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**BY E-MAIL**

May 12, 2010

Ms. Kirsten Walli  
Board Secretary  
Ontario Energy Board  
2300 Yonge Street, Ste. 2701  
Toronto, ON M4P 1E4

Dear Ms. Walli:

**Re: Board Staff Submission  
Hydro One Networks Inc. Application for Leave to Construct Transmission  
Facilities in the City of Toronto  
Board File No. EB-2009-0425**

Please find attached the Board staff submission with respect to the above proceeding.

Please forward the attached submission to Hydro One Networks Inc. and all intervenors in this proceeding.

Yours truly,

*Original signed by*

Edik Zwarenstein  
Project Advisor

**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. pursuant to section 92(1) of the *Ontario  
Energy Board Act, 1998*, S.O. 1998, c.15, Schedule B, (the  
“Act”) seeking an order granting leave to construct the  
Toronto Midtown Transmission Reinforcement Project.

**BOARD STAFF SUBMISSION**

**Hydro One Networks Inc.  
Application for Leave to Construct  
Transmission Facilities in the City of Toronto**

**Board File No.: EB-2009-0425**

## **1. Introduction**

The applicant, Hydro One Networks Inc. (“the Applicant”) is seeking leave to construct transmission facilities for the Toronto Midtown Transmission Reinforcement Project (“Midtown Project”). The work involves constructing and renewing 5.3 km of overhead and underground transmission line facilities in the City of Toronto.

The project consists of replacement of an end-of-life underground cable section, construction of an underground tunnel, construction of a new circuit to address the overloading of existing facilities and future load growth, and modifications to transformer station facilities. The project will be in the Midtown Toronto area, and will go through residential neighborhoods.

The need for this project has been demonstrated in a prior proceeding (EB-2006-0051), and has been argued again in the present proceeding. The prior project did not materialize, but load growth and grid refurbishment and reliability issues in that area remain. The present project seeks to address these concerns.

## **2. Intervenor Proposals and Evidence**

The North Rosedale Ratepayers Association (“NRRA”) in its letter of April 26, 2010 provided evidence supporting an alternate route, the Hybrid Solution that differs from the ones Hydro One has considered thus far in that this alternate route would, in NRRA’s view: lower costs, reduce construction times, circumvent coordination with Canadian Pacific Railway, and reduce the impact on the neighbourhood.

The Toronto District School Board (TDSB) has also submitted additional interrogatories and evidence on April 26, 2010, highlighting the proximity of transmission lines to TDSB’s lands and the potential health implications of electromagnetic fields (EMFs).

The Board's jurisdiction to consider Leave to Construct applications is limited by s. 96(2) of the Ontario Energy Board Act which states:

In an application under section 92, the Board shall only consider the following when, under subsection (1), it considers whether the construction, expansion or reinforcement of the electricity transmission line or electricity distribution line, or the making of the interconnection, is in the public interest:

1. The interests of consumers with respect to prices and the reliability and quality of electricity service.
2. Where applicable and in a manner consistent with the policies of the Government of Ontario, the promotion of the use of renewable energy sources.

The Board in Procedural Order No. 4 clarified that matters relating to the electromagnetic fields are not within the scope of the Board's jurisdiction.

### **3. Need for the Project**

#### **3.1. Introduction**

The Board reviews the "need" for a project as part of its mandate to consider the price impacts of a proposed project.

The applicant in pre-filed evidence submitted that the project is needed

- primarily to replace some end-of-life underground cable,
- to avoid overloading under single contingency conditions and
- to provide for future growth.

The need for the project was initially established in an earlier hearing (EB-2006-0501) and was accepted by the Board. The applicant has submitted new evidence and does not rely on the earlier application, but submits that the need remains unchanged.

#### **3.2. Load Forecast**

Since the earlier application there has been an economic downturn. The

applicant points out that the current application is based on a 2009 load forecast by THESL and reflects actual data for the period 2006-2009 and a projected growth which is reduced by the effects of CDM. Hydro One advises that THESL asserts that an economic downturn which reduced load was underway in the period 2006 to 2009 and that the historical growth of 1% is not likely to change because of the nature of the load, which is mainly residential, subject to subdivision and upgrading and hence continually increasing load.

The evidence in Exhibit B, Tab 1, Schedule 4, pages 4 - 6 suggests that there will be overload conditions under single contingency conditions within the next few years. Further detail was provided in response to Board staff interrogatories 1 through 3<sup>1</sup>.

### **3.3. IESO Assessment**

The IESO studied the current system and the proposed changes in its final SIA dated August 11, 2009 and identifies that over loading will occur starting in 2014 and that even at 2009 peak loads certain operational options become unavailable due to thermal overloading.

