

December 18, 2020

Mr. Robert Reinmuller
Director, Transmission Planning
Hydro One Inc.
483 Bay Street, 13th Floor, North Tower
Toronto, Ontario
M5G 2P5

Dear Robert,

**Re: Flow East Towards Toronto (FETT) Interface:
Recommendation to Proceed with Conductor Upgrades on the Trafalgar TS x Richview TS
230 kV Lines**

With the letter dated June 18, 2019, the IESO requested Hydro One to carry out studies to confirm the feasibility of, and provide cost estimates for, various upgrade options for the Richview TS x Trafalgar TS 230 kV transmission lines (attached). Thank you for confirming the feasibility of upgrading the line and providing the high quality cost estimates and the project schedule in the memorandum dated September 9, 2020 (attached).

The IESO is recommending Hydro One to proceed with conductor upgrades of the Richview TS x Trafalgar TS 230 kV transmission lines with 1433 kcmil ACSS conductor (the "Project").

Need

FETT is a transmission interface that delivers electricity from western to eastern part of Ontario and it consists of three paths: (a) four 500 kV circuits into Claireville TS from the west, (b) four 230 kV circuits between Trafalgar TS and Richview TS, and (c) two 230 kV circuits between Orangeville TS and Essa TS. Typically, the power transfers on this interface are in the west to east direction and are limited by summer ampacity ratings of the transmission circuits.

Supply capacity in eastern Ontario is expected to decline over the next decade, which contributes to a provincial need for capacity and, because of limits on the transfer capability of the FETT interface, ~4,000 MW of that capacity will have to be sited east of the FETT interface by 2026. To reduce the amount of capacity that must be sited in eastern Ontario, the IESO is recommending this Project, which is expected to be completed by 2026 and will increase the transfer capability of the interface by ~2,000 MW. This Project would reduce the risk to reliability in having to acquire a large amount of capacity in eastern Ontario and would enable more resources to compete to meet provincial needs.

Increasing the FETT Transfer Capability

The FETT transfer capability can vary depending on how the power flows are distributed among the three paths that make up the interface. Under the typical flow distribution, the capacity of the Trafalgar TS x Richview TS path limits the amount of power that can be transferred across the FETT interface. Therefore, increasing the ampacity of the 230 kV circuits (R14/17T and R19/21TH) on the two double circuit lines between Trafalgar TS and Richview TS (please refer to Figure 1) path would increase the FETT transfer capability. IESO has considered a number of potential options to increase the FETT transfer capability and has concluded that the line upgrade is the preferred option as a first stage to increase the FETT transfer capability.

Figure 1: Trafalgar TS x Richview TS 230 kV Transmission Circuits R14/17T and R19/21TH



Upgrading Trafalgar x Richview 230 kV Transmission Line (R14/17T and R19/21TH)

Working with Hydro One, the scope of the line upgrade work has been optimized as follows:

Table 1: Required Ampacity

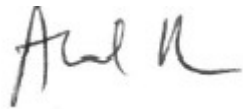
Circuit	From	To	Distance [km]	Required Planning Summer LTE [A]
R14/17T	Richview TS	Tomken JCT	7.9	2000
R14/17T	Tomken JCT	Erindale JCT	5.7	2000
R14/17T	Erindale JCT	Trafalgar TS	8.1	2000
R19/21TH	Richview TS	Tomken JCT	8.0	An upgrade is not required
R19/21TH	Tomken JCT	Hanlan JCT	1.1	2000
R19/21TH	Hanlan JCT	Erindale JCT	5.1	2000
R19/21TH	Erindale JCT	Churchill Meadows JCT	6.4	2000
R19/21TH	Churchill Meadows JCT	Trafalgar TS	1.1	2000

It was concluded that the use of 1433 kcmil ACSS would provide the required planning summer long term emergency (LTE) rating of 2000 A.

Next Steps

The IESO will support Hydro One in obtaining Ontario Energy Board and Environmental Assessment approvals for this project, as required.

Kind regards,



Ahmed Maria,
Director, Transmission Planning,
Independent Electricity System Operator (IESO)

cc: Mr. Bruno Jesus, Hydro One
Mr. Leonard Kula, IESO
Mr. Terry Young, IESO
Mr. Chuck Farmer, IESO
Mr. Christopher Reali, IESO
Mr. Jim Lee, IESO
IESO Records