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BY EMAIL

September 24, 2021

Ms. Christine E. Long
Registrar
Ontario Energy Board
2300 Yonge Street, 27th Floor
Toronto, ON M4P 1E4
registrar@oeb.ca

Dear Ms. Long:

**Re: Hydro One Networks Inc. (Hydro One)
Leave to Construct Application
Richview by Trafalgar Reconductoring Project
OEB Staff Interrogatories
Ontario Energy Board File Number: EB-2021-0136**

In accordance with Procedural Order No. 1, please find attached the OEB staff interrogatories for the above proceeding. This document has been sent to Hydro One and to all other registered parties to this proceeding.

Hydro One is reminded that its responses to interrogatories are due by October 8, 2021. Responses to interrogatories, including supporting documentation, must not include personal information unless filed in accordance with rule 9A of the OEB's Rules of Practice and Procedure.

Yours truly,

Andrew Pietrewicz
Project Advisor, Generation & Transmission

Encl.

Hydro One Networks Inc.
Leave to Construct Application – Richview by Trafalgar
Reconductoring Project
EB-2021-0136
October 1, 2021

OEB Staff-1:

Ref: (1) Exhibit B, Tab 1, Schedule 1, Attachment 3, pages 7 - 8

Preamble:

The reference above discusses conservation, new supply resource and import alternatives to the Richview by Trafalgar Reconductoring Project.

Question(s):

- a) Do the resources to the west of FETT that would be enabled to flow east towards Toronto by the proposed reconductoring project already exist or are already planned for (or some combination of the two)? In other words, would the Richview by Trafalgar Reconductoring Project allow Ontario to make use of existing or already planned resources to the west of FETT and therefore obviate the need to develop new resources in an effectively equivalent amount to the east of FETT (i.e., to address FETT limitations projected by approximately 2026)? If not, please clarify.

- b) If so, would the IESO agree that this represents a cost advantage of the proposed Richview by Trafalgar Reconductoring Project compared to the east-of-FETT alternatives considered by the IESO in the reference above, in addition to the feasibility considerations considered by the IESO? If not, please clarify.

OEB Staff-2

Ref:

- (1) Exhibit B, Tab 3, Schedule 1, Attachment 3, page 6
- (2) Exhibit B, Tab 3, Schedule 1, Attachment 3, page 7
- (3) Exhibit B, Tab 3, Schedule 1, Attachment 3, page 10
- (4) Exhibit B, Tab 3, Schedule 1, Attachment 3, page 8

Preamble:

The first reference shows capacity needs east of FETT to meet transmission security that range between 4,950 MW and 5,600 MW by 2034. These needs will reduce to between 1,800 MW and 2,250 MW in 2026 once the extension to the Lennox GS contract is negotiated.

The first reference also states that supply capacity east of the FETT interface will be needed “in the summer of 2023 when the Lennox GS contract expires in 2022” and identifies “further significant needs starting in 2026 after Pickering GS retires”. The reference also states that “generating stations located east of FETT with expiring contracts around 2030 further adds to this need (Portland GS, Goreway GS, Halton Hills GS and York Energy Centre GS).”

The second reference states that “1850 MW to 2250 MW of supply is required to maintain security east of the FETT interface by 2026”.

The third reference shows that that the proposed Richview by Trafalgar Reconductoring Project would increase FETT capacity by 2,150 MW (all in service).

The fourth reference states “depending on the outcomes of [...] future provincial resource acquisitions, additional incremental increase in FETT transfer capability may be recommended as a second stage.”

Question(s):

- a) Please confirm that capacity needs east of FETT beyond the year 2026 exceed the capacity provided by recontacting Lennox GS and implementing the proposed Richview by Trafalgar Reconductoring Project. If confirmed, please comment on why a larger transmission upgrade was not proposed given that capacity needs are projected to arise even if Lennox GS is recontacted.

- b) If not confirmed, please clarify.
- c) Please comment on any key practical considerations, such as upstream or downstream constraints, that would limit the suitability or feasibility of implementing a larger upgrade to the Richview by Trafalgar circuits than proposed in this application.
- d) Please explain whether the proposed upgrade will provide value even if additional incremental increases in FETT transfer capability are eventually implemented as a second stage. Please clarify whether those potential future increases will reduce the usefulness and cost effectiveness of the currently proposed upgrade.
- e) Please explain whether and how the proposed upgrade will provide value even if expiring generation contracts around 2030 are replaced in the east. Please confirm and clarify whether replacing/recontracting/or otherwise making up for those expiring generation contracts will reduce the usefulness and cost effectiveness of the currently proposed upgrade.