### **3.4. Infrastructure Ageing**

The underground cable constituting circuit L14W was installed in the 1960's and is said by the applicant<sup>2</sup> to be amongst the oldest in Toronto. It has recently been damaged and reliability is a concern. In addition overhead cable in the Leaside to Bayview section is at end-of-life<sup>3</sup>.

### **3.5. Summary**

Board staff is persuaded that the need for the project in the coming years has been established. Board staff observes that no party appears to challenge the need for the project.

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<sup>1</sup> Exhibit C Tab 1 schedules 1, 2 and 3.

<sup>2</sup> Exhibit B Tab 1 Schedule 4 page 3

<sup>3</sup> Exhibit B Tab 4 Schedule 3 Page 2 Line 20

## **4. Alternatives**

### **4.1. For the Section Leaside TS to Bayview Junction**

This section includes overhead line which is at end of life<sup>4</sup> and needs to be replaced. Hydro One dismissed options which would bury the cable in either a trench or a tunnel on the basis of expense. One commenter (Mr. C.R. Vernon) indicated that there is an opportunity to bury the conductors at this time and remove the towers as part of this project. A comment was received from Loblaws indicating they are in discussion with Hydro One in regards to tower location. No registered intervenor offered alternatives on this section.

### **4.2. For the Section from Bayview Junction to Birch TS**

Hydro One has looked at alternatives to this and examined an alternative involving trenching along the CPR line in more detail, but found it a problem to cross Yonge Street due to privately held property rights under the railway line in the area of Yonge Street, and a refusal by CPR to allow use of a railway bridge. Hydro One stated that further alternatives along roadways are not viable because all of these alternatives are longer, more disruptive to the local community and more expensive. Furthermore, there is a problem in crossing Yonge Street with trenching due to numerous existing infrastructures below the roadway.

### **4.3. For the Section Birch TS to Bridgman TS**

The proposal in this section envisages restringing of the existing overhead transmission line circuits. No alternatives were proposed by the applicant or any other party.

### **4.4. NRRA Alternative to Tunnel**

The NRRA additionally proposed a route which avoided the railway area.

Hydro One indicated that this was an option that they had considered but it was

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<sup>4</sup> Exhibit B Tab 4 Schedule 3 Page 2 Line 20

not the preferred alternative due to environmental effects, and increased length, and expense and it was not pursued by Hydro One<sup>5</sup>.

While the NRRA has sought to provide an alternative, there is little evidence on the record that would allow the Board to conclude that this alternative is superior to the option proposed by Hydro One. Board Staff examined and submitted interrogatories on the evidence on 29 April 2010 and the NRRA provided its response on May 10, 2010. The response does not provide additional information in regard to costs, or route advantages and therefore does not assist in evaluating the project.

#### **4.5. Summary**

Board staff submits that Hydro One has demonstrated that its proposal is the best alternative.

### **5. Costs**

#### **5.1. Cost to Ratepayers**

The cost of the preferred option is estimated at \$104.9m. The applicant indicates that the effect on the average ratepayer bill would be approximately 0.05%.

#### **5.2. Cost of the Hydro One Tunnel Option**

The original project proceeding (2006) proposed a trench rather than a tunnel, and the estimated cost for the entire project was estimated to be \$57 million. An explanation for the increased cost was provided and the difference in construction, which covers the whole project (only part of which is the tunneling), is \$17.2 million. The applicant indicates in response to Board staff interrogatory #5 h)<sup>6</sup> that the difference arises from higher real estate costs (+\$7.9m), a larger contingency allowance (+\$12.2m), increased interest costs due to “higher project costs, longer construction time and higher interest rates” (+\$7m) and

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<sup>5</sup> Exhibit B-3-1-p4 option S2-2 and “Other options”

<sup>6</sup> Exhibit C-1-5-p3]

overhead charges (+\$4m).

The cost of the tunneling in the current project timeframe is indicated as \$12.5 million/km for the current project and this is compared with the trenching option in the same timeframe of \$12.3 million/km<sup>7</sup>. Compared to a very similar project (same length and diameter, but not quite as deep) in the response to Board staff interrogatory #5h<sup>8</sup>, the applicant indicates the Esplanade x John Tunnel cost \$23 million in 2007. The tunnel cost in the current project is 2.2 km X \$12.5million/km =\$27.5m. The difference is plausible given the intervening 10 years of material and labour cost increases, even though this one is carrying 115kV and the earlier one was 230kV cables.

