

ONTARIO ENERGY BOARD

IN THE MATTER OF the *Ontario Energy Board Act, 1998*, S.O. 1998, c.15 (Sched. B), and in particular, s.92 and s.97 thereof;

AND IN THE MATTER OF an Application by Hydro One Networks Inc. for an Order granting leave to construct five circuit kilometres of 230 kV underground transmission cables in downtown Toronto.

**INTERROGATORIES OF
THE BUILDING OWNERS AND MANAGERS ASSOCIATION ("BOMA")**

January 6, 2021

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1-BOMA-1

Ref: Exhibit F/Tab 1/Schedule 1/Attachment 2/Page 3 and 4 (Appendix A)

Preamble:

Hydro One Networks Inc. (the "connection applicant" and "transmitter") is proposing to replace the 115 kV underground cables from Terauley Transformer Station (TS) to Esplanade TS on circuits C5E and C7E (the "project"). The electrical parameters of the new cables are included in Appendix A of this report.

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Appendix A: Data Verification

Table 1 Disconnect switch specifications

| Parameter | Existing C5E | Existing C7E | Proposed C5E | Proposed C7E |
|---|-----------------------------|-----------------------------|-----------------------------|-----------------------------|
| Sections | Terauley TS to Esplanade TS | Terauley TS to Esplanade TS | Terauley TS to Esplanade TS | Terauley TS to Esplanade TS |
| Length (km) | 3.57 | 3.57 | 2.5 ¹ | 2.5 ¹ |
| Positive sequence R (pu) | 0.001891 | 0.001722 | 0.000364 | 0.000367 |
| Positive sequence X (pu) | 0.004875 | 0.004526 | 0.004289 | 0.004289 |
| Positive sequence B (pu) | 0.077123 | 0.081672 | 0.028442 | 0.028442 |
| Zero sequence R (pu) | 0.014093 | 0.013768 | 0.003087 | 0.003106 |
| Zero sequence X (pu) | 0.001459 | 0.001387 | 0.002571 | 0.002592 |
| Zero sequence B (pu) | 0.077123 | 0.081672 | 0.028442 | 0.028442 |
| Winter continuous rating (A) | 750 | 750 | 1200 | 1200 |
| Winter 15 min STE rating (A) | 2240 | 2240 | 6733 | 6733 |
| Winter pre-loading used for STE calculation (A) | 600 | 600 | 500 | 500 |
| Winter LTE rating (A) | N/A ² | N/A ² | 2174 | 2174 |
| Summer continuous rating (A) | 700 | 700 | 1200 | 1200 |
| Summer 15 min STE rating (A) | 2390 | 2390 | 6733 | 6733 |
| Summer pre-loading used for STE calculation (A) | 500 | 500 | 500 | 500 |
| Summer LTE rating (A) | N/A ² | N/A ² | 2174 | 2174 |

¹ The cable lengths have changed due to a change in routes

² At the time of this assessment the connection applicant did not provide the long term emergency (LTE) ratings of the existing cables, however, the connection applicant confirmed that the LTE ratings of the new cables are higher than the existing ones.

Questions:

- (a) The IESO SIA does not refer to the replacement cables being 230 kV cables. Can cable voltage have an impact on SIA?

- (b) Was the IESO informed that the project is proposed to involve the replacement of 115 kV low-pressure oil-filled underground transmission cables with 230 kV rated oil-free XLPE cables?

1-BOMA-2

Ref: Exhibit B/Tab 1/Schedule 1/Page 2 of 5

Preamble:

The IESO has also provided an expedited and final System Impact Assessment 26 (“SIA”).

Questions:

- (a) Did HONI seek an "expedited" SIA? If so, what was the reason for seeking an "expedited" SIA?
- (b) What is the difference between an "expedited" and a non-expedited SIA?

1-BOMA-3

Ref: Exhibit G/Tab 1/Schedule 1/Attachment 1 (Final November 24, 2020)/Page 4

Preamble:

There is an insignificant increase in the fault level primarily at the Esplanade TS 115kV buses as a result of the HV cable replacement. The short circuit levels at all area HV and LV buses are given in Appendix B Tables 1 for the before and after scenarios.

All local customers are advised to review the short circuit results to ensure that their equipment ratings are adequate for the increased fault current level.

Questions:

- (a) The CIA does not refer to the replacement cables being 230 kV cables. Can cable voltage have an impact on CIA?
- (b) Would the use of 230 kV replacement cables have an impact on fault levels?

1-BOMA-4

Ref: Exhibit B/Tab 5/Schedule 1/Page 2 of 3/Footnote 1

Preamble:

[https://www.hydroone.com/abouthydroone/CorporateInformation/majorprojects/power-downtown-toronto/Documents/Final_ESR/PDT%20-%20Class%20EA%20Final%20Environmental %20Study%20Report.pdf](https://www.hydroone.com/abouthydroone/CorporateInformation/majorprojects/power-downtown-toronto/Documents/Final_ESR/PDT%20-%20Class%20EA%20Final%20Environmental%20Study%20Report.pdf)

Questions:

- (a) The hyperlink provided in Footnote 1 to the ESR does not work. Please provide a copy of the ESR.

1-BOMA-5

Ref: Exhibit B/Tab 6/Schedule 1/Page 1 of 3

Preamble:

Hydro One is required by provincial legislation to provide locate services for its underground infrastructure. Locate requests are most often requested by utilities planning construction activities in close proximity to Hydro One's underground assets. By installing the replacement cables in a tunnel at a depth of approximately 25m, these assets will be far below typical utility depths, reducing the need to perform field locates. It is estimated that approximately \$12,000 13 per year in locate costs will be saved, compared to similar surface routes.

Questions:

- (a) At what depth are the existing 115 kV cables?

1-BOMA-6

Ref: Exhibit B/Tab 5/Schedule 1/Page 2 of 3

Preamble:

In pursuing this alternative, Hydro One considered multiple installation methods 6 and routes. Through a comprehensive and completed Class Environmental Assessment that evaluated socioeconomic, natural environment, technical and financial factors in detail, Hydro One will be

completing this Project utilizing a tunnel installation method and route, which has the following key advantages:

- Least disruption to vehicular, and pedestrian traffic;*
- Least conflicts with existing and planned infrastructure and utilities;*
- The anticipated noise and vibrations from the tunnel boring machine 13 (TBM) operating at approximately 25 m below ground surface will not be 14 perceptible at the surface, minimizing disruptions to communities;*
- No anticipated direct effects to institutions, emergency uses, and businesses as a result of the construction method and route alignment;*
- Similar costs to other route and construction methods that would be far more disruptive and,*
- Minimal impacts to the natural environment.*

Questions:

- (a) What would the cost be to replace the 115 kV cables using the existing underground cable route?