

Woodstock East Transmission Line Upgrade EB-2009-0079 Board Staff Submission

Application

Hydro One Networks Inc. (“Hydro One” or the “Applicant”) filed an application on May 31, 2009 with the Ontario Energy Board (the “Board”) pursuant to Section 92 of the *Ontario Energy Board Act, 1998* (the “Act”) for an order granting leave to construct transmission line facilities in the County of Oxford and specifically in the City of Woodstock and in Norwich Township. The proposed transmission line facilities involve rebuilding approximately 4 km of a single-circuit 115 kV transmission line on an existing right-of-way (“ROW”) with a double-circuit 230 kV line. Hydro One also proposed to construct a new transformer station (“Commerce Way TS”) at the request of the Local Distribution Companies (Hydro One Distribution and Woodstock Hydro), to which the rebuilt line will connect. Hydro One contends that this transformer station is not subject to section 92 approval, but Hydro One stated that it included information about this station to provide additional context to the application.

Background and Project Overview

Hydro One states that the proposed work to be carried out and the line facilities to be constructed, owned, and operated by Hydro One are as follows:

- approximately 4 km of 230 kV double-circuit line would be constructed to replace the existing B8W single-circuit 115kV line on the existing ROW between Woodstock TS and the proposed Commerce Way TS;
- this rebuilt line would be connected to a new double-circuit line, K7/K12, at Woodstock TS (approved under EB-2007-0027 and scheduled to be in-service in December 2011);
- approximately 0.1 km of double-circuit line would be constructed from the B8W ROW to the location of the new Commerce Way TS; and

- approximately 4 km of the existing 115 kV circuit line B8W from Woodstock TS to Commerce Way TS would be removed.

Hydro One states that the new line would initially operate at 115 kV. Hydro One also states that the new transformer station, Commerce Way TS, is being built at the request of the Local Distribution Companies (“LDCs”) and it is proposed that this station be constructed, owned, and operated by Hydro One.

Project Type (Transmission Line Requirement)

Hydro One states in its pre-filed evidence that the existing single-circuit B8W line is nearing its end-of-life and the line towers can not accommodate the replacement of the existing conductors with larger or higher-rated conductors or accommodate an additional circuit placement due to the lack of tower structural strength. Hydro One submits that this aspect of the need for new or rebuilt transmission facilities is non-discretionary. For the development aspect of the project (the upgrade to a double-circuit 230 kV line), Hydro One states that this need is discretionary as this work could be done at a later date. Hydro One proposes to do the work now, however, in order to take advantage of construction synergies with the current project.

Board Staff accepts that transmission line B8W needs replacement due to the fact that it is nearing its end of life and that although this project may have discretionary aspects, it is primarily non-discretionary due to end-of-life considerations for the asset in question.

Relevant Hydro One/IESO Transmission Operating Guidelines

The pre-filed evidence indicates that Hydro One’s preferred solution when rebuilding the line is to provide a double-circuit supply to Commerce Way TS. Hydro One states that adding a second circuit is based on the IESO’s Load Restoration Criteria (contained in IESO’s Ontario Resource Transmission Assessment Criteria), which specifies that loads greater than 150 MW should be restorable within an approximate 4-hour time limit following a contingency. Typically, this means the line should be restorable through switching to a readily accessible second circuit. Hydro One states in its pre-filed evidence at Exhibit B, Tab 1, Schedule 4, pages 3 and 4 that 145 MW of load is forecast to be delivered by the B8W transmission line and

this load delivery is close to the 150 MW threshold of the Load Restoration Criteria referenced above. As a result, Hydro One contends that it is appropriate to install a second circuit at this time when construction at this location is already taking place.

Board Staff submits that providing for more reliability and system redundancy by installing a double-circuit transmission facility at this juncture is discretionary on the part of Hydro One. Further, the load projected for this upgrade does not meet the 150 MW threshold of the Load Restoration Criteria, it only approaches this level at some point in the future. In its response to Board Staff Interrogatory #2, Hydro One states that load delivery of 145 MW on the circuit B8W is forecast to occur in the year 2040.

