

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 2, 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 Undertakings J1.4, J3.1, J3.2, J3.4, J4.5**

Hydro One’s responses to Undertakings J1.4, J3.1, J3.2, J3.4 and J4.5 are enclosed.

Yours truly,

McCarthy Tétrault LLP

Per:



For: Gordon M. Nettleton

GMN

UNDERTAKING – J1.4

Undertaking

WITH REFERENCE TO PAGE 8 OF THE BOMA COMPENDIUM, TO PROVIDE THE COMPARABLE NUMBERS FOR THE FIRST HALF OR THE FIRST THREE QUARTERS OF 2016

Response

Reference is made to Exhibit B1, Tab 1, Schedule 3, figures 12 and 13.

The year-to-date (September 2016) numbers have been added to Figures 12 and 13 below.

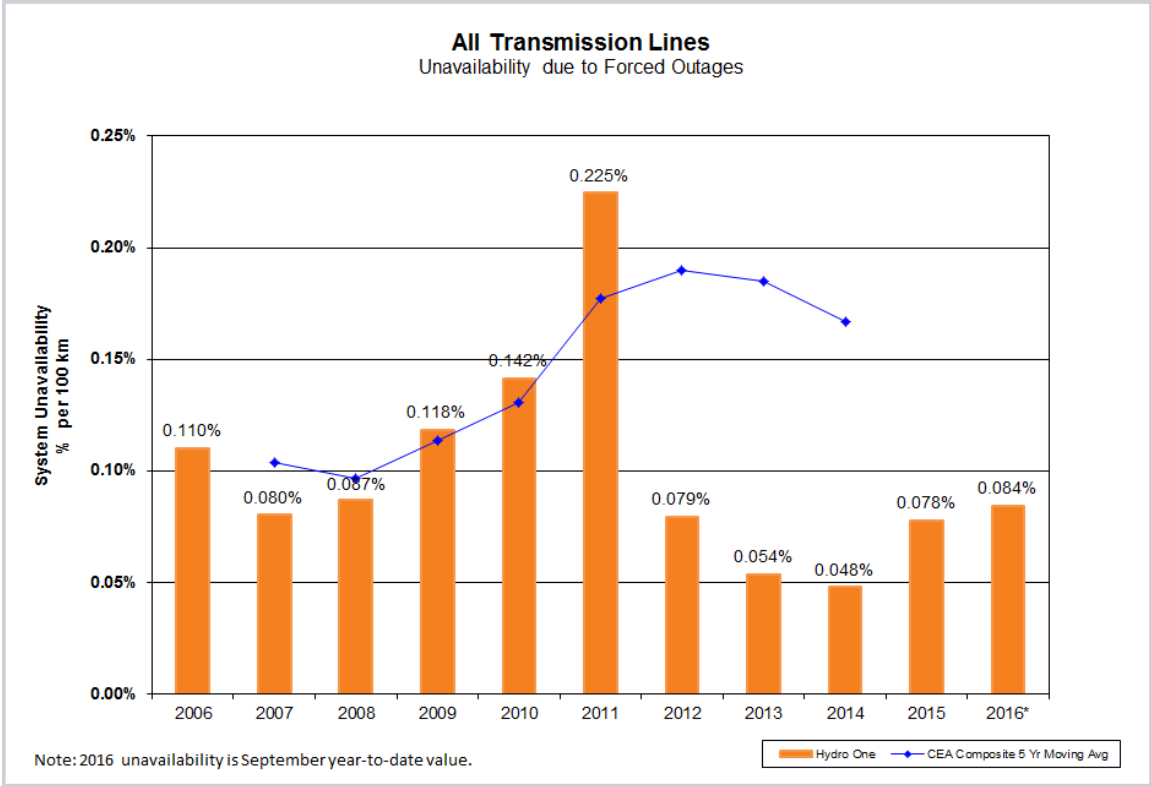
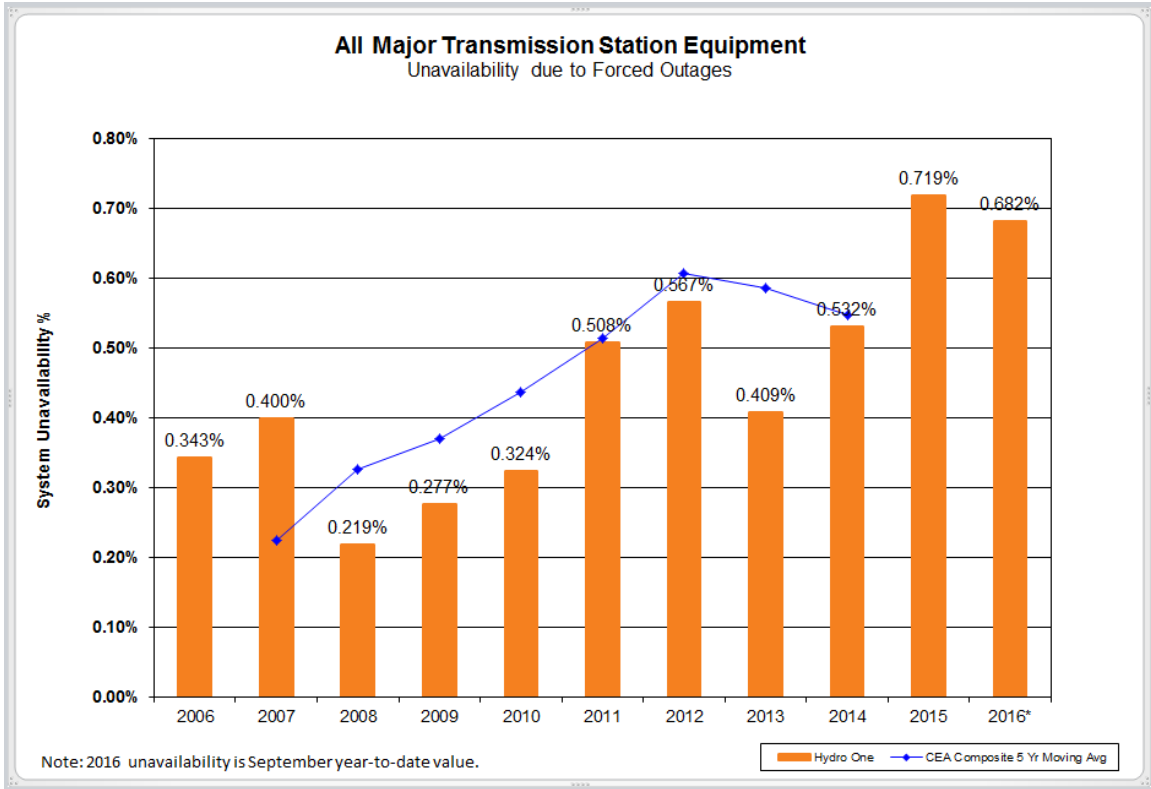


