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BY COURIER

January 26, 2018

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.

Hydro One Networks Inc. (“Hydro One”) fully supports the Board’s proposed amendments and believes the clarifications and updates relating to reliability and design requirements contemplated in these amendments will be very helpful to transmitters and customers. Hydro One thanks the Board for the opportunity to participate in the working group that made recommendations on these amendments and would like to further assist the Board by noting some apparent typos and suggesting several further clarifications for the Board’s consideration.¹

1) Section 10.4.1

The term “target operation” should be deleted, as it is an outdated reference to older electromechanical relays where a physical indicator (“target”) is used to signal that the relay is operating as designed. In this context, the term “annunciation” is sufficient to cover all relays, including both the older and newer microprocessor types. It should be clarified furthermore that the transmitter’s obligation to perform checks applies only to the transmitter’s own auxiliary circuitry.

10.4.1 For direct current circuitry checks, a transmitter shall thoroughly check the logic of the **transmitter’s** auxiliary circuitry with the direct current applied and the initiating devices suitably energized to initiate the process. ~~When primary relays are the initiating device, the initiation shall be achieved by secondary injection of appropriate electrical quantities to the measuring elements. In cases where the sequence of operation is critical, monitoring by a portable sequence of events recorder may be required for proper analysis.~~ Operation or tripping of any interrupting or isolating device shall always be verified, as well as local and/or remote annunciation **and target operation**.

¹ In this submission, any additional suggested changes to the text of the Transmission System Code will be shown in bold.

2) Appendix 1A – Schedule G, section 1.3.1

The phrase “on a scheduled basis” should be deleted, as this unnecessarily (and Hydro One suspects unintentionally) limits the customer’s options for conducting performance-based, as opposed to time-based, verifications of the customer’s protection system. Performance-based verification is permitted under NERC² standard PRC-005-6. As well, the Board may want to consider adding the word “protection” in the last sentence for consistency with the corresponding section in Appendix 1B.

1.3.1. Customers shall perform routine verifications of protection systems ~~on a scheduled basis~~ in accordance with applicable reliability standards. The Customer shall establish verification intervals for any protection systems not otherwise covered by the requirements of a reliability organization. The reverification period for those protections systems is to be entered in the agreement and initialed by the parties. A Customer shall re-verify after a change is made to an existing protection system. ~~The maximum verification interval is four years for most 115-kV elements, most transformer stations, and certain 230 kV elements and two years for all other high voltage elements. All newly commissioned protection systems shall be verified within six months of the initial in-service date of the system.~~

3) Appendix 1A – Schedule G, section 1.3.6

The word “of” appears to have been inadvertently inserted in place of the word “or” in this section. The corrected wording should be identical to the corresponding section in Appendix 1B.

1.3.6. The Transmitter and the Customer shall consult on the functional test procedures. The tests shall not begin until the procedure is accepted by the Transmitter. If they cannot agree, the supply ~~or of~~ continuity of supply shall depend on the performance of the tests that the Transmitter shall require. ~~Transmitters and Customers shall agree upon the final functional test procedures before the tests begin. If they cannot agree, the supply or continuity of supply shall depend on the performance of the tests that the Transmitter shall require.~~

4) Appendix 1B – Schedule G, section 1.3.1

The phrase “on a scheduled basis” should be deleted for the same reasons as noted above for the corresponding section in Appendix 1A.

1.3.1. Customers shall perform routine verifications of protection systems ~~on a scheduled basis~~ in accordance with applicable reliability standards. The Customer shall establish verification intervals for any protection systems not otherwise covered by the requirements of a reliability organization. The reverification period for those protections systems is to be entered in the agreement and initialed by the parties. The Customer shall re-verify after a change is made to an existing protection system. ~~The maximum verification interval is four years for most 115-~~

² North American Electric Reliability Corporation

~~kV elements, most transformer stations, and certain 230 kV elements and two years for all other high voltage elements. All newly commissioned protection systems shall be verified within six months of the initial in-service date of the system.~~

5) Appendix 1A & 1B – Schedule G, section 1.4.3

Hydro One submits that it is important to clarify that while the obligation to perform checks on the transmitter's facilities rightly resides with the transmitter, the obligation to perform checks on the customer's facilities must necessarily reside with the customer. Also, consistent with section 10.4.1, the phrase "local and/or remote" should be inserted before "annunciation" and the phrase "and target operation" deleted.

1.4.3. For direct current (DC) circuitry checks, a Transmitter shall thoroughly check the logic of the Transmitter's auxiliary circuitry, and the Customer shall thoroughly check the Customer's auxiliary circuitry, ~~shall be thoroughly checked~~ with the DC applied and the initiating devices suitably energized to initiate the process. ~~When primary relays are the initiating device, the initiation shall be achieved by secondary injection of appropriate electrical quantities to the measuring elements. In certain cases where the sequence of operation is critical, monitoring by a portable sequence of events recorder may be required for proper analysis.~~ Operation or ~~tripping~~ of all any interrupting or ~~isolating~~ devices shall always be verified, as well as **local and/or remote** annunciation ~~and target operation~~.

6) Appendix 1B – Exhibit F.2

The outdated reference to the name "OESC" in the title block of the diagram in Exhibit F.2 of Appendix 1B is proposed to be removed. Hydro One submits that, likewise, the reference to "OESC" at the top of the diagram in Exhibit F.2 should also be removed.

Sincerely,

ORIGINAL SIGNED BY FRANK D'ANDREA

Frank D'Andrea