Ontario Energy Board | Commission de l'énergie de l'Ontario

BY EMAIL

October 15, 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
Ansonville TS by Kirkland Lake TS A8K/A9K Refurbishment Project
OEB Staff Interrogatories
Ontario Energy Board File Number: EB-2021-0107

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 29, 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,

Original Signed By

Andrew Pietrewicz
Project Advisor, Generation & Transmission

Encl.

Hydro One Networks Inc.
Leave to Construct Application – Ansonville TS by Kirkland Lake TS A8K/A9K Refurbishment Project
EB-2021-0107
October 15, 2021

OEB Staff-1:

Ref: (1) Exhibit B, Tab 5, Schedule 1, pages 1 - 2

Preamble:

The reference describes two transmission alternatives considered. Hydro One states that the scope of work for Alternative 2 is "limited to refurbishing end of life structures, conductors and other transmission line components." Hydro One states that the higher LTE rating associated with Alternative 1 will be achieved "through the use of taller wood poles." Hydro One also states that Alternative 1 requires work on 180 circuit km and that Alternative 2 requires work on 112 circuit km. The per-circuit km cost of Alternative 1 is $423k, the per circuit km cost of Alternative 2 is $515k.

Question(s):

a) Please confirm whether the only major difference in the scope of work between Alternatives 1 and 2 is the use of taller poles in Alternative 1. If this is not the only major difference, please clarify.

b) Please clarify why Alternative 2 involves work on fewer circuit km than Alternative 1.

c) Please clarify why Alternative 2's cost per circuit km is higher if its scope of work is less than the scope of work of Alternative 1.

OEB Staff-2:

Ref: (1) Exhibit B, Tab 5, Schedule 1, page 1

Preamble:

Hydro One states that Alternative 2 would result in an ampacity of 390 A, which would not meet a Long Term Emergency operating rating of 550 A.

Question(s):

a) Please comment on whether and how Hydro One considered transmission alternatives to Alternative 1 that would meet a Long Term Emergency operating rating of 550 A. If not, why not?

OEB Staff-3:

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

Preamble:

The reference states that "the IESO understands that a rating of 550 Amperes is the highest rated conductor that can be accommodated with the current tower structures at the lowest incremental cost."

Question(s):

a) The IESO's recommendation to Hydro One to upgrade circuits ASK and A9K to 550 Amperes appears to have been informed by its understanding of the upgrade's lowest incremental cost. Did the IESO also consider higher rating options from the perspective of greatest benefit to ratepayers? If not, please comment on whether a more favourable balance of incremental costs and benefits (i.e., a greater net benefit) might be achieved for ratepayers from a solution having a rating higher than 550 Amps, recognizing that it might also involve greater incremental costs.

OEB Staff-4:

Ref: (1) Exhibit B, Tab 6, Schedule 1, Attachment 2, page 8, Table 5
(2) Exhibit B, Tab 6. Schedule 1, Attachment 2, page 6, Table 3

Preamble:

The first reference states that "following the loss of circuit A9K, the companion circuit A8K would experience thermal overload starting in 2024 with the Upgrade Option; however, the resulting capacity gap is reduced when compared to that in the Base Option (refer to Table 5)."

The second reference states that "following the loss of circuit A9K, the companion circuit A8K will experience thermal overload starting in 2023, as soon as the line is in-service; this is represented as a capacity gap shown in Table 3 below."

Question(s):

a) Please clarify whether the capacity gap shown in Table 5 at the above reference represents a scenario with zero output from generation in the area. Otherwise, please clarify.

b) Please clarify whether the capacity gap shown in Table 3 at the above reference represents a scenario with zero output from generation in the area. Otherwise, please clarify.

OEB Staff-5:

Ref: (1) Exhibit B, Tab 6, Schedule 1, Attachment 2, page 9, Table 6

Preamble:

The reference illustrates that under a scenario where circuits A8K/A9K are upgraded to 550 Amperes, the Total Local Generation Support Required (49 MW – 120 MW) will, at times, exceed the Maximum Generation Support Provided by NPKL CGS G1-G5 (82 MW). The reference also states that no Other Generation Support will be required.

