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

November 29, 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 – Interrogatory Response Correction I-2-42

Attached please find enclosed a corrected interrogatory response to Exhibit I-2-42.

Mr. Ng will explain the corrections when he adopts his evidence at the outset of the Planning Panel's appearance.

Yours truly,

McCarthy Tétrault LLP
Per:

For: Gordon M. Nettleton

GMN

Building Owners and Managers Association (BOMA) INTERROGATORY #042

Reference:

Exhibit B1, Tab 2, Schedule 4

Interrogatory:

(a) Page 3, Figure 1: Why do customer needs and preferences drive only eight percent of the $1.169 billion in planned sustaining capex in the test years? Please list the investments that respond to customer needs and preferences, and constitute the eight percent, and discuss in what way they respond.

(b) Page 6: Please provide the reliability risk approach used in specific jurisdictions that have informed HONI's decision to begin to use this concept. Please provide the experience in those other specific jurisdictions, available studies, regulatory decisions supporting the approach, and the like (or links to these documents).

(c) Page 12: Please explain the wide variation in ESL of different types of transformers. Please provide the data, or source, for Ontario, on which these estimates are based. Does it take into account asset condition assessment?

(d) Page 14: Please explain where the data cited in line 6 comes from. Please explain fully, including how Figures 2, 3, and 4 should be interpreted. What is the useful life for each category of asset? How many in each category of asset will be beyond ESL in each of the years between 2017 and 2030.

Response:

a) Investments classified as addressing customer needs and preferences are identified on the basis of a direct customer request to Hydro One either explicitly or potentially during the execution of the planned sustainment capital work program. The objective of all sustaining capital investments is detailed in Exhibit B1, Tab 3, Schedule 2.

The following investments drive the eight percent of the 1.169 billion in planned sustainment capital expenditures:

Investment	**Nature of Customer Need/Preference**
Bridgman TS: PT Installation & Revenue Metering Upgrade	Replacement of potential transformers (PTs) at the request of the customer to enhance fault detection capability.
Espanola TS	Investment to address specific reliability concerns of connected industrial customer.
Frontenac TS	Investment to address reliability of customer supply following major equipment outages.
Nelson TS	Investment driven by customer request to convert secondary voltage to 28 kV from 13.8 kV.
Wanstead TS	Investment driven by customer request to reconnect station to the 230 kV transmission system from the 115 kV system.
Carlaw TS A6-A7 Metalclad Switchgear Project	Investments planned in coordination with the planned replacement of customer owned low voltage metalclad switching facilities.
Duplex TS A5-A6 Metalclad Switchgear Project	
Duplex TS A1-A2 Metalclad Switchgear Project	
Main TS A1-A2 Metalclad Switchgear Project	
Strachan TS A5-A6 Metalclad Switchgear Project	
Strachan TS A7-A8 Metalclad Switchgear Project	
Wiltshire TS A3-A4 Metalclad Switchgear Project	
J5D Line Protection and Telecom Replacement	Investment driven by customer request to upgrade telecommunications and protection facilities for international tie-line.
L4D/L51D Line Protection and Telecom Replacement	
Cecil TS Component Replacement	Investments include coordination of the increase in station capacity at the request of the connected customer.
Dufferin TS Component Replacement	
Main TS Component Replacement	
Strachan TS Component Replacement	
N.R.C TS Station Refurbishment	
Overbrook TS T2/T3 Station Refurbishment	
Gordie Howe International Bridge Work	Transmission line relocation required to facilitate construction of Gordie Howe International Bridge.
Re-establish Property Rights	Re-establishment of property rights with customers and land owners.

b) Refer to Staff 14 (b) (Exhibit I, Tab 1, Schedule 14, Part b).

c) Transformers are widely used in Hydro One transmission systems to transfer electric power from one-voltage level to another. To meet different needs in transmission system, Hydro One operates several different types of large transmission class power transformers:

- Autotransformers (500kV, 345kV, 230 kV),
- Phase shifters (230kV),
- Regulators (230kV),
- Reactors (500kV)
- Step-down transformers (230kV, 115kV).

According to Hydro One's historical records, these different types of transformers have variations in their service life due to multiple factors including, size, design, transformer materials and construction, system application, operating conditions and utilization.

It does not take into asset condition assessment.

d) The data in Line 6 is based on the presently installed asset inventory for transformers, breakers and conductors.

The expected service life of transformers, breakers and conductors are detailed in Exhibit B1, Tab 2, Schedule 6.

The table below shows the cumulative number of assets which will be beyond ESL in each of the years between 2017 and 2030. No replacements, planned or emergency, were accounted for in the table below.

	Transformers (units)	**Breakers (units)**	**Conductor (circuit-km)**
2017	225	527	6,272
2018	239	551	6,858
2019	278	611	6,954
2020	287	695	9,979
2021	300	761	10,463
2022	329	905	10,912
2023	335	963	11,274

	Transformers (units)	Breakers (units)	Conductor (circuit-km)
2024	343	1,091	11,955
2025	352	1,210	12,394
2026	360	1,276	12,615
2027	373	1,460	13,192
2028	389	1,600	14,055
2029	414	1,799	14,371
2030	435	2,034	14,375

1