Hydro One Networks Inc.
7th Floor, South Tower
483 Bay Street
Toronto, Ontario M5G 2P5
www.HydroOne.com

Tel: (416) 345-5240
Cell: (416) 903-5240
Oded.Hubert@HydroOne.com

Oded Hubert
Vice President
Regulatory Affairs

BY COURIER

December 7, 2016

Ms. Kirsten Walli
Board Secretary
Ontario Energy Board
Suite 2700, 2300 Yonge Street
Toronto, ON M4P 1E4

Dear Ms. Walli:

EB-2016-0299 – Proposed TSC Amendments – Comments of Hydro One Networks Inc.

Please find attached Hydro One Networks Inc.'s ("Hydro One") comments regarding the Notice of Proposal to Amend the Transmission System Code ("TSC") to delete certain provisions relating to reliaibility requirements.

The Notice also mentions the Board's intention to constitute a working group to address the issue of design requirements in the TSC. Hydro One would be interested in participating in this initiative. Hydro One's proposed representative on the working group is Bing Young. Below is Mr. Young's contact information:

Bing Young
Director, System Planning
Hydro One Networks Inc.
483 Bay Street
Toronto M5G 2P5
Ph: 416-345-5029
Bing.Young@HydroOne.com

Sincerely,

ORIGINAL SIGNED BY ODED HUBERT

Oded Hubert

attach

EB-2016-0299 – Proposed TSC Amendments

Re: Reliability & Design Requirements

Hydro One Submission

December 7, 2016

Introduction

Hydro One Networks Inc. ("Hydro One") appreciates the opportunity to comment on the Ontario Energy Board's ("OEB" or "Board") proposed amendments to the Transmission System Code ("TSC"). Hydro One generally supports the elimination of duplication in regulatory requirements, especially where such duplication may result in confusion or lead to conflicting requirements.

Proposed Amendments to the TSC

On October 19, 2016, the Board issued a Notice of Proposal to Amend the TSC ("Notice") to delete certain provisions from the TSC which the Board believes may be either duplicative of, or no longer consistent with, the reliability standards adopted by the North American Electric Reliability Corporation ("NERC"), the criteria developed by the Northeast Power Coordinating Council Inc. ("NPCC"), or the Market Rules of the Independent Electricity System Operator ("IESO") — collectively, the "Reliability Rules".

Hydro One's Comments

Hydro One has reviewed the specific provisions[1] proposed to be deleted from the TSC, and has determined that many of these provisions are not fully duplicated in the Reliability Rules, and furthermore that the elimination of these provisions would create serious gaps in regulatory oversight over certain classes of transmission facilities.

Applicability of regulatory instruments

Perhaps the most significant impact of eliminating the identified provisions from the TSC would be the loss of those regulatory requirements, which currently apply to certain transmission facilities in Ontario, for which there are no corresponding provisions in the Reliability Rules to which those facilities are subject. For example, a facility covered by one of the reliability requirements proposed to be deleted from the TSC would not be subject to an identical requirement in an NPCC Directory if the facility does not qualify as a Bulk Power System

[1] The sections proposed to be deleted are sections 8.1, 8.2, 9.1, 10.2, 10.3, 10.4.1, 10.4.2, 10.6, and 10.7, as well as Appendix 1, Schedule E.

("BPS") facility. The table below shows the various regulatory instruments that regulate transmission facilities in Ontario and the types of facilities to which each applies.

Regulatory Instrument	**Applicability**
OEB Transmission System Code	All transmission facilities (i.e., above 50 kV)
NERC Reliability Standards	Bulk Electric System (BES) facilities only
NPCC Regional Criteria & Directories	Bulk Power System (BPS) facilities only
IESO Market Rules	IESO-controlled grid

Other Issues and Concerns

Beyond the generic issue of applicability, other issues specific to particular provisions are also raised by the proposed deletions. Appendix A sets out the issues and concerns relating to the provisions to be removed.

It would be Hydro One's view that substantial time and effort will likely be required to properly address all of the issues and concerns identified in Appendix A. Hydro One believes that a working group may be the appropriate forum to address these issues and concerns should the Board see merit in engaging in such an effort to streamline and enhance the regulatory requirements in this area. Hydro One would be pleased to participate in such a working group and to contribute to the Board's effort to better align the TSC with other regulatory requirements.

Conclusion

Hydro One respectfully submits that the proposed amendments, as set out in the Notice, if issued without further study and consultation, would introduce significant gaps in regulatory oversight and raise other issues in respect of reliability requirements for transmission facilities in Ontario.

Design Requirements

Also mentioned in the Notice is the Board's intention to constitute a working group later this year to address the issue of design requirements in the TSC. Hydro One would be interested in participating in this effort and looks forward to working with Board staff and industry stakeholders on this initiative.

