



EB-2007-0013

IN THE MATTER OF the *Ontario Energy Board Act, 1998*,
S.O. 1998, c.15, Schedule B;

AND IN THE MATTER OF an Application by Hydro One
Networks Inc., for an Order or Orders granting leave to
construct new transmission facilities in the City of Brampton.

BEFORE: Paul Sommerville
Presiding Member

Cynthia Chaplin
Member

Ken Quesnelle
Member

DECISION AND ORDER

Application

On February 28, 2007 Hydro One Networks Inc. (the "Applicant" or "Hydro One") filed an Application with the Ontario Energy Board ("the Board") under section 92 of the *Ontario Energy Board Act, 1998*, S.O. 1998, c. 15, Schedule B. The Applicant applied for an order of the Board for leave to construct approximately 3.0 kilometres of 230 kV underground transmission circuits in the City of Brampton. The proposed facilities are to be located on an existing transmission line right of way ("ROW") between the Jim Yarrow Municipal Transformer Station ("Jim Yarrow MTS") and the proposed Hurontario Switching Station.

A Notice of Application was issued for this project on March 15, 2007 and it was published on March 28, 2007. The last date for intervention was April 10, 2007. A request for intervention was received from the Independent Electricity System Operator

(the “IESO”) and the request was granted. As no parties requested an oral hearing, the Board proceeded by way of a written hearing.

On May 7, 2007 the Board issued Procedural Order No. 1, making provision for interrogatories to be submitted by May 11, 2007 and responses to be provided by May 18, 2007. Interrogatories were filed by Board staff and responses were received from the Applicant by the specified dates. In addition, Board staff submitted supplemental interrogatories to Hydro One on May 31, 2007 and Hydro One responded to these supplemental interrogatories on June 11, 2007.

Board Findings

Project Need and Alternatives

Hydro One is seeking leave to reinforce its transmission facilities in the West Brampton area in order to deal with overloading on the supply circuits to Jim Yarrow MTS and Pleasant Transformer Station (“Pleasant TS”). In addition, reinforcement is needed on these circuits to reduce the load loss (under line outage conditions) to IESO deliverability guideline limits. The planned in-service date for the proposed facilities is June, 2009. Under the Board’s Filing Requirements for Transmission and Distribution Applications, Hydro One considers this project to be non-discretionary since it is needed:

- to satisfy reliability standards and guidelines within a specified operating timeframe; and
- to address near term equipment or facility loading or ratings when their capacities are, or are about to be exceeded.

In an application for Leave to Construct approved by the Board on January 31, 2007 (EB-2006-0215: Hurontario Switching Station and associated Facilities), the Applicant made reference to overall loading and system performance concerns in the entire GTA West area. The issues that were detailed in that application related to loading concerns on the four 230 kV transmission lines (R14T, R17T, R19T and R21T) that connect Trafalgar TS and Richview TS. In addition to the loading concerns on those major southern Ontario east/west transmission circuits, the tapped supply circuits (R19T North, R21T North) to Jim Yarrow MTS and Pleasant TS were also mentioned.

The proposal put forward by Hydro One in its EB-2006-0215 Application suggested removal of the Jim Yarrow and Pleasant tapped load from the Trafalgar-Richview circuits and reconnection of this load to Hydro One's Claireville TS by way of a new switching station. This proposed rearrangement also served to relieve the southern portion of the tapped lines to Jim Yarrow MTS and Pleasant TS. The proposed rearrangement, however, did not relieve the northern portion of the Jim Yarrow MTS and Pleasant TS supply circuits, and Hydro One indicates in its pre-filed evidence that these circuits have been overloaded since the summer of 2005.

This Application proposes a further reconfiguration of the Pleasant TS and Jim Yarrow MTS circuits and that Jim Yarrow MTS be supplied separately with underground circuits directly from Hurontario Station. This would result in some additional load on the Trafalgar to Richview circuits (beyond what was proposed in the EB-2006-0215 Application), however these circuits can support this additional load for the foreseeable future.