Project Type (Transmission Station Requirement)

Hydro One has proposed to construct a new transformer station ("Commerce Way TS") at the request of the Local Distribution Companies, to which the rebuilt line will connect. In its application, Hydro One asserts that the transformer station is not subject to section 92 approval and that information is provided about it only to provide context to the application.

Board staff respectfully disagrees with Hydro One's assertion that it does not require section 92 approval for the transformer station in question. In fact, section 92(1) of the Act states as follows:

No person shall construct, expand or reinforce an electricity transmission line or an electricity distribution line or make an interconnection without first obtaining from the Board an order granting leave to construct, expand or reinforce such line or interconnection.

Importantly however, section 89 of the Act defines "electricity transmission line" to mean "...a line, transformers, plant or equipment used for conveying electricity at voltages of higher than 50 kilovolts".

It follows then, that leave is indeed required pursuant to section 92 for transformers and in particular, in this application, for the Commerce Way TS.

The pre-filed evidence indicates that the existing Woodstock TS is over-loaded and the summer peak demand has exceeded its summer capacity of 82.9 MW for the past few years. Woodstock Hydro and Hydro One Distribution, in a combined load forecast, projected load growth over the summer capacity rating at Woodstock TS of 40 MW by 2012 and 60 MW by 2016.

Woodstock Hydro and Hydro One Distribution are therefore requesting that Hydro One Networks build a new transformer station to meet their forecast demand. The proposed station ("Commerce Way TS") would be located near the anticipated load center and within close proximity of the existing 115 kV line (B8W) corridor. Hydro One asserts that the forecast load growth can not be met through distributed generation in the Woodstock Area or through conservation and demand management initiatives and so a supply type initiative is required.

Board staff accepts that a new TS (Commerce way Transformer Station) is needed to meet additional load requirements and that this is a non-discretionary requirement for new transformer station facilities.

Need for New/Rebuilt Facilities

Transmission

Board Staff submits that end of life considerations regarding the B8W transmission line support the rebuilding of this circuit. In addition, Board Staff submits that rebuilding this line to a facility with identical load delivery capacity (105 MW) is not prudent and so it is reasonable for Hydro One to propose a new line with some degree of additional capacity. With respect to the proposal by Hydro One to construct a line insulated to the 230 kV level, Board Staff also finds this to be reasonable since Hydro One has already initiated this approach in the Woodstock area in anticipation of an overall voltage upgrading at a later date. Board Staff, however, are not in agreement with Hydro One's proposal to construct a double-circuit transmission line and as noted on page 3 of this submission Board Staff submits that the projected load on this line does not meet the 150 MW threshold of the Load Restoration Criteria necessitating this degree of redundancy. Hydro One states in its pre-filed evidence at Exhibit B, Tab 1, Schedule 4, page 4 that "in Hydro One's view it is appropriate to install a second circuit at this time given that the Woodstock area is becoming an area of increasing manufacturing importance (e.g.,

the new Toyota plant and associated spin-offs) with time-sensitive loads requiring high reliability". Although Hydro One asserts that it is appropriate to install a second circuit on the B8W corridor because of the enhanced reliability requirement, it made no reference in the pre-filed evidence to the delivery point performance (Transmission System Code section 4.5.1) of the terminations for the B8W line.

Board Staff submits that if Hydro One believes the Woodstock area reliability requires improvement, it should have made reference to the delivery point performance of the existing B8W line for the Woodstock TS and Woodstock Toyota TS tap locations. In addition, Hydro One did not indicate the triggering events which would bring about an analysis and evaluation on how best to make these reliability improvements.

Notwithstanding the historical and present day delivery point performance of the B8W line, if Hydro One asserts that this specific area in Woodstock requires higher than the normal degree of high voltage system reliability, Board Staff submits that the incremental cost of providing a second transmission circuit should be borne by the local transmission customers that are receiving this reliability benefit.