Appendix A

Issues with deletion of reliability requirements from the TSC

TSC	Issue / Concern
8.1	**Proposed:** Section 8.1 is proposed for deletion because it is duplicative of the requirements of section 5.1.2 of the TSC, the Market Rules, and section 4 of the OEB's electricity transmitter licence. **Issues/Concerns:** No concerns
8.2	**Proposed**: Section 8.2 is proposed for deletion because it has been replaced with criteria in NPCC Directory 4. **Issues/Concerns:** A facility must be designated as BPS by the IESO for NPCC requirements to apply. As such, the NPCC requirements are not enforceable for many transmission facilities in Ontario, which means the transmitter must rely on the TSC for those facilities. In addition, Directory 4 ("D4") is self-described as "basic protection system design criteria" only. Ontario may want to maintain the flexibility to impose more stringent criteria (i.e., something higher than "basic") in the TSC, as opposed to simply relying on D4. Items (e) and (h) in section 8.2.1 are not in D4. Some items in section 8.2.1 appear as guidelines in D4's appendices, and are not enforceable. These same provisions, which are non-enforceable in D4, are enforceable on all transmission facilities as part of the TSC. Hydro One complies with NERC's FAC-001 requirement to have connection requirements documents. These documents, which include Hydro One's Functional Requirements documents and Transmission Connection Procedures, both reference and are based in part on section 8, as well as the Appendices, of the TSC. As such, these documents would be impacted by the proposed deletions.
9.1	**Proposed**: Section 9.1 is proposed for deletion because it is duplicative of the Market Rules, Chapter 5, section 9. **Issues/Concerns**: Section 9.1.1 requires a transmitter to ensure that tapped transformer stations have on load tap changer facilities and describes the voltage capabilities of those facilities, whereas the Market Rules, Chapter 5, section 9 describes how under load tap changers and off load tap changers should operate—specifically, when the IESO has the authority to direct operations. This is not like-for-like.

TSC	Issue / Concern
	Section 9.1.1 describes emergency capabilities, whereas Market Rules, Chapter 5, section 9 does not. Section 9.1.2 is not duplicated in the Market Rules, Chapter 5, section 9. It describes transformer winding configurations. Winding configuration must be specified by the transmitter and the customer's facilities must be specifically coordinated with the transmitter's facilities.
10.2 10.3 10.4.1 10.4.2	**Proposed:** Sections 10.2, 10.3, 10.4.1 and 10.4.2 are proposed for deletion because they have been replaced with the requirements in PRC-005. **Issues/Concerns:** A facility must be designated as BES by the IESO for NERC requirements to apply. As such, NERC requirements do not apply to, and are not enforceable upon, many facilities in Ontario. The transmitter must therefore rely on the TSC for those facilities. Hydro One supports the removal of protection maintenance intervals from the TSC but believes that other protection maintenance requirements must remain. Sections 10.3.1 and 10.3.3 are not duplicated in PRC-005 Section 10.4 is not included in PRC-005 explicitly, as some of this section also refers to in-servicing of new equipment.
10.6	**Proposed:** Section 10.6 is proposed for deletion because it has been replaced with the criteria in NPCC Directory 4. **Issues/Concerns:** A facility must be designated as BPS by the IESO for NPCC requirements to apply. As such, the NPCC requirements are not enforceable for many transmission facilities in Ontario, which means the transmitter must rely on the TSC for those facilities. In addition, D4 is self-described as "basic protection design criteria" only. Ontario may want to maintain the flexibility to impose more stringent criteria (i.e., something higher than "basic") in the TSC, as opposed to simply relying on D4.
10.7	**Proposed**: Section 10.7 is proposed for deletion because it has been replaced by the combination of the requirements in PRC-004, PRC-005 and criteria in NPCC Directory 4. **Issues/Concerns**: A facility must be designated as BES by the IESO for NERC requirements to apply. As such, NERC requirements do not apply to, and are not enforceable upon, many facilities in Ontario. The transmitter must therefore rely on the TSC for those facilities. The requirements in section 10.7 are not addressed in either PRC-004 or PRC-005. PRC-004 relates to protection system misoperations, and PRC-005 relates to protection system

TSC	Issue / Concern
	maintenance, while section 10.7 relates to battery banks and DC supply requirements (including facilities requirements of transmitters, customers and generators). The TSC addresses single and dual battery & DC systems, while D4 makes no mention of single battery & DC systems.
Appendix 1 Schedule E	**Proposed:** Appendix 1, Schedule E is proposed for deletion because it has been replaced with the criteria in NPCC Directory 4. **Issues/Concerns**: A facility must be designated as BPS by the IESO for NPCC requirements to apply. As such, the NPCC requirements are not enforceable for many transmission facilities in Ontario, which means the transmitter must rely on the TSC for those facilities. In addition, D4 is self-described as "basic protection design criteria" only. Ontario may want to maintain the flexibility to impose more stringent criteria (i.e., something higher than "basic") in the TSC, as opposed to simply relying on D4. Dual protection systems for customer connections may not be enforceable without Appendix E unless they are designated as BPS and BES. Section 1.3.1.1 gives Hydro One the ability to require a generator customer to install two protection systems at the connection point. Section 1.3 could also be moved to Schedule G to consolidate Protection, Control and Telecommunication requirements; OR combine Schedules E, F and G and label "General Technical Requirements". Sections 1.3.1.3 and 1.3.3 are not duplicated in D4. Section 1.4 is not duplicated in D4. This section addresses insulation coordination and is very specific to the customer-transmitter equipment interface. Section 1.5 is not duplicated in D4. This section addresses grounding monitoring and coordination. Section 1.6 is not duplicated in D4. This section addresses the technical relationship between the transmitter and the generator customer, in relation to SCADA, telecom compatibility and power quality. This section also deals with cost responsibility. Section 1.7 is not duplicated in D4. This section describes the transmitter's and the customer's obligations with respect to inspection and commissioning procedures. This section also deals with cost responsibility. Section 1.8 is not duplicated in D4. This section deals with procedures for maintenance and periodic verification. This section also deals with cost responsibility. Exhibit E.1 is not duplicated in D4. Exhibit E.2 is not duplicated in D4. This sections sets out the form of the protection tripping matrix which is critical for protection coordination.