Regarding alternatives for the re-termination of the transmission circuits from Jim Yarrow MTS to Hurontario SS, Hydro One has put forward two options – an underground option and an overhead option. The underground option involves the installation of two buried circuits (a total of six conductors) arranged at a depth of approximately 1 m below grade along the edge of the 30 m to 36 m ROW. For mechanical protection each circuit (3 cables) is situated in a concrete enclosure. With respect to the overhead option, Hydro One advises that because of width limitations, there is inadequate space to install another double circuit overhead line along the existing ROW. An overhead line designed to carry all four circuits on a single structure configuration would fit on the existing ROW and could have been a potential alternative. However, while there is room for that type of overhead line, there is not adequate space on the existing ROW to accommodate the existing double circuit line and the temporary double circuit line which would be required to provide continued service during the construction phase of installing a single structure/four circuit configuration transmission line. As a result of the ROW width limitation, Hydro One stated that it did not consider the overhead option to be feasible.

The Board accepts that in this case an underground supply is the preferred option for the required transmission circuits.

Project Costs, Cost Responsibility and Transmission Rate Impacts

The cost of the proposed transmission facilities is estimated at \$50.8 million. Hydro One estimates that these costs will result in a net present value (“NPV”) of negative \$45.3 million and the Applicant proposes that this differential be covered by an increase in the transmission line connection pool rate. It is Hydro One’s position that a capital contribution is not required as this reinforcement involves upgrading facilities for Local Area Supply and improvements for more than one transmission customer. It is also the Applicant’s position that these facilities are included in the transmitter’s plans and therefore no capital contribution is required, in accordance with Section 6.3.6 of the Transmission System Code.

The \$50.8 M project estimate is made up of \$42.5 M for the underground transmission circuits and \$8.3 M for Stations and Telecommunication modifications. Although underground transmission facilities are significantly more costly than overhead facilities, Hydro One has indicated that underground facilities are necessary because it is not possible to construct overhead facilities within the ROW while maintaining a double circuit supply to the two area transformer stations during construction. If the cost of the project is provided by an increase in transmission line connection charges, as Hydro One is proposing, the increase on an average residential customer’s total electricity bill of \$120/month would be \$0.67/year or an increase of approximately 0.05%.

Hydro One advised in its interrogatory response that these facilities were included in its transmission plans for the area and had been initiated as a result of discussions and joint planning meetings with the electricity distributors in the western GTA vicinity. Hydro One further advised that transmission reinforcements were planned to deal with the load growth that the two distributors (Hydro One Distribution and Hydro One Brampton) supplied from Jim Yarrow MTS were experiencing.

In a recent proceeding before the Board dealing with Transmission System Code Connection Procedures (EB-2006-0189/EB-2006-0200) (the “Transmission Connection Procedures decision”), the Board considered section 6.3 and concluded:

It is clear that, taken as a whole, section 6.3 of the Code (including the sections referenced above) provides that in almost all cases where the transmitter is enhancing its equipment to accommodate the needs of a line connection, a capital contribution will be required from the customer or customers who benefit from the enhancement..... To be clear, where planning involves joint studies

between Hydro One and one or more distributor(s) to meet different timing and supply needs such as load growth, the Board views such plans as customer-driven, where a capital contribution would be required¹

Applying this reasoning of the Transmission Connection Procedures decision to the facts of this Application, it would appear that a capital contribution should be paid by the two distributors creating the increased demand, and their capital contribution should be commensurate with their contribution to the increase in demand. However, the Transmission Connection Procedures decision further reasoned that it may not be appropriate for certain elements of a connection asset upgrade to be included in a capital contribution calculation.

These unique system elements in some instances accommodate loads that are beyond a customer's requirement (e.g., autotransformers connecting the 230 kV transmission system to the 115 kV transmission system), or provide material additional system reliability and integrity improvements (e.g., additional lightning arresters in areas exposed to frequent storm activities). In other situations, unique system elements may be needed to deal with narrow rights of way where expensive underground cables may be needed instead of less expensive overhead transmission lines. The amount of capital contribution required in such cases should be reduced to reflect these special circumstances and to attribute an appropriate portion of the costs to the customer involved. In particular, use of autotransformers is seen as a means to optimize use of the transmission system as a whole in accommodating new loads safely and reliably and, most of all, in a timely manner. Similarly, the additional costs of placing transmission assets underground should not be attributed to a customer, unless that requirement forms part of that customer's stated requirement. The Board expects that these types of special circumstances would be addressed by transmitters in either leave to construct applications under section 92 of the Act, or in transmission rate applications in relation to "capital project expenditures".²

Application of this reasoning to the particulars of this application would likely result in a total capital contribution less than the negative NPV of \$45.3 M referenced by Hydro One in its evidence. However, this matter was not explored in depth in the proceeding and therefore, the Board cannot determine precisely what the contribution should have been. However, such a finding is not required because of this panel's decision to adopt the reasoning of the Transmission Connections Procedure decision with respect the current applications, which we address next.