Figure 12: Unavailability of Transmission Lines

Witness: Scott McLachlan



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Figure 13: Unavailability of Major Transmission Station Equipment

UNDERTAKING – J3.1

Undertaking

WITH REFERENCE TO EXHIBIT 3.1, PAGE 20, TO ADVISE WHICH OF THE SCORECARD METRICS WERE RECOMMENDED

Response

The table below includes metrics that appear on the proposed Hydro One Transmission Scorecard and were also included in the suite of metrics from Navigant. Navigant did not give specific recommendations regarding the proposed scorecard.

Performance Categories	Metric On the Proposed Hydro One Transmission Scorecard	Metric on the Suite of Metrics provided by Navigant
Safety	Recordable Incident Rate	Recordable Incidents
System Reliability	T-SAIFI-S	T-SAIFI
	T-SAIDI	T-SAIDI
	System Unavailability	Availability of Critical Assets
Asset Management	CapEx as % of Budget	% of capital budget spent during each year
Cost Control	Total OM&A and Capital per Gross Fixed Asset Value (%)	CapEx plus OpEx per Asset
	Sustainment Capital per Gross Fixed Asset Value (%)	Sustaining CapEx per Asset
	OM&A per Gross Fixed Asset	OpEx per Asset
Connection of Renewable Generation	% on time completion of renewables connection impact assessments	Cycle time to respond to interconnect requests

1 **UNDERTAKING – J3.2**

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3 **Undertaking**

4 TO PROVIDE GRAPHICAL INFORMATION SHOWING DURATION OF OUTAGE,
5 HYDRO ONE VERSUS OTHERS.

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7 **Response**

8 For this information, please refer to Exhibit B2, Tab 2, Schedule 1, Attachment 4, pages
9 37 and 38.

UNDERTAKING – J3.4

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Undertaking

WITH REFERENCE TO IR SCHOOLS 43, PAGE 8, TO PROVIDE A TABLE THAT
INCLUDES HYDRO ONE

Response

Please refer to the table provided below.

Company	Gross Transmission Assets	Customers ¹	Service Territory (sq. km)	KM of Transmission Lines	MWH Transmitted	Ownership ²	Regulatory Regime ³	Susceptible to Storms
Baltimore Gas & Electric	1,179,098,656	1,351,891	3,701	2,090	30,562,078	IOU		Yes
B.C. Hydro	5,111,155,732	1,945,599	42,370	18,508	54,637,557	Provincial		Yes
CenterPoint Energy	2,059,764,178	2,299,248	8,045	5,984	101,741,203	IOU	Open	Yes
Commonwealth Edison	3,389,679,995	3,842,198	18,388	8,656	89,977,031	IOU	Open	Yes
CPS Energy	877,775,489	771,603	2,438	2,407	26,334,008	Municipal	Open	
East Kentucky Power Coop.	569,099,123	N/A	N/A	4,728	22,790,243	Cooperative		
Kansas City Power & Light	1,297,124,005	903,776	28,838	4,273	24,731,534	IOU		Yes
Hydro One	13,244,428,941	1,293,015	681,455	27,324	139,803,825	Provincial	Open	Yes
Manitoba Hydro	1,055,000,000	555,760	650,000	12,800	30,000,000	Provincial		
Oncor Electric Delivery	7,005,354,033	3,310,530	86,032	25,776	114,905,829	IOU	Open	Yes
Peco Energy	1,439,589,112	1,234,338	3,379	1,757	37,501,023	IOU	Open	Yes
PPL Electric Utilities	2,408,545,384	1,400,118	26,000	8,771	40,599,247	IOU	Open	Yes
PSE&G	5,845,024,497	2,259,205	2,011	2,317	40,746,702	IOU		Yes
Southern California Edison	11,071,660,300	4,967,691	80,450	26,206	88,986,000	IOU	Open	
Tucson Electric Power	936,496,126	414,748	1,617	3,114	18,278,352	IOU		
Westar Energy	2,053,092,375	695,972	16,251	9,952	30,436,785	IOU		Yes

¹ Customers -- This is the Distribution customers of the utility. Does not include distribution customers of other utilities to whom transmission service is provided.

² Ownership -- Denotes ownership structure -- IOU/Municipal/Provincial

³ Regulatory Regime -- Describes whether or not the jurisdiction has Open Access or not

UNDERTAKING – J4.5

Undertaking

To provide a breakdown as to the types of outages (reference: page 9 of exhibit B1-2-2-2, first full bullet point)

Response

This response is in regards to the statement on slide 9 of B1-2-2-2 reproduced below.

“Evidence suggests that underlying reliability risk is increasing:

- Equipment outages caused by failure or necessary repairs/replacements increased ~300% from 2011-2015.”

