May 6, 2013

Mr. Jim Smith
Maintenance Service Coordinator
Enbridge Pipelines Inc.
1430 6th Concession Rd. West, RR#2 Branchton
Westover, ON
N0B 1L0

ieso
Power to Ontario.
On Demand.
Station A, Box 4474
Toronto, ON
M5W 4E5

Dear Mr. Smith:

Westover South CTS Circuit Switcher Replacement
Notification of Conditional Approval of Connection Proposal
CAA ID Number: 2013-EX653

Thank you for the information regarding the replacement of the circuit switcher T2-L at Westover South CTS. The IESO has concluded that the proposed changes will not result in a material adverse impact on the reliability of the integrated power system. The IESO is therefore pleased to grant **conditional approval** for the modifications detailed in the attached expedited System Impact Assessment report. Please note that any material changes to your proposal may require a re-assessment by the IESO, and may nullify your conditional approval.

You may now initiate the IESO's **Facility Registration/Market Entry** process. To do so, please contact Registration & Compliance Support at market.entry@ieso.ca as soon as possible prior to your expected energization date. The SIA report, attached hereto, details the requirements that your company must fulfill during this process, including demonstrating that the equipment *as installed* will not be materially different from the equipment *as approved* by the IESO. The document entitled **Market Entry: A Step-by-Step Guide** describes the key steps in the Market Entry process.

When your company has successfully completed the IESO's **Facility Registration/Market Entry** process, the IESO will provide you with a **final approval**, thereby confirming that the equipment is fully authorized to connect to the IESO-controlled grid.

For further information, please contact me via connection.assessments@ieso.ca.

Yours truly,

Michael Falvo
Manager – Market Facilitation
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Final Report - Expedited System Impact Assessment
Enbridge Pipelines Inc.

1.0 GENERAL DESCRIPTION & PROPOSED MODIFICATIONS

Enbridge Pipelines Inc. is planning to replace the HV circuit switcher TX-1-CSW (T2-L) at Westover South CTS due to end-of-life. In addition, a HV disconnect switch and HV fuses will be added upstream of the circuit switcher. The circuit switcher will open to clear faults.

Westover South CTS is connected to the 115 kV circuit B5G out of Burlington TS.

The proposed in-service date is November 2013.

The technical specifications of the replacement circuit switcher TX-1-CSW and the new disconnect switch are given in Table 1 and Table 2 below.

Westover South CTS TX-1-CSW Circuit Switcher Specifications	
	Replacement
Configuration	3 phase
Maximum Continuous Rated Voltage (kV)	145
Continuous Current Rating (A)	1200
Short Circuit Symmetrical Duty (kA)	40 kA

Table 1 – Specifications of new circuit switcher at Westover South CTS

Westover South CTS TX-1-TS Disconnect Switch Specifications	
	Replacement
Configuration	3 phase
Maximum Continuous Rated Voltage (kV)	145
Continuous Current Rating (A)	1200

Table 2 – Specifications of new disconnect switch at Westover South CTS

2.0 TECHNICAL ASSESSMENT

This expedited System Impact Assessment concludes that the installation of the replacement circuit switcher and the new disconnect switch at Westover South CTS is not expected to have a material adverse impact on the IESO-controlled grid provided that all requirements in this report are met.

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.

Voltage Requirements

Appendix 4.1 of the Market Rules states that under normal operating conditions, the voltages in the 115 kV system in southern Ontario are maintained within the range of 113 kV to 127 kV. Thus, the IESO requires that the 115 kV equipment in southern Ontario must have a maximum continuous voltage rating of at least 127 kV.

Protective relaying must be set to ensure that transmission equipment remains in-service for voltages between 94% of the minimum continuous value and 105% of the maximum continuous value specified in Appendix 4.1of the Market Rules.

Fault Levels

The Transmission System Code requires the new equipment to be designed to withstand the fault levels in the area where the equipment is installed. Thus, the connection applicant shall ensure that the new equipment at the facility is designed to withstand the fault levels in the area. Appendix 2 of the Transmission System Code establishes the maximum fault levels for the transmission system. For the 115 kV system, the maximum 3 phase and single line to ground symmetrical fault levels are 50 kA.

The interrupting capability of the proposed circuit switcher is less than 50 kA, but is adequate for the short circuit levels of about 39.25 kA existing in the area. If any future system changes result in an increased fault level higher than the equipment's capability, the connection applicant is required to replace the equipment with higher rated equipment capable of withstanding the increased fault level, up to maximum fault level specified in the Transmission System Code.

IESO Monitoring Requirements

In accordance with Section 7.5 of Chapter 4 of the Market Rules, the connection applicant shall provide to the IESO the applicable telemetry data listed in Appendix 4.17 of the Market Rules on a continual basis. The data shall be provided in accordance with the performance standards set forth in Appendix 4.22, subject to Section 7.6A of Chapter 4 of the Market Rules. For this proposed project, the IESO will continue to require the status of the replacement circuit switcher as well as the status of the new disconnect switch.

Protection Requirements

The connection applicant shall ensure that the protection systems are designed to satisfy all the requirements of the Transmission System Code as specified in Schedules E, F and G of Appendix 1 and any additional requirements identified by the transmitter. New protection systems must be coordinated with the existing protection systems.

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