

McCarthy Tétrault LLP  
PO Box 48, Suite 5300  
Toronto-Dominion Bank Tower  
Toronto ON M5K 1E6  
Canada  
Tel: 416-362-1812  
Fax: 416-868-0673

**Gordon M. Nettleton**  
Partner  
Email: gnettleton@mccarthy.ca

**mccarthy  
tétrault**

**December 6, 2016**

**VIA RESS AND COURIER**

Kirsten Walli  
Board Secretary  
Ontario Energy Board  
P.O. Box 2319  
2300 Yonge Street, 27th Floor  
Toronto, Ontario M4P 1E4

Dear Ms. Walli:

**RE: EB-2016-0160 Hydro One Networks Inc. (“Hydro One”) Transmission Rates  
Application – Response to Undertaking J5.01**

Hydro One encloses the corrected response to Undertaking J5.01. The attached provides an explanation of the attached document that was not present in the version previously filed.

Yours truly,

**McCarthy Tétrault LLP**

Per:

  
For: Gordon M. Nettleton

GMN

1 **UNDERTAKING – J5.1**

2  
3 **Undertaking**

4  
5 To review and confirm whether or not the information requested by Mr. Elson is  
6 available; secondly, if it is available, whether it can be produced publicly or must be  
7 redacted for purposes of confidentiality; if it is available and/or can be produced publicly,  
8 to produce it.

9  
10 **Response**

11  
12 See attached sample excerpt from a transformer tender specification for the transformer  
13 loss performance. It should be noted that the estimated lifetime cost of the No Load (i.e.  
14 core) and Load Losses are expressed on a \$/kW basis for the manufacturer. These values  
15 are based on an NPV assessment that considers the transformer lifetime, loading profile  
16 and forecast loading over its life, and the average annual energy costs and the discount  
17 rate. The manufacturers develop their designs in consideration of these \$/kW loss values  
18 in conjunction with other performance, safety, environmental and technical  
19 requirements. As part their bid, manufacturers submits test values of both No Load and  
20 Load Losses. Hydro One evaluates the lifetime cost of the transformer reflecting the cost  
21 of energy losses and other costs as part of its bid selection.

Witness: Bing Young



Hydro One Networks Inc.

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**2.2.6 Loss Evaluation, Temperature Rise Evaluation, Liquidated Damages**

1. The Tenderer shall note that Hydro One will evaluate guaranteed losses (in Canadian dollars) and add this value to the tendered price.
2. The Tenderer shall state the guaranteed no-load loss at the rated voltage and the guaranteed load loss at the base MVA rating.
3. For auto-transformer items, the guarantee load loss shall consider unloaded tertiary winding.
4. All auxiliary losses will be evaluated at the same capitalization as the load loss. Auxiliary loss shall be stated in the proposal.
5. The guarantee no-load loss shall be referenced at the temperature of 20 °C and load loss corrected to a reference temperature of 85 °C.
6. The dollar values per kW assigned to the losses for the purpose of evaluation are as follows:

No- load loss	\$ 13,800	at rated voltage
Load loss	\$ 5,200	at ONAN rating and rated voltage

7. The above dollar values will also be used for liquidated damages, in the event that the final measured losses exceed those stated in the Tender. Tolerances for losses given in Section 14 of CAN3-C88-M90 shall apply.
8. Should the transformer exceed the guaranteed 65 °C temperature rise during tests and require a de-rating of its capacity, the following penalty shall apply:
  - a) If the temperature rise exceeds the guaranteed value by more than 5° C, Hydro One reserves the rights to reject the transformer.
  - b) If the temperature rise exceeds the guaranteed value by less than 5 °C, the penalty shall be 3 % of the transformer purchase price for each degree °C by which the temperature rise is exceeded.