November 5, 2007

Mr. Herbert Haller
Vice-President - Engineering & Stations
Waterloo North Hydro Inc.
300 Northfield Drive East
Waterloo, Ontario
N2J 4A3

Dear Mr. Haller,

T1 & T2 Transformer Replacements at Rush MTS
Notification of Conditional Approval of Connection Proposal
CAA ID Number: 2006-EX314

Thank you for the detailed information regarding the replacement of the three phase transformers T1 & T2 at Rush MTS with new three phase transformers.

Since the ratings of the replacement units are the same or higher than the original transformers, we have concluded that the proposed change will not result in a material adverse effect on the reliability of the IESO-controlled grid.

The IESO is therefore pleased to grant **conditional approval** for the modification detailed in the attached assessment report subject to your signed acknowledgment below. Any material changes to your proposal may require re-assessment by the IESO in accordance with Market Manual 2.10, and may nullify your conditional approval.

Final approval to connect the facility to the IESO-controlled grid will be granted upon successful completion of the IESO Facility Registration process including, without limitation, satisfactory completion of the requirements set out in the System Impact Assessment report. During this process you shall demonstrate the requirements have been fulfilled and the equipment installed has characteristics no worse than those in the proposal assessed by the IESO. Please contact market.entry@ieso.ca if you have not received a Facility Registration Summary package within the next 10 days.

For further information, please contact the undersigned.

Yours truly

Michael Falvo
Manager - Transmission Assessments & Performance
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cc: IESO Records

Waterloo North Hydro Inc. acknowledges receipt of the System Impact Assessment Report setting out the IESO requirements for final approval, and commits to fulfill these requirements, and all other applicable Market Rules, before receiving final approval to connect to the IESO-controlled grid.

Dated:_____

Per:_____

Name:_____

Title:_____

ASSESSMENT SUMMARY

Waterloo North Hydro Inc.

1.0 GENERAL DESCRIPTION

Transformers T1 and T2 at Rush MTS were manufactured in 1961 and are scheduled to be replaced due to end-of-life. The transformers are connected to 115 kV circuits D10H and D8S.

The rest of the station (switchgear, protections, feeder cables, metering, SCADA, etc.) was upgraded in 1995 and is rated to 3000 A at 13.8 kV. The transformers will be replaced with slightly larger units to match the switchgear rating and to increase the capacity of the station.

The scheduled in-service date for the replacement transformers is before the summer peak in 2010.

2.0 PROPOSED MODIFICATION

A comparison of the technical specifications between the existing and replacement transformers is given below.

Rush MTS	**Original T1**	**Original T2**	**Replacement T1 & T2**
Configuration	three phase	three phase	three phase
Transformation (kV)	110 / 14.2	110 / 14.2	110 / 14.2
Winding Configuration	delta / wye	delta / wye	delta / wye
Thermal Rating	20.00 ONAN 26.67 ONAF 33.33 ONAF	20.00 ONAN 26.67 ONAF 33.33 ONAF	30 ONAN 50 ONAF
Continuous Thermal Rating (summer 30°C)	33.33 MVA	33.33 MVA	50 MVA
15 Minute Thermal Rating (summer 30°C)	Not applicable	Not applicable	Not applicable
10 Day Thermal Rating (summer 30°C)	41 MVA	41 MVA	71 MVA
Positive Sequence Impedance (H-X)	R = not available X = 13.6% on 33.3 MVA base	R = not available X = 13.6% on 33.3 MVA base	R = xx% X = 12.3 to 13.6% on 30 MVA base[1]
Impedance to Ground	Solidly grounded	Solidly grounded	Solidly grounded
Under-load tap-changer (ULTC)	14.2 ± 1.42 kV 16 steps	14.2 ± 1.42 kV 16 steps	14.2 ± 1.42 kV 16 steps
Off-load tap-changer (OLTC)	Tap 1 121.0 kV Tap 2 118.25 kV Tap 3 115.5 kV Tap 4 112.75 kV Tap 5 110.0 kV	Tap 1 121.0 kV Tap 2 118.25 kV Tap 3 115.5 kV Tap 4 112.75 kV Tap 5 110.0 kV	Tap 1 121.0 kV Tap 2 118.25 kV Tap 3 115.5 kV Tap 4 112.75 kV Tap 5 110.0 kV
In service off-load tap position	Tap 3	Tap 3	To be determined
Manufacturer	CGE	CGE	TBD
Serial #	284569	284568	TBD

[1] The positive sequence impedance values of 12.3 to 13.6% are the expected values of the replacement transformers which have not yet been ordered.