### 5.3. The Hybrid Options

Both Board staff and the NRRA sought information on the possibility of an option which did not use the deep rock tunneling. The applicant indicated that the options are similar to what they themselves examined as the main alternative with the difference being that there would be soft ground tunneling across Yonge Street.

In the end there are specific items which appear to render the alternative less attractive:

- The soft ground tunneling across Yonge Street requires 250m of length at \$6m and the acquisition of private land and this would increase the overall cost of the project<sup>9</sup>.
- The trenching option cost for going along the CPR railway line is not significantly less expensive than the tunnel, at \$12.3million per km vs. \$12.5million per km for the tunnel option.

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<sup>7</sup> B-4-2-p6-Table 7

<sup>8</sup> Exhibit C-1-5 p3

<sup>9</sup> Response to Bd Staff Interrogatory 6c), Exhibit C-1-6 p2



#### **5.4. Risks**

The project has provided for a significant amount of contingency to face the risks inherent in a tunneling operation. Over and above the contingency which was allowed, the applicant indicated (in Exhibit B-4-2) certain risks for which costs had not been estimated. In response to Energy Probe Interrogatory #9<sup>10</sup> the applicant advised that the risk of tunnel engineering had now been limited to \$1million due to numerous borings that have provided tunnel engineering information. There remains the risk of changes imposed on the project by the Environmental Assessment process.

#### **5.5. Summary on Costs**

Board staff believe that the costs of the project, while high on an absolute basis, are reasonable for the work proposed and is consistent with comparable projects.

### **6. Conditions of Approval**

Board staff submit that conditions of approval should confirm the commitments to residents in regard to concerns about the conditions of construction and require that Hydro One establish and publish a number which can be called for complaints, and that Hydro One be required to report on the complaints received. A draft Conditions of Approval is attached hereto.

ALL OF WHICH IS RESPECTFULLY SUBMITTED

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<sup>10</sup> Exhibit C Tab 4 Schedule 9

**(DRAFT) Conditions of Approval for  
Hydro One Midtown Toronto Transmission Reinforcement (the “Project”)  
EB-2009-0425**

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**1 General Requirements**

1.1 Hydro One Networks Inc. (“HYDRO ONE”) shall construct the Project and restore the Project land in accordance with its Leave to Construct 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, 2010, unless construction of the Project has commenced prior to that date.

1.3 HYDRO ONE shall implement all the recommendations of the Environmental Screening Reports filed in the pre-filed evidence, and such further and other conditions which may be imposed by environmental authorities.

1.4 HYDRO ONE shall satisfy the Independent Electricity System Operator (“IESO”) requirements and recommendations as reflected in the Final System Impact Assessment report, and such further and other conditions which may be imposed by the IESO.

1.5 HYDRO ONE shall satisfy the requirements as reflected in the Final Customer Impact Assessment report, and such further and other conditions which may be imposed by HONI.

1.6 HYDRO ONE shall advise the Board's designated representative of any proposed material change in the Project, including but not limited to material changes in the proposed route, construction techniques, construction schedule, restoration procedures, or any other material 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.

1.7 HYDRO ONE shall obtain all necessary approvals, permits, licences, certificates and easement rights required to construct, operate and maintain the Project, and 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, Electricity Facilities & Infrastructure.

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 develop, as soon as possible and prior to the start of construction, a detailed construction plan. The detailed construction plan shall cover all material construction activities. HYDRO ONE shall submit five (5) copies of the construction plan to the Board's designated representative at least ten (10) days prior to the commencement of construction. 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, in conjunction with the IESO, develop an outage plan which shall detail how proposed outages will be managed. HYDRO ONE shall provide five (5) copies of the outage plan to the Board's designated representative at least ten (10) days prior to the first outage. HYDRO ONE shall give the Board's designated representative ten (10) days written notice in advance of the commencement of outages.

2.6 HYDRO ONE shall furnish the Board's designated representative with five (5) copies of written confirmation of the completion of Project 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 for a period of twelve (12) months after the completion of construction of the Project, HYDRO ONE shall monitor the impacts of construction, and shall file five (5) copies of a monitoring report with the Board within fifteen (15) months of the completion of construction of the Project. HYDRO ONE shall attach to the monitoring report a log of all comments and complaints related to construction of the Project that have been received. The log shall record the person making the comment or complaint, the time the comment or complaint was received, the

substance of each comment or complaint, the actions taken in response to each if any, 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 of the Project and the actions taken or to be taken to prevent or mitigate the long-term effects of the impacts of construction of the Project. This report shall describe any outstanding concerns identified during construction of the Project and the condition of the rehabilitated Project 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.

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