1 Decision and Order EB-2006-0189/EB-2006-0200: paragraph 5, page 21 and paragraph 4, page 22

2 Decision and Order EB-2006-0189/EB-2006-0200: paragraph 7, page 24

The Transmission Connection Procedures decision also addressed how its interpretation of section 6.3 should be applied to applications, such as this one, which concern projects which were initiated well before the decision on how to interpret section 6.3 was made. The Board stated:

The ultimate disposition of the two Leave to Construct applications rests with the Panels that have been assigned to them. In this Panel's view, however, given that the issue of the interpretation of section 6.3.6 of the Code is only now being resolved through this Decision and Order, it would be inequitable to require a capital contribution for a project which has been completed or which is advanced to a point where parties have very clear expectations as to their respective responsibilities. To reach back now to require the customer to pay when the project has been presented as not requiring any such contribution would, in this Panel's view, be unfair. The customer had a right to know at the time of its engagement the full extent of its financial responsibility. To unwind these arrangements now could create significant difficulty and embarrassment for affected parties. Plans and projections involving diverse interests will have been made that may be difficult or impossible to recast.³

The Board agrees that this reasoning should be applied in this application. This project which was initiated well before the Transmission Connection Procedures decision was made and therefore to avoid any unfairness that might result from altering the amount of the capital contribution at this stage in the proceeding, the Board finds that no capital contribution should be paid by the two associated electricity distributors. The Board makes this finding irrespective of its view that such an amount would likely be less than the amount calculated by Hydro One.

Landowner Matters

Hydro One states that the proposed underground transmission circuits will be located entirely within the existing transmission ROW that is owned by the Province of Ontario and which runs between Jim Yarrow MTS and the future Hurontario SS. The Applicant advises that no additional land rights are required for this project. The ROW is owned by the Province of Ontario under title to the Ministry of Public Infrastructure and Renewal, and is managed by the Ontario Realty Corporation. Hydro One states that additional temporary working rights may be required but the extent of this requirement has not yet been identified.

System Impact Assessment

3:Decision & Order EB-2006-0189/EB-2006-0200; paragraph 3, page 27

A System Impact Assessment (SIA) was carried out by the IESO and a Final Draft Report (dated Feb 14/07) was included in the Applicant's pre-filed evidence. The IESO's SIA report confirmed that the loading on the R19T North/R21T North tapped connections to Pleasant TS and Jim Yarrow MTS exceeded the circuits' emergency rating of 422 MW in the summer of 2005. The SIA stated that if the reinforcement project was carried out as proposed:

- it would eliminate post contingency overloads that would have otherwise been experienced on the R19T North/R21T North circuits;
- fault levels in the general area would not be increased;
- the inherent capacitance of the proposed transmission cables would provide additional area voltage support to local area delivery points; and
- the removal of Jim Yarrow MTS from the R19T North/R21T North circuits would result in these circuits not being overloaded until 2012.

The report concluded that the transmission reinforcement to the Jim Yarrow MTS would improve the thermal capacity and voltage performance of the power system in West Brampton, and increase the reliability of supply to area loads. The SIA stated that the IESO supported the reinforcement as it was presented, but imposed conditions that Hydro One was required to follow. These conditions are as noted below and they are:

- Hydro One is required to implement a strategy to deal with the overloading on the R19T North/R21T North circuits to Pleasant TS before the load on these circuits exceeds 412 MW; and
- Hydro One is required to install monitoring, protective relaying and telecommunications equipment as required by the Market Rules and as described in the SIA.