3.0 ASSESSMENT

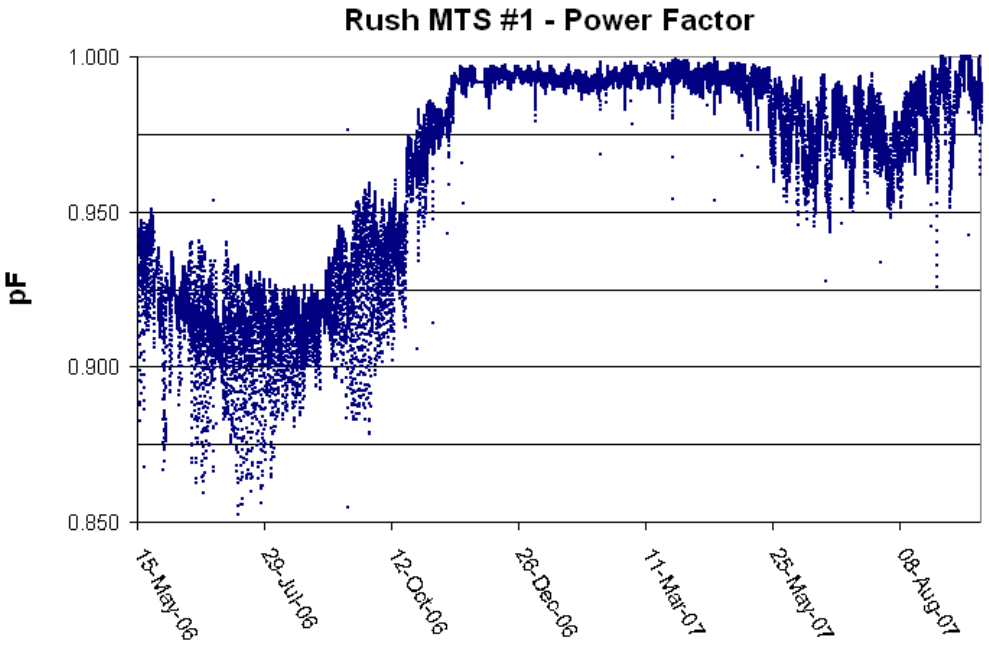
The summer peak load in 2006 was 36.9 MVA on August 1. The peak load in 2007 was 38.5 MVA on June 26. These values are slightly under the station LTR of 41 MVA in the summer.

The summer peak load is forecast by the IESO to climb to 59 MVA (extreme weather) by the in-service date of 2010 and to 64 MVA by 2015 as shown in the table below. While the actual load peaks have not yet exceeded the existing station LTR, the forecasts indicate that the load could exceed the existing station LTR as early as the summer of 2008.

Year	Forecast (Summer Peak Load - Extreme Weather)	Actual Peak Load
2006	44.0 MVA	36.9 MVA (August 1, 2006 @ 16:30)
2007	43.0 MVA	38.5 MVA (June 26, 2007 @ 18:30)
2008	44.0 MVA	n/a
2009	44.0 MVA	n/a
2010	59.0 MVA	n/a
2011	59.0 MVA	n/a
2012	63.0 MVA	n/a
2013	63.0 MVA	n/a
2014	64.0 MVA	n/a

Table 1: Peak Loads

Waterloo North Hydro Inc. has recently installed approximately 20 MX of capacitors on the 13.8 kV distribution system to ensure that power factor levels remain above 0.90 as required by the Market Rules. The power factor values can be seen in the graph below.



Graph 1: Power Factor

The information provided by Waterloo North Hydro Inc. shows that the technical characteristics of the replacement transformers are better than those of the end-of-life transformers. The new units will have the same configuration and transformation and identical ULTC and OLTC arrangements. Thermal ratings for the replacement transformers will be higher than the existing units. The positive sequence impedance is not yet known but will be specified to be similar to the existing units.

4.0 CONCLUSIONS

It can be concluded that the replacement transformers will not result in a material adverse effect on the reliability of the IESO-controlled grid because:

- The impedances of the replacement transformers will be similar to the old transformers.
- The replacement transformers will be equipped with ULTCs and OLTCs that are identical to the old transformers' ULTCs and OLTCs.

5.0 REQUIREMENTS

Some recognized contingencies (e.g. load shedding, open line end) can cause a temporary voltage increase above the maximum continuous voltage of 115 kV. For these conditions, connection equipment may be exposed to voltages slightly above its maximum continuous rating for the short period of time that it takes the IESO to direct operations to restore a normal voltage profile, and to prepare for the next contingency. This re preparation period will be as short as possible, but it will not take longer than 30 minutes. Therefore, the IESO requires that the 115 kV connection equipment have the following requirements:

- connection equipment must have a maximum continuous voltage rating of at least 127 kV in southern Ontario; and
- equipment must remain in service, and not automatically trip, for voltages up to 5% above the maximum continuous rating (133.4 kV), for up to 30 minutes, to allow the system to be re-dispatched to return voltages within their normal range.