Question(s):

a) Please clarify why the reference suggests that no other generation support will be required when it also shows a seeming mismatch between total local

generation support required and maximum support provided by NPKL CGS G1-G5.

b) Please confirm that that Total Local Generation Support Required 2024-2031 is more or less continuous in nature (e.g. relatively high capacity factor rather than peaking)

OEB Staff-6:

Ref: (1) Exhibit B, Tab 6, Schedule 1, Attachment 2, pages 7-8, Tables 3 and 5

Preamble:

Table 3 is titled "Kirkland Lake Reliability Needs with A8K/A9K Upgraded to 390 Amperes". Table 5 is titled "Kirkland Lake Reliability Needs with A8K/A9K Upgraded to 550 Amperes".

Question(s):

a) Please clarify whether the difference between the values in the two tables approximately represents the capacity increase from the proposed upgrade of circuits A8K/A9K to 550 Amperes? (eg. values in Table 5 minus values in Table 3 for the corresponding years). Otherwise, please explain and provide the approximate capacity increase of the proposed upgrade between 2023 and 2031.

b) What is the incremental cost of the Upgrade option (i.e. the proposed project) per unit of incremental capacity upgrade (i.e. relative to the 390 Amperes Base Option)? How does this compare to an indicative generation alternative or range of alternatives?

OEB Staff-7:

Ref: (1) Exhibit B, Tab 6, Schedule 1, Attachment 2

Preamble:

The Upgrade Option (plus local generation support) was found to have a net benefit of approximately $451 Million versus the Base Option (plus local generation support).

Question(s):

a) Please confirm whether the estimated net benefit of $451 Million is a net present value for a period spanning 70 years. Otherwise, please clarify.

OEB Staff-8:

Ref: (1) Exhibit B, Tab 6, Schedule 1, Attachment 2, page 9

Preamble:

The reference states that "the overall benefit of the Upgrade Option (plus local generation support) was found to be approximately $451 Million versus the Base Option (plus local generation support), which requires reliance of G6. This benefit increases to approximately $513 Million should new local CCGT be built to supplement the Area in place of G6 in the Base Option."

Question(s):

a) Please confirm that the major driver of the net benefit is reduced production from natural gas-fired generation because of increased A8K/A9K capacity. Otherwise, please clarify.

b) In the IESO's analysis, approximately how much less gas-fired production does the Upgrade Option (plus local generation support) cause?

c) Are natural gas prices an important variable in the estimated net benefit?

d) What natural gas prices were assumed and how robust is the estimated net benefit result to changes in those natural gas price assumptions?

e) If applicable, what are other major drivers of the estimated net benefit and what are their approximate respective contributions (aggregated as appropriate)?

OEB Staff-9:

Ref: (1) Exhibit B, Tab 6, Schedule 1, Attachment 2, page 9

Preamble:

The IESO's economic assessment assumed that "NPKL CGS units are replaced with local new-build CCGT following contract expiry."

Question(s):

a) Please confirm the approximate contract expiry date of the NPKL CGS units.

b) Please comment on whether the NPKL CGS Units have an end of life date and when that date is.

c) Please comment on approximately how the estimated net benefit would change under base and lower load growth scenarios if the NPKL CGS units were not assumed to be replaced with local new-build CCGT following contract expiry, but instead were assumed to continue to operate under whatever acquisition arrangement and reinvestment/upgrade scenario the IESO thinks might be reasonable.

d) Based on the response to question a) above, to what extent does the economic case for the proposed upgrade hinge on being compared against a new build CCGT following contract expiry of the NPKL CGS units?