OEB Staff-3:

Ref: (1) Exhibit B, Tab 1, Schedule 1, Attachment 3, pages 10 – 11

Preamble:

The reference compares the Richview by Trafalgar Reconductoring Project to a transmission alternative (called Alternative 2). The estimated cost of Alternative 2 is \$88 Million. The references states that Alternative 2 would displace the need for other transmission, providing a benefit of about \$23M. The reference states that “even with this credit [...] the cost of Alternative 2 is still expected to be higher” than the Richview by Trafalgar Reconductoring Project.

Question(s):

- a) Please clarify whether the estimated \$23 Million credit is already factored into the estimated \$88 Million cost of Alternative 2 (i.e. without the credit, would the cost of Alternative 2 be \$88 Million + \$23 Million credit = \$111 Million, or would the credit reduce the \$88 Million estimate by \$23 Million for an effective cost of \$65 Million?).

- b) Whether or not the \$23 Million credit is already factored into the \$88 Million cost of Alternative 2, would the IESO agree that the cost of Alternative 2 per long term MW of increase is higher compared to the proposed Richview by Trafalgar Reconductoring Project as outlined in Table 3 (both from the perspective of “all in service” or “element out of service” conditions)? If yes, please briefly illustrate. If not, please clarify.

OEB Staff-4:

Ref: (1) Exhibit B, Tab 2, Schedule 1, page 2

The Richview by Trafalgar Reconductoring Project includes the replacement of the existing skywire atop the tower series that carries circuits R14T/R17T with OPGW between Richview TS and Trafalgar TS. The existing skywire was installed in 1985.

Question(s):

- a) Please confirm that there is, or will be, a need to replace the existing skywire, even if not for the Richview by Trafalgar Reconductoring Project. Otherwise, please clarify. If the need is in the future, please indicate when and the cause of the need.
- b) Please clarify whether a certain standard or set of standards guides the need to replace the existing skywire.

OEB Staff-5

Ref: (1) Exhibit E, Tab 1, Schedule 1, Attachment 2
(2) Exhibit E, Tab 1, Schedule 1, Attachment 3

Preamble:

Hydro One states that its proposed form agreements were included in and approved by the OEB in EB-2019-0077 and EB-2018-0117.

Question(s):

- f) Please advise whether there are any substantive differences between the previously approved form agreements referenced above and the form

agreements that Hydro One requests approval of as part of the Richview by Trafalgar Reconductoring Project, and explain any such differences.

OEB Staff-6

Ref: (1) Exhibit E, Tab 1, Schedule 1

Preamble:

The reference above identifies the land right agreements that Hydro One proposes to use to obtain any identified land rights for the Richview by Trafalgar Reconductoring Project.

Question(s):

- a) Please confirm that all impacted landowners will have the option to receive independent legal advice regarding the proposed land agreements.
- b) Please clarify whether Hydro One has committed to or will commit to reimbursing landowners for reasonably incurred legal fees associated with the review and execution of the necessary land rights agreements.

OEB Staff-7

Ref: (1) Exhibit B, Tab 1, Schedule 1

Preamble:

Hydro One has applied for leave to construct approval. Procedural Order No.1 includes the OEB's standard conditions of approval for transmission leave to construct applications. OEB staff proposes that the standard conditions be placed on Hydro One in relation to this application. The standard conditions are reproduced below for convenience:

1. Hydro One shall fulfill any requirements of the SIA and the CIA, and shall obtain all necessary approvals, permits, licences, certificates, agreements and rights required to construct, operate and maintain the project.

2. Unless otherwise ordered by the OEB, authorization for leave to construct shall terminate 12 months from the date of the Decision and Order, unless construction has commenced prior to that date.
3. Hydro One shall advise the OEB of any proposed material change in the project, including but not limited to changes in: the proposed route, construction schedule, necessary environmental assessment approvals, and all other approvals, permits, licences, certificates and rights required to construct the project.
4. Hydro One shall submit to the OEB written confirmation of the completion of the project construction. This written confirmation shall be provided within one month of the completion of construction.
5. Hydro One shall designate one of their employees as project manager who will be the point of contact for these conditions, and shall provide the employee's name and contact information to the OEB and to all affected landowners, and shall clearly post the project manager's contact information in a prominent place at the construction site.

Question(s):

- a) Please comment on the above standard conditions in relation to this application. If Hydro One does not agree with any of the draft conditions of approval, please identify the specific conditions that Hydro One disagrees with and explain why. For conditions in respect of which Hydro One would like to recommend changes, please provide the proposed changes.