Waterloo North Hydro Inc. must submit the actual technical specifications of the replacement transformers at least 2 months prior to removing the existing transformers from service. Please submit this information to market.entry@ieso.ca.

Waterloo North Hydro Inc. must notify the IESO as soon as it becomes aware of any changes to the assumptions made in the connection assessment. The IESO will determine whether these changes require a re-assessment.

Waterloo North Hydro Inc. is required to meet the distributor's requirements with respect to protection systems for the new transformers and coordination with the existing protection systems, as outlined in the Transmission System Code.

The Market rules (Chapter 4 section 7.4) require that each distributor shall provide the IESO on a continual basis with on-line monitored quantities as specified in Appendix 4.16. For this proposed project, the IESO will require the operating quantities associated with the new transformers.

6.0 NOTIFICATION OF CONDITIONAL APPROVAL

This expedited System Impact Assessment concludes that the installation of replacement transformers for the existing transformers T1 and T2 is not expected to have a material adverse effect on the IESO-controlled grid. It is therefore recommended that a Notification of Conditional Approval of the Connection Proposal be issued, subject to the requirements detailed above.

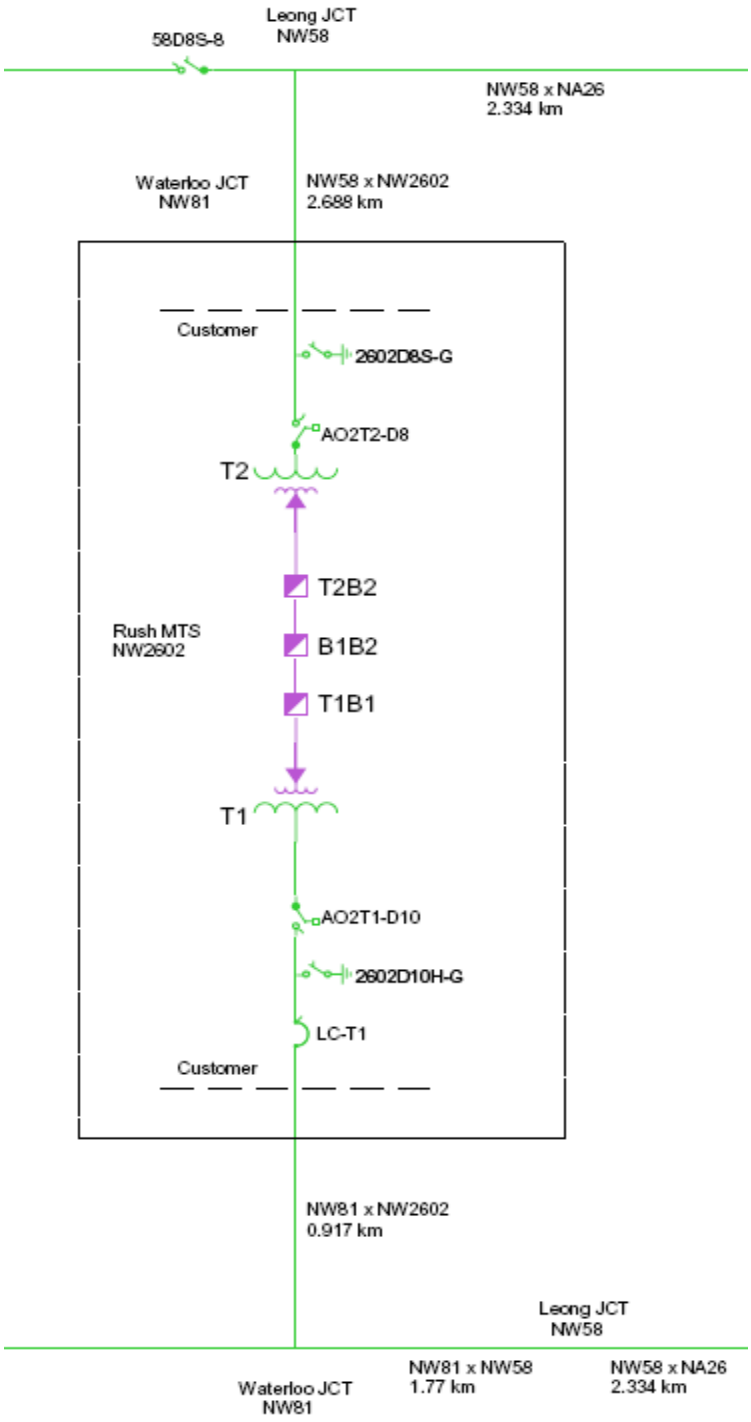


Figure 1: Rush MTS