OEB Staff-10:

Ref: (1) Exhibit B, Tab 6, Schedule 1, Attachment 1, page 9

Preamble:

The IESO indicates that when carrying out the economic analysis of the two alternatives (Base Option and Upgrade Option), it is assumed that in both options the NPKL CGS units are replaced with local new-build CCGT following contract expiry. The IESO also explains that with respect to the Base Option, the IESO did a sensitivity analysis that assumed one scenario where unit G6 met the additional capacity required, and a

second scenario where it was assumed that new generation was added to provide the additional capacity required, rather than relying on unit G6.

Question(s):

a) Please explain whether in the economic analysis of the Base Option where it is assumed that new generation was added rather than relying on unit G6, the scenario essentially assumed that the replacement of the NPKL CGS units was brought forward and at a larger capacity than required in the Upgrade Option, or whether a second, new generator was assumed. If a second, new generator was assumed, please discuss the cost impacts of instead assuming that the NPKL CGS replacement was advanced and expanded as needed.

OEB Staff-11:

Ref: (1) Exhibit B, Tab 6, Schedule 1, Attachment 2, page 9

Preamble:

The IESO assessed the economic performance of the proposed upgrade against a lower load growth scenario.

Question(s):

a) Please clarify how much lower the load is in the low growth scenario compared to in the base case.

b) Please confirm that the upgrade option has a net benefit even under the lower load growth scenario. If confirmed, please comment on why this is the case. Otherwise, please clarify.

c) Please comment on whether the IESO feels that the overall result of net benefit even under lower load growth (i.e. the fact that there would be a net benefit, not the specific quantum of the net benefit) is robust or whether it is highly sensitive and could be easily reversed by changes to other key assumptions (including natural gas prices).

d) Why is the estimated net benefit of the proposed upgrade higher in the low growth scenario ($472 Million) compared to the base scenario ($451 Million)?

OEB Staff-12:

Ref: (1) Exhibit B, Tab 6, Schedule 1, Attachment 2, page 8
(2) Exhibit C, Tab 1, Schedule 1, page 3
(3) Exhibit B, Tab 3, Schedule 1, Attachment 2, page 2

Preamble:

The IESO states at the first reference that it understands that a conductor with a summer planning rating of 550 Amperes is the highest rated conductor that can be installed using the existing tower structures.

Hydro One states at the second reference that approximately 407 structures will need to be replaced to maintain adequate clearance and design loading and that, additionally, approximately 839 of the existing pole structures are in bad condition and considered end of life which will need to be replaced.

The third reference states that "the IESO understands that a rating of 550 Amperes is the highest rated conductor that can be accommodated with the current tower structures at the lowest incremental cost."

Question(s):

a) Please clarify whether the IESO's economic assessments account for the fact that the proposed Project will involve the replacement of approximately 1,200 structures (i.e. 407 + 839)?

b) What percentage of structures do the 407 + 839 structures represent? How many structures are not being replaced?

c) Please reconcile the fact that approximately 1,200 structures will be replaced as part of the project with the IESO's approach to limiting the size of the recommended option to what the existing tower structures can accommodate.

d) If the IESO knew that the project would involve replacing as many structures as it does, would it have considered larger capacity wires alternatives? If not, please clarify.

OEB Staff-13:

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

Preamble:

Hydro One states that the project will involve $6 Million of OM&A removal costs.

Question(s):

a) Please clarify what the $6 Million of removal costs will pay for and how the figure was estimated.

b) Please comment on how the $6 Million compares to the removal costs in other comparable projects.

OEB Staff-14:

Ref: (1) Exhibit B, Tab 9, Schedule 1, page 1

Preamble:

The reference states that the removal costs are $5.9 million consisting of a $5.5 million charge to the transmission network pool and a $0.4 million charge to the transmission line connection pool.

Question(s):

a) Please clarify if the $5.9 million of removal costs includes any credits for salvageable material including copper wire. If so, please specify the amount. Otherwise, please clarify how the salvage value of existing material is considered in Hydro One's project cost estimate.