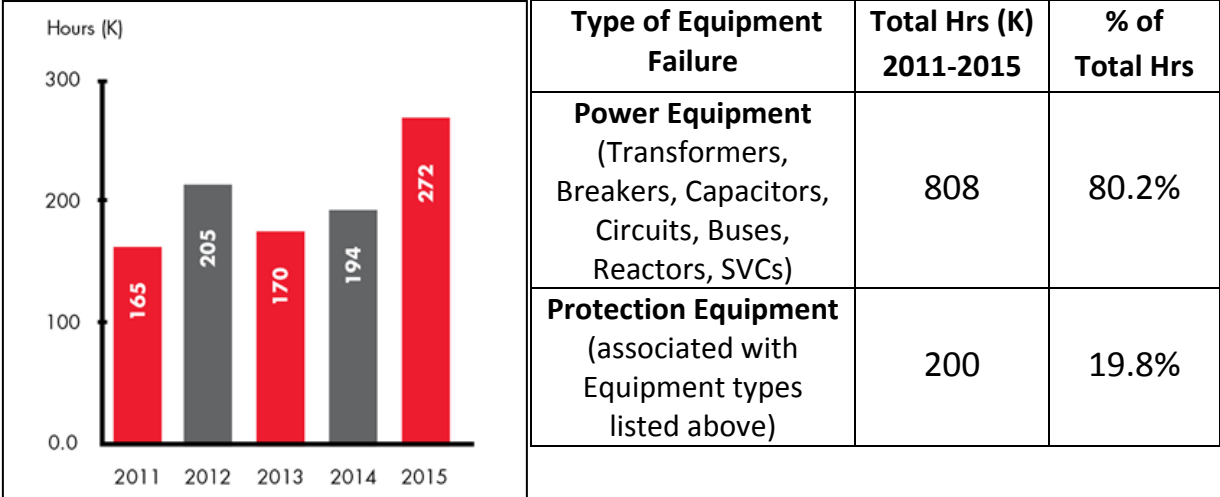
Slide 9 is a summary slide, with the associated details provided in the subsequent slides 10 to 16.

This particular bullet point is a summary statement referring to the increase in combined total hours over the 2011-2015 period. It is expanded upon in slide 15, particularly, in the following charts:

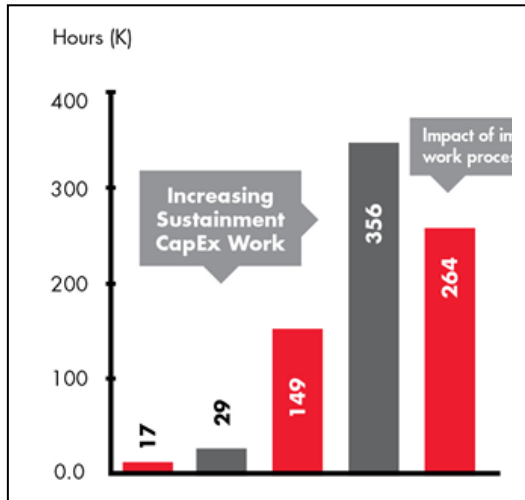
1. Unplanned Outage Hours Due to Equipment Failure; and
2. Planned Outage Hours For Equipment Repair/Replacement.

Below, two more detailed charts provide a breakdown of the types of outages for the ~300% increase.

1. Unplanned Outage Hours Due to Equipment Failure



1 2. Planned Outage Hours For Equipment Repair/Replacement



Type of Planned Outage	Total Hrs (K) 2011-2015	% of Total Hrs
Replacements (Transformers, Breakers, Capacitors, Circuits, Buses, Reactors, SVCs)	637	78.1%
Repairs (associated with Equipment classes listed above)	179	21.9%

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These two charts combine to show an ~300% increase compared to the 2011 year, as shown from the total hours from each chart, listed below, along with the combined totals.

Hours are in 1000's (K)	2011	2012	2013	2014	2015
1. Unplanned Hours (Left Chart)	166,347	205,485	170,470	193,969	271,825
2. Planned Hours (Right Chart)	17,265	28,708	148,567	356,275	264,307
Total Planned + Unplanned Hours	183,612	234,193	319,037	550,244	536,132
% Increase (Compared to 2011)	100%	128%	174%	300%	292%

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