OEB Staff-8

- Ref: (1) Exhibit B, Tab 1, Schedule 1, p. 4.
(2) Exhibit B, Tab 3, Schedule 1, p. 2.
(3) Exhibit B, Tab 3, Schedule 1, Attachment 1
(4) Exhibit B, Tab 3, Schedule 1, Attachment 2
(5) Exhibit B, Tab 3, Schedule 1, Attachment 3

Preamble:

At reference (1), Hydro One states that the cost of the transmission line and related facilities for which it is seeking OEB approval is approximately \$60.9 million, of which \$56.3 million is capital and will be added to rate base, and \$4.6 million is removals.

Reference (3) is the IESO letter recommending that Hydro One proceed with the Richview by Trafalgar Reconductoring Project and is dated December 10, 2020.

Reference (4) is Hydro One's September 9, 2020 memorandum cited by the IESO in its recommendation letter. In it, Hydro One states that the estimated cost to complete the project is \$47.7M. At reference (2), Hydro One states that the cost estimate provided in the memorandum "informed the decision and direction that the IESO provided to Hydro One in its [recommendation] Letter."

Reference (5) is the IESO report entitled "Trafalgar TS x Richview TS 230 kV line upgrade: Need and Selection of the Preferred Plan" and is dated July 12, 2021. In its report, the IESO stated "[a]t the time the IESO recommended Hydro One to proceed with Alternative 1 in the IESO letter to Hydro One dated December 18, 2020, the cost estimate for Alternative 1 was \$48M. Subsequently, Hydro One has indicated the cost estimate now stands at \$61M after further reviews."

Question(s):

- a) At reference (5), the IESO describes that the cost estimate for Alternative 1 was \$48 million, but now stands at \$61 million after further reviews. Please describe the further reviews undertaken by Hydro One that resulted in the revised cost estimate. Please also describe the drivers of the additional cost as well as the reasons these drivers were previously unknown.

- b) Please identify the level of confidence associated with the revised \$61 million estimate. E.g., is the estimate subject to the same 30%/-20% confidence as the \$47.7M estimate in the September 9, 2020 memorandum?
- c) Alternative 2 as described at reference (5) has an estimated cost of \$88 million. Please identify the level of confidence associated with the \$88 million estimate. E.g., is the estimate subject to a similar 30%/-20% confidence?
- d) Please described the process used to determine Alternative 2's cost estimate of \$88 million.
- e) At reference (5) the IESO states that Alternative 2 would displace the need for transmission enhancements that increase the supply to Richview South and provide a benefit of about \$23 million. The IESO further stated that even with this benefit and the higher cost of Alternative 1, the cost of Alternative 2 is still expected to be higher than Alternative 1. Please describe how the \$23 benefit was calculated and indicate the level of confidence associated with it.

OEB Staff-9

Ref: (1) Exhibit B, Tab 7, Schedule 1, page 2
(3) Exhibit B, Tab 7, Schedule 1, Table 1, page 1

Preamble:

The first reference above outlines project risks, including Hydro One's estimated top four project risks. The second reference states the total estimated project cost of \$56.2 million, which includes a contingency cost estimate of \$2.7 million. This contingency cost estimate represents approximately 5% of the pre-contingency estimate.

Question(s):

- a) Please explain the methods Hydro One used to assess project risks for the Richview by Trafalgar Reconductoring Project and please clarify how Hydro One's contingency estimate relates to that analysis. Through its response, Hydro One is also requested to articulate why the contingency cost estimate is appropriate.

- b) Please describe how the contingency cost estimate for the Richview by Trafalgar Reconductoring Project compares to contingency cost estimates developed for similar Hydro One projects.
- c) How would Hydro One characterize the confidence of the cost estimate for the Richview by Trafalgar Reconductoring Project? What method did Hydro One use to estimate its confidence?
- d) How did Hydro One develop its estimates and confidence estimates for project material, labour, equipment rental and contractor costs?

OEB Staff-10

Ref: (1) Exhibit B, Tab 7, Schedule 1

Preamble:

Table 1 is an extract from the above reference.

