of Definitions

If the current TSC definition is applied to section 27.6.2 (a) in appendices 1A and 1B of the TSC, the requirement for guaranteed isolation of a line, bus or circuit to perform work would likely be compromised. Utilizing the UWPC definition results in all parties receiving a guarantee that isolation is in place for work to proceed on a line, bus or circuit. Only the UWPC definition results in the correct action being in place for guaranteed conditions.

*27.6.2. If the Customer requires isolation of its own facilities or of facilities under the Transmitter's control, the Customer's Controlling Authority shall deliver a written notice to that effect to the Transmitter's Controlling Authority. The written notice shall contain the following:*

*(a) a request that the Transmitter's Controlling Authority provide a Supporting Guarantee;*

If the current TSC definition is used in section 27.6.4 (a) in appendices 1A and 1B of the TSC, the transmitter will lock the isolating disconnect in the open position and tag with a “Do Not Operate” tag, which results in a guaranteed state of isolation. If the UWPC definition is used, the transmitter will receive a guarantee of the position and condition of the equipment. Therefore, both definitions would result in the transmitter’s lock being used to lock the isolating switch in the open position.

*27.6.4. The Transmitter may, provided that it has given advance notice to the Customer, lock the isolating disconnect switch in the open position in any of the following circumstances:*

*(a) where necessary to protect the Transmitter's personnel or equipment and the Transmitter has received a Supporting Guarantee from the Customer, in which case the lock shall be under the Transmitter's control for the duration of the Supporting Guarantee;*

If the current TSC definition is applied to section 27.7.1 in appendices 1A and 1B of the TSC, the transmitter may receive either: (i) an operating instruction indicating how the designated equipment could protect the transmission worker; or (ii) a guarantee that the correct items are, and will remain, in the open and/or closed state – depending on how the customer interpreted the definition. Applying UWPC definition, however, ensures that the transmitter would receive a document from the customer guaranteeing the isolated and/or isolated and de-energized condition exists on the equipment identified. In this case, only the UWPC definition definitely results in the correct action.

*27.7.1. If the Transmitter requires isolation of its own facilities from the Customer's facilities or isolation of facilities under the Customer's control, the Transmitter's Controlling Authority shall deliver a written notice to that effect to the Customer's Controlling Authority. The written notice shall contain a request that the Customer's Controlling Authority provide a Supporting Guarantee that identifies the Customer's assigned equipment operating designations.*

In the case of section 27.8.1 in appendices 1A and 1B of the TSC, it is irrelevant which definition of "Supporting Guarantee" is used since no Supporting Guarantee is requested or issued.

*27.8.1. A Party may establish its own Work Protection in place of obtaining a Supporting Guarantee from the other Party.*

If the current TSC definition is used in sections 27.10.5 and 27.10.6 in appendices 1A and 1B of the TSC, the customer does not receive a guarantee of isolation (and de-energization), whereas the UWPC definition does provide such guarantee. Only the UWPC definition results in the correct action in this case.

*27.10.5. Where the Customer plans work on its facilities that:*

- (a) requires a feeder breaker to be opened or operated;*
- (b) requires any disconnection or isolation from any facilities of either Party that are less than 50 kV, such as a feeder breaker;*
- (c) will result in load changes of greater than 5 MW; or*
- (d) will involve a load transfer or a switching operation that directly affects the Transmitter's transmission facilities,*

*the Customer's Controlling Authority shall submit a request to the Transmitter's representative identified in Schedule A, including a request to provide a Supporting Guarantee where applicable. Such request shall be submitted in writing and shall be submitted at least four days in advance of the planned work or within such other period as the Parties may agree.*

*27.10.6 Where the Customer plans work on its facilities that requires that multiple feeder breakers, a station bus or a whole transformer station be operated, the Customer's Controlling Authority shall submit a request to the Transmitter's representative identified in Schedule A, including a request to provide a Supporting Guarantee where applicable. Such request shall be submitted in writing and shall be submitted at least ten days in advance of the planned work or within such other period as the Parties may agree.*

## Attachment 1

### Proposed Communications to Customers

#### **Definition of “Supporting Guarantee”**

It has come to Hydro One’s attention that the definition of “Supporting Guarantee” contained in the Transmission Connection Agreement templates of the Transmission System Code (TSC), issued by the Ontario Energy Board (OEB) on July 25, 2005, is different than the definition that appears in the Utility Work Protection Code (2001).

Hydro One must comply with all the provisions of the Occupational Health and Safety Act. The Occupational Health and Safety Act requires that all work performed on or near electrical transmission or distribution system shall be performed in accordance with the document entitled “Electrical Utility Safety Rules”, published by the Electrical and Utilities Safety Association of Ontario Incorporated and dated August 2004. O.Reg. 627/05, s. 4.

The Electrical Utility Safety Rules require work done on electrical apparatus to be completed in accordance with the Utility Work Protection Code (UWPC).

The UWPC defines “Supporting Guarantee” as:

*A Supporting Guarantee is a guarantee issued in support of a Work Permit(s) and/or another Supporting Guarantee(s). It certifies that an isolated or isolated and de-energized condition exists at points under the control of the Issuer of the Supporting Guarantee.*

*A Supporting Guarantee can be:*

- 1. a PC10C, PC17B, or PC2 Supporting Guarantee; or*
- 2. another type issued by a foreign organization.*

The TSC defines “Supporting Guarantee” as:

*1.1.20. "Supporting Guarantee" means operating instructions, such as instructions to open or close a switch or to lock devices in the open position, given to protect the safety of staff and the public while work is being performed by a Party;*

While the TSC definition ensures the existence of operating instructions to achieve isolation or isolation and de-energization, the UWPC definition ensures the actual condition of isolation or isolation and de-energization.

In all matters concerning Supporting Guarantees, Hydro One will continue to apply the UWPC definition of “Supporting Guarantee”.

Hydro One is in communication with the OEB to discuss the inconsistency between the two definitions, and to address it as necessary to ensure that worker and public safety are not compromised.

If you have any questions or require clarification on this issue, please do not hesitate to contact your Network Management Officer or Account Executive as identified in the Operating Schedule of your Transmission Connection Agreement.