Transformer Station

Board Staff is of the view that Hydro One has provided sufficient evidence in the form of background information and load forecasts (Exhibit B, Tab 1, Schedule 4, pages 1 and 2) that a new TS (Commerce way Transformer Station) is needed to meet additional load requirements and that this facility is appropriately sized and properly located in the area of projected load growth.

Project Economics, Cost Feasibility and Cost Allocation

The proposed transmission reinforcement facilities in Woodstock are comprised of both line and transformation assets. Hydro One proposes to include the costs of the new 230 kV double-circuit transmission line from Woodstock TS to Commerce Way TS in the Line Connection Pool for rate making purposes. Hydro One states that transmission line assets of this nature and configuration trigger pool funding, since the design of the new line is over-and-above the customer requested facilities to meet system reliability and future load growth needs as well as encompassing the rebuilding of an existing end-of-life circuit.

The transformation assets consist of a new 115-27.6 kV 50/83 MVA DESN transformer station. Hydro One advises that these assets will be included in the Transformation Connection pool.

Hydro One states that a Discounted Cash Flow (DCF) calculation has been completed for each pool consistent with the economic evaluation requirements of the Transmission System Code to determine whether a capital contribution is required. For the Line Connection Pool, no capital contribution is required and for the Transformation Connection Pool capital contributions, totalling \$12.6 million, excluding GST, are required.

Line Connection Pool and Network Pool

In determining the capital contribution regarding the line connection assets, Hydro One states that it has assigned costs to customers for cost responsibility purposes of \$0.7 million. This amount covers the cost of constructing a line tap from the B8W ROW to the new station location. Hydro One indicates that the remaining \$14.2 million of line connection costs covers the cost of rebuilding the existing end-of-life line to 230 kV standards and installing a second 230 kV circuit from Woodstock TS to the tap location for Commerce Way TS. Additionally, of the \$6.4 million in telecommunications work required for the project (which is primarily network pool-related), Hydro One has indicated that \$5.8 million has been identified to upgrade telecommunication for the transmission system reliability needs (i.e., the 230 kV upgrade).

Board Staff accepts Hydro One's reasoning for cost allocation regarding the 100 metre connection from the transmission line ROW to the location of Commerce West TS and agrees that the transmission customers at this location should pay for this facility. Board Staff disagrees, however with Hydro One's assertion that rebuilding the existing end-of-life line to 230 kV standards and installing a second 230 kV circuit from Woodstock TS to the tap to Commerce Way TS and upgrading the telecommunication resources for the 230 kV transmission system should all be paid for by the transmission connection pool. Board Staff submits that the cost difference between a 230kV single circuit transmission line and a 230kV double circuit transmission line should be paid for by the transmission customers (Hydro One

Distribution, Woodstock Hydro and Toyota) at this location that benefit from the increased transmission reliability that a double-circuit transmission line affords.

Transformation Connection Pool

Hydro One states it has assigned costs to customers for cost responsibility purposes in relation to the Transformation Connection pool of \$23.8 million for a new 115-27.6 kV 50/83 MVA DESN transformer station at Commerce Way TS. This amount includes \$0.6 million of telecommunications costs assigned to customers for installation of protection and control (P&C) systems at Commerce Way TS and for P&C modifications at nearby stations. The remaining \$0.3M of TC costs is assigned to the pool as this is to accommodate future design for 230 kV.

A 25-year discounted cash flow analysis for the Transformation Connection facilities is provided in the pre-filed evidence. The results indicate that the forecast incremental revenues are expected to be insufficient to pay for the incremental capital and operating costs (shortfall of \$12.6M) and therefore, as noted above, a capital contribution will be required. Hydro One proposes that the capital contribution (based on agreed capacity share) will be split between two proponents as follows: 1) Hydro One Distribution - \$8.5 million, 2) Woodstock Hydro - \$4.1 million.

Board Staff notes that the cost breakdown information provided for Commerce Way TS lack the kind of detail that is normally provided. Board Staff, however, submits that the overall amount Hydro One estimate for this transformer station (\$23.5M) is in the range for such facilities located in this type of environment.

All of which is respectfully submitted.