May 31, 2004

Mr. Tom Kydd
Acting Manager – Stations T&D: Sustainment Programs
Hydro One Networks Inc.
483 Bay Street
15th Floor - North Tower
Toronto, ON M5G 2P5

Dear Mr. Tom Kydd:

Tillsonburg TS

Notification of Approval of Connection Proposal
CAA ID Number: 2004-EX146

Thank you for the detailed information that you provided on the plan to replace existing the Tillsonburg T1, T2 and T3 transformers with two 50/83 MVA units.

The assessment concluded that the proposed project would not have a negative impact on the reliability of the IMO-controlled grid.

The IMO is therefore pleased to grant **conditional approval** for the installation of the new equipment, as detailed in the attached *System Impact Assessment Report*. Any material changes to your proposal may require a re-assessment by the IMO in accordance with Market Manual 2.10, and may nullify your conditional approval.

Final approval will be granted upon successful completion of the IMO Facility Registration process. During facility registration you will be expected to demonstrate that the project you have installed is materially unchanged from the proposal assessed by the IMO. Contact facility.registration@theIMO.com if you have not received a Facility Registration Summary package within the next 10 days.

A copy of the Report will be posted on the IMO web site: www.theimo.com.

To commence the construction process, please follow the necessary procedures and obtain the required approvals, licences and permits as may be required by the OEB and other regulatory authorities.

For further information, please contact the undersigned.

Yours truly,

Bob Gibbons
Manager - Long Term Forecasts & Assessments
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Expedited System Impact Assessment Report for

Tillsonburg TS

1.0 Description of Proposal

Tillsonburg Transformer Station (TS) is supplied from a single 115 kV circuit, either W8T or T11T. The station is normally supplied from circuit W8T.

Hydro One Networks Inc. (HONI) is proposing to replace the existing Tillsonburg 115/27.6 kV T1, T2 and T3 transformers with two new larger units. The incorporation of larger transformers also requires some of the 115 kV and 27.6 kV breakers and switches to be replaced.

In particular, the existing 50 MVA T2 transformer will be decommissioned and the existing 50 MVA T1 and 42 MVA T3 transformers will be replaced with two new 50/83 MVA units. The T1 transformer HV disconnect will be upgraded from 600 A to 1,200 A, while the T1 & T3 transformer breakers and LV disconnect switches will be upgraded from 2,000 A to 3,000 A.

In addition, the existing 27.6 kV Z bus, BZ bus-tie breaker and the YZ bus-tie breaker will be decommissioned. A new 27.6 kV, 2,000 A BY bus-tie breaker will be installed.

The proposed work will be completed in four stages with the first stage starting in June 2004. The final stage is expected to be completed before the end of 2004.

2.0 Assessment

2.1 Data Verification

The technical specifications of the new equipment associated the IMO-controlled grid are given below:

Transformers T1 & T2
Configuration – 3 phase
Transformation – 110/28 kV
Winding Configuration – HV wye, LV zigzag
Rating – 50/66.6/83.3 MVA
Positive Sequence Impedance – tap#1: 12.7%, tap#17: 12% & tap#33: 11.6%
On-load tap-changer – +/- 22 kV in +/- 16 equal steps; Minimum tap: 88 kV, Maximum tap: 132 kV

T1 High Voltage (HV) Transformer Disconnect Switch - T1-L
Type – Disconnect
Maximum Operating Voltage – 145 kV
Continuous Current Rating – 1,200 A

T1 & T3 HV Surge Arresters
Type – Zinc oxide
Voltage Rating – 108 kV
Class – Station

The existing summer 10-Day Limited Time Rating (LTR) transfer capacity of Tillsonburg is 111.8 MVA. The proposed transformer replacements will result in a summer 10-Day LTR of approximately of 116.2 MVA. The proposed project marginally increases the transfer capacity of the station. As a result, the new station has very little room to accommodate any future load growth in this load area. HONI has consulted with Hydro One Distribution and Tillsonburg PUC and neither party indicated to HONI significant future load growth will occur to warrant an increase in capacity. HONI has also indicated that station peak loads are not coincident with system demand peaks. Typically, peak loads at Tillsonburg occur in September due to the operation of tobacco drying kilns.

The proposed transformer replacements marginally increase the transfer capability of the station. If station peak loads increase significantly, HONI will need to increase the transfer capability of the station.

2.2 On-line Monitoring Requirements

The *Market Rules* (Chapter 4 section 7.4) require that each transmitter shall provide the IMO on a continual basis with on-line monitored quantities as specified in Appendix 4.16. For this proposed project, the IMO requires the status and operating quantities associated with transformers T1 and T3 on a continual basis.

2.3 Protection Requirements

With respect to the protection and telecommunication requirements, the HONI will have to follow the Transmission System Code technical requirements for transmission lines and transformer stations supplying load.

The new T1 and T3 transformers will be protected by duplicated differential protections. Group 'A' is consists of differential protection (Relay type 7UT-513 from Siemens) and external transformer gas and tap changer gas protections. Group 'B' is differential protection (Relay type SR-745 from GEPM).

There will be no changes to the W8T and T11T line protection settings and the Independent Phase Controlled Compensators (IPCC) at Tillsonburg. The existing autoreclosure settings will also remain unchanged.

2.4 Fault Level Assessment

The proposed transformer replacements will not change the fault levels on the 115 kV system.

2.5 Conclusions

The IMO has concluded that the proposed transformer replacement project at Tillsonburg TS will not have a negative effect on the reliability of the IMO-controlled grid.

3.0 IMO Requirements

The assessment concluded that HONI is required:

- To meet IMO's on-line monitoring requirements.
- To meet Transmission System Code requirements with respect to protection systems.

4.0 Notification of Approval

It is recommended that Notification of Approval be granted to HONI for the transformer replacements at Tillsonburg TS.

This Notification of Approval is subject to HONI meeting the requirements listed in Section 3.0 and those of the IMO facility registration process.