Customer Impact Assessment

A Customer Impact Assessment (CIA) was carried out by Hydro One and a CIA Report (dated Jan 29/07) was included in the Applicant's pre-filed evidence. The CIA report also confirmed that the R19T North/R21T North tapped connection to Jim Yarrow MTS required reinforcement. As part of the CIA process, voltage performance and short

circuit fault levels were assessed at various local transformer stations in the vicinity of the proposed upgrade. The transmission customers fed from these local transformer stations are the three area distributors as follows:

- Enersource Hydro Mississauga (Erindale TS, Tomken TS and Cardiff TS)
- Hydro One Brampton (Jim Yarrow MTS, Pleasant TS)
- Hydro One Networks Inc.–Distribution (Pleasant TS)

The CIA study stated that the new proposed facilities would improve the voltage performance at all area locations. With the new proposed facilities in place, both the immediate and the longer term voltage declines (under contingency conditions) at all subject locations were within Hydro One operating standards. The fault levels at some locations would be increased slightly with the proposed transmission reinforcement, but they would still be well within equipment rating limits.

The Board accepts that the transmission reinforcement will improve the voltage performance of the West Brampton power system and generally increase power delivery and system reliability in that area, as outlined in the SIA and CIA.

Stakeholder Consultation and First Nations' Issues

The evidence indicates that significant work has been carried out to identify and consult stakeholders who may have an interest in the project. Hydro One representatives have met with staff from the City of Brampton and the Region of Peel. The Applicant has also met with local councilors and with representatives from the Peel District School Board and the Dufferin Peel Catholic District School Board.

Hydro One wrote to various bodies and agencies with interests in the area regarding the proposed project and a list of those contacted was provided in the pre-filed evidence. A public meeting was held regarding the project on February 7, 2007 at the Mississauga Convention Centre. General project material was provided at this meeting, and Hydro One and its project consultant were in attendance to answer questions and to provide information. The concerns that were brought forward were mostly associated with the impacts on the use of the ROW as “community greenspace” during construction as well as possible construction activity impacts caused by crossing creeks and highways. The Board accepts Hydro One’s evidence with respect to these stakeholder consultations.

Regarding Aboriginal Peoples' issues, Hydro One stated in its interrogatory responses that it contacted the following groups:

- the Mississaugas of New Credit First Nation;
- the Six Nations Elected Council;
- the Haudenosaunee Six Nations Confederacy Council; and
- the Huronne – Wendate First Nation.

The Applicant stated that various phone conversations took place with the groups noted above, and a briefing was provided to the Haudenosaunee Six Nations Confederacy Council and the Mississaugas of New Credit First Nation on November 1, 2006 and November 6, 2006 respectively, at their request. The Applicant stated that to date no group has brought forward issues or concerns regarding the project. The Board finds that Hydro One's consultations with Aboriginal Peoples have been appropriate.

Project Environmental Assessment

The proposed Western Brampton Transmission Reinforcement facilities fall within the definition of projects covered by the *Class Environmental Assessment for Minor Transmission Facilities* ("Class EA") which is approved by the Ontario Ministry of Environment ("MOE") under the *Ontario Environmental Assessment Act*. The Applicant indicated in its pre-filed evidence that it would issue a Draft Environmental Study Report ("ESR") in early March, 2007, which would be made available to the public, municipal officials, provincial ministries and agencies for a 30-day review and comment period. During this review period, there would be an opportunity for any stakeholder to express concerns about the project. If no concerns were expressed during the review period, the ESR would be finalized and submitted to the MOE. In May of this year, Hydro One advised Board staff that there had been a delay in preparing the Draft ESR, which was posted for review and comment on April 23, 2007. A letter sent to the Board dated September 14, 2007 by the Applicant, indicates that the final Environmental Study Report was filed with the Ministry of the Environment on August 23, 2007.

The Board therefore accepts that all *Environmental Assessment Act* requirements have been satisfied.

Conclusion

Based on the evidence provided and the above findings, the Board has determined that the construction of the proposed facilities is in the public interest and that an Order granting leave to construct should be made.

THIS BOARD ORDERS THAT:

1. Hydro One Networks Inc. is granted leave, pursuant to section 92, to construct approximately 3.0 kilometres of 230 kV underground transmission circuits on an existing transmission line corridor between the Jim Yarrow MTS and the proposed Hurontario Switching Station, in the City of Brampton, subject to the Conditions of Approval attached as Appendix A to this Order.
2. Hydro One Networks Inc. shall pay the Board's costs incidental to this proceeding upon receipt of the Board's invoice.