OEB Staff-15:

Ref: (1) Exhibit B, Tab 9, Schedule 1, page 1
(2) Exhibit B, Tab 6. Schedule 1, Tables 1 to 8

Preamble:

The first reference states that "There are no incremental operating and maintenance costs as a result of the proposed project."

The second reference present the net present value, revenue requirements and pool rate impacts based on an annual incremental OM&A cost of $0 for 25 years.

Question(s):

a) Please explain how vegetation management has been factored into the project.

b) Will there be any vegetation managements costs incorporated into the initial capital cost of the project or recurring during the asset lifecycle?

c) Please clarify if there are any adjustments to the vegetation management cycle as result of the right-of-way clearing for the capital project? If so, have these been incorporated into the net present value calculations for the project?

OEB Staff-16:

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

Preamble:

The first reference above outlines project risks and states that the scope of the project on which the cost estimate in Hydro One's application is based corresponds to an AACE Class 3 (-20% / +30%).

The first reference states that "until a detailed line inspection and additional studies and surveys are completed, there is a risk of scope changes, including structural and foundation refurbishment resulting in increased cost and a delayed in-service date".

The second reference states the total project cost of $69.686 million, which includes a contingency cost estimate of $6.184 million. This contingency cost estimate represents approximately 10% of the pre-contingency project cost.

Question(s):

a) Please explain the methods Hydro One used to assess project risks for the Ansonville TS by Kirkland Lake TS A8K/A9K Refurbishment Project and please clarify how Hydro One's contingency estimate relates to that analysis and why the contingency estimate is appropriate. Please clarify whether Hydro One's contingency estimate is consistent with its AACE Class 3 project cost estimate.

b) Please describe how the contingency cost estimate for the Ansonville TS by Kirkland Lake TS A8K/A9K Refurbishment Project compares to contingency cost estimates developed for other comparable Hydro One projects.

c) How did Hydro One develop its estimates for project material, labour, equipment rental and contractor costs?

OEB Staff-17:

Ref: (1) Exhibit B, Tab 7, Schedule 1, page 4
(2) Exhibit B, Tab 7, Schedule 1, page 3, Table 2

Preamble:

The first reference states that "the A8K circuit will be refurbished in its entirety and put in service before beginning work on the A9K circuit. This significantly reduces the line cost efficiencies that can be obtained on this parallel work since activities such as mobilization and stringing setup will double compared to a single setup approach required on comparator projects shown on table above."

Question(s):

a) Please comment on why the fact that work on A8K and A9K will be done in series rather than at the same time will impact the cost comparison of the Project to the comparators shown in Table 2 given that the comparison is made on a circuit km basis.

OEB Staff-18:

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

Preamble:

The bottom row of Table 2 inflates comparator project costs at 2% per year for 2023 Nominal Dollars.

Question(s):

a) Please revise the bottom row of Table 2 using actual inflation rather than a 2% approximation.

OEB Staff-19:

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

Preamble:

Table 2 summarizes the costs of comparable line projects.

Question(s):

a) Please clarify whether the comparable line projects involved structure replacements. If so, what proportion of the total cost of those projects did structure replacement represent?

b) Please estimate the proportion that structure replacement represents out of the total cost of the Ansonville by Kirkland Lake project.

OEB Staff-20:

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

Preamble:

Hydro One states that its proposed form agreements are similar to those previously approved by the OEB in previous Hydro One leave to construct application proceedings (such as EB-2019-0077 and EB-2018-0117).

Question(s):

a) 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 Ansonville TS by Kirkland Lake TS A8K/A9K Refurbishment Project and explain any such differences.

OEB Staff-21:

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

Preamble:

Hydro One states that it will register easements on ten properties on the right of way that do not have easements registered on title.

Question(s):

a) Please confirm that the easements referenced above are permanent easements. Otherwise, please clarify.

b) Please provide a brief status update on Hydro One's progress towards obtaining the land agreements required for the Project.

OEB Staff-22:

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.