Table 1: Extract from Exhibit B, Tab 7, Schedule 1, page 6

Table 2 - Costs of Comparable Line Projects

Project	RTR Project	WTTE Project	D6V/D7V Project	DxS Project
Scope	Reconductor four 230 kV lines	Reconductor four 115 kV lines	Reconductor two 230 kV lines	Reconductor two 115 kV lines
Length (km)	21.7	10.0	9.4	9.0
Circuit Length (km) ⁴	70.8 ⁵	40.0	18.8	18.0
Project Surroundings	Urban	Urban	Mostly Rural	Mostly Urban
In-Service Date	Apr-2026	Nov-18	Dec-20	Dec-15
Years for escalation	-	7 yrs, 5 months	5 yrs, 4 months	10 yrs, 4 months
Total Project Cost (\$M) ⁶	56.3	21.4	8.6	6.3
Less: By-Pass (\$M)	0.4	-	-	0.2
Less: OPGW Costs (\$M) ⁷	1.2	0.3	0.3	0.8
Total Project Costs Before Escalation (\$M)	54.7	21.1	8.3	5.3
Add: Escalation Adjustment (2%/year)	-	3.3	0.9	1.2
Total Comparable Project Costs (\$M)	54.7	24.5	9.2	6.6
Total Cost/Circuit km (\$M)	0.8	0.6	0.5	0.4

At the above reference, Hydro One stated that the Richview by Trafalgar Reconductoring Project differs from the comparator reconductoring projects shown in

Table 1 for two reasons. One reason provided was that tower reinforcement and some tower replacements are required for the Richview by Trafalgar Reconductoring Project whereas the comparator projects did not require tower reinforcement.

At Exhibit B, Tab 7, Schedule 1, p. 7, Hydro One states that the Richview by Trafalgar Reconductoring and WTTE projects “were also very similar in scope and included structural reinforcement and replacement of existing steel towers.” At Exhibit C, Tab 1, Schedule 1 of Hydro One’s WTTE application (EB-2016-0325), Hydro One describes the tower reinforcement and replacement work required to facilitate the project and for which it was seeking OEB approval.

At Exhibit B, Tab 7, Schedule 1, p. 9, Hydro One states that “no tower or tower replacements were required for the D6V/D7V Project”. At Exhibit C, Tab 1, Schedule 1, p. 1 of Hydro One’s D6V/D7V Project application (EB-2019-0165), Hydro One describes the various tower reinforcement work it planned to undertake to complete the project and for which it was seeking OEB approval.

Question(s):

- a) In light of the above, please explain why Hydro One states that one of the two reasons for the higher cost of the Richview by Trafalgar Reconductoring Project is that the comparator projects did not require tower reinforcement.
- b) Please confirm if the WTTE and D6V/D7V project costs shown in Table 1 are inclusive of tower reinforcement work.
- c) With consideration to Hydro One’s response to questions a) and b) above, please indicate if the only reason for the higher cost of the Richview by Trafalgar Reconductoring Project is that it involves work on four 230 kV circuits carried on two separate, and adjacent sets of towers, compared to the comparator projects where reconductoring was carried out on only a single set of towers. If applicable, please describe why it is appropriate that this single driver results in the Richview by Trafalgar Reconductoring Project costing between 33% and 60% higher than the WTTE and D6V/D7V project comparators, respectively, on a total cost per circuit km basis.
- d) Hydro One states that the higher cost of the Richview by Trafalgar Reconductoring Project is partly attributable to the fact that it involves work on four 230 kV circuits carried on two separate, and adjacent sets of towers,

compared to the comparator projects where reconductoring was carried out on only a single set of towers.

At Exhibit C, Tab 1, Schedule 1 of Hydro One's WTTE application (EB-2016-0325), Hydro One states "K1W/K3W and 8 K11W/K12W are each strung on two 2-circuit 115kV towers from Manby TS to Structure 4. From Structure 4 to Wiltshire TS all circuits are strung on 4-circuit 115kV towers, with the exception at Runnymede TS and St. Clair JCT." This statement indicates that while a portion of the WTTE project was carried out on a single set towers, another portion was carried out on separate and adjacent towers.

In light of the above, please clarify Hydro One's position that one of the two reasons for the higher cost of the Richview by Trafalgar Reconductoring Project is that the comparator projects only required work on a single set of towers.

- e) Table 1 shows that the WTTE project involved the reconductoring of four 115 kV lines whereas the RTR project involves the reconductoring of four 230 kV lines. Please describe what, if any, cost differences between the RTR And WTTE projects are driven by the different conductor voltages.
- f) With consideration to Hydro One's response to question c) and d) above, please provide an estimate of the difference in the Richview by Trafalgar Reconductoring Project's cost that Hydro One would attribute to completing work on four 230 kV circuits carried on two separate, and adjacent sets of towers, compared to the comparator projects where reconductoring was carried out on only a single set of towers. When responding, please describe the assumptions underpinning the estimate and why they are reasonable.