

May 22, 2009

Ms. Dorothy Moryc  
Stations and Planning, Engineering Supervisor  
Waterloo North Hydro Inc.  
300 Northfield Drive East  
Waterloo, Ontario  
N2J 4A3

Dear Ms. Moryc

***Protection Changes at Scheifele A MTS  
Notification of Final Approval of Connection Proposal  
CAA ID Number: 2009-EX439***

Thank you for the detailed information regarding the protection changes at Scheifele "A" MTS.

We have concluded that the proposed changes will not result in a material adverse impact on the reliability of the integrated power system. The proposed protection changes are acceptable to the IESO unless the transmitter, Hydro One, has any other concerns.

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

For further information, please contact the undersigned.

Yours truly

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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**

### **1.0 GENERAL DESCRIPTION & PROPOSED MODIFICATIONS**

Scheifele MTS is a double DESN type municipal transformer station (MTS) supplied by the 230 kV circuits D6V and D7V between Detweiler TS and Orangeville TS. Waterloo North Hydro is upgrading the protection system for the Scheifele "A" MTS which consists of transformers T1 and T2 rated at 30/40/50 MVA and 220/14.2 kV.

Electromechanical relays are being replaced with new electronic relays. This work is scheduled to be completed by May 29, 2009.

There will be no changes to the protection philosophy or trip matrix.

### **2.0 TECHNICAL SPECIFICATIONS**

The new transformer protection scheme will use A and B transformer differential systems plus a high side backup overcurrent to replace the existing single differential with a backup overcurrent.

New backup line protection will use line distance relays to replace the existing reverse overcurrent.

The remote trip circuitry will not be changed at this time as it is physically located in the Scheifele "B" building. The circuitry will be upgraded when the Scheifele "B" protection system is upgraded.

### **3.0 REQUIREMENTS**

The proponent 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.

New protection systems must be coordinated with existing protection systems and must be designed to satisfy the requirements of the Transmission System Code (TSC). Facilities designated as essential to power system reliability must be protected by two redundant protection systems according to section 8.2.1a of the TSC. These redundant protection systems must satisfy all requirements of the TSC but in particular they may not use common components, common battery banks or common secondary CT or PT windings.

As currently assessed, this facility is not designated as essential to power system reliability and therefore the above requirements do not apply. In the future, as the electrical system evolves, this facility may be designated as such and at that time the above requirements will apply.

Provided that the TSC requirements are satisfied, the IESO does not have additional requirements.

### **4.0 ASSESSMENT & CONCLUSIONS**

This expedited System Impact Assessment concludes that the above detailed protection changes are not expected to have a material adverse impact on the IESO-controlled grid.

The proposed protection changes are acceptable to the IESO unless the transmitter, Hydro One, has any other concerns.

### **5.0 NOTIFICATION OF FINAL APPROVAL**

It is therefore recommended that a Notification of Final Approval of the Connection Proposal be issued, subject to the requirements detailed above.