DATED at Toronto, October 9, 2007

ONTARIO ENERGY BOARD

Original Signed By

Kirsten Walli
Board Secretary

**APPENDIX A
TO BOARD DECISION AND ORDER
IN THE MATTER OF EB-2007-0013
DATED OCTOBER 9, 2007**

CONDITIONS OF APPROVAL

**APPENDIX A
CONDITIONS OF APPROVAL
EB-2007-0013
HYDRO ONE NETWORKS INC.**

WESTERN BRAMPTON TRANSMISSION LINE REINFORCEMENT PROJECT

1 General Requirements

- 1.1 Hydro One Networks Inc. ("Hydro One") shall construct the facilities and restore the land in accordance with its application, evidence and undertakings, except as modified by this Order and these Conditions of Approval.
- 1.2 Unless otherwise ordered by the Board, authorization for Leave to Construct shall terminate December 31, 2008, unless construction has commenced prior to that date.
- 1.3 Except as modified by this Order, Hydro one shall implement all the recommendations of the Environmental Study Report that has been prepared for this project.
- 1.4 Hydro One shall advise the Board's designated representative of any proposed material change in the project, including but not limited to changes in: the proposed route; construction techniques; construction schedule; restoration procedures; or any other impacts of construction. Hydro One shall not make a material change without prior approval of the Board or its designated representative. In the event of an emergency the Board shall be informed immediately after the fact.
- 1.5 Hydro One shall obtain all necessary approvals, permits, licences, certificates and easement rights required to construct, operate and maintain the proposed project, shall provide copies of all such written approvals, permits, licences and certificates upon the Board's request.

2 Project and Communications Requirements

- 2.1 The Board's designated representative for the purpose of these Conditions of Approval shall be the Manager, Facilities.
- 2.2 Hydro One shall designate a person as project engineer and shall provide the name of the individual to the Board's designated representative. The project engineer will be responsible for the fulfillment of the Conditions of Approval on the construction

site. Hydro One shall provide a copy of the Order and Conditions of Approval to the project engineer within ten (10) days of the Board's Order being issued.

- 2.3 Hydro One shall give the Board's designated representative ten (10) days written notice in advance of the commencement of construction.
- 2.4 Hydro One shall furnish the Board's designated representative with all reasonable assistance needed to ascertain whether the work is being or has been performed in accordance with the Board's Order.
- 2.5 Hydro One shall develop, as soon as possible and prior to start of construction, a detailed construction plan. The detailed construction plan shall cover all activities and associated outages and also include proposed outage management plans. These plans should be discussed with affected transmission customers before being finalized. Upon completion of the detailed plans, Hydro One shall provide five (5) copies to the Board's designated representative.
- 2.6 Hydro One shall furnish the Board's designated representative with five (5) copies of written confirmation of the completion of construction. This written confirmation shall be provided within one month of the completion of construction.

3 Monitoring and Reporting Requirements

- 3.1 Both during and after construction, Hydro One shall monitor the impacts of construction, and shall file five (5) copies of a monitoring report with the Board within fifteen months of the completion of construction. Hydro One shall attach to the monitoring report a log of all complaints related to construction that have been received. The log shall record the person making the complaint, the times of all complaints received, the substance of each complaint, the actions taken in response, and the reasons underlying such actions.
- 3.2 The monitoring report shall confirm Hydro One's adherence to Condition 1.1 and shall include a description of the impacts noted during construction and the actions taken or to be taken to prevent or mitigate the long-term effects of the impacts of construction. This report shall describe any outstanding concerns identified during construction and the condition of the rehabilitated land and the effectiveness of the mitigation measures undertaken. The results of the monitoring programs and analysis shall be included and recommendations made as appropriate. Any

deficiency in compliance with any of the Conditions of Approval shall be explained.

- 3.3 Within fifteen (15) months of the completion of construction, Hydro One shall file with the Board a written Post Construction Financial Report. The report shall indicate the actual capital costs of the project with a detailed explanation of all cost components and shall explain all significant variances from the estimates filed with the Board.

4 Environmental Assessment Act Requirements

- 4.1 Hydro One shall comply with any and all requirements of the Environmental Assessment Act relevant to this application.

5 System Impact Assessment

- 5.1 Hydro One shall implement all of the IESO recommendations as set out in the Final Draft System Impact Report (CAA ID 2006-248) dated February 14, 2006.