



May 18, 2004

Mr. Bing Young
Manager, Transmission System Development
Investment Planning Division
Hydro One
483 Bay Street
Toronto, Ontario, M5G 2P5

Dear Mr. Young:

W6MC In-line Breaker and C7BM In-line Motorized Disconnect Switch

Notification of Approval of Connection Proposal

CAA ID Number: 2003-EX148

Thank you for the detailed information on the plan for installing two new in-line disconnection devices on 115 kV circuits W6MC and C7BM in the Ottawa zone. The assessment report together with the new equipment specifications is attached.

The connection assessment that you requested is now complete and the IMO is pleased to grant **conditional approval** of your proposed connection to the IMO-controlled grid. 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 to connect to the IMO-controlled grid will be granted upon successful completion of the IMO Facility Registration process. During facility registration you will be expected to demonstrate that you have fulfilled the requirements in your System Impact Assessment and 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 this Notification of Approval will be posted on the IMO web site: www.theimo.com.

In order to ensure that your Project is being accurately represented in our system models for future Assessments, we may require evidence regarding the current status of the Project. Should this be necessary, then we will contact you at the appropriate time.

For further information, please contact the undersigned.

Yours truly,

Bob Gibbons

Manager – Long Term Forecasts & Assessments

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cc: IMO BIRM

All information submitted in this process will be used by the IMO solely in support of its obligations under the *Electricity Act, 1998*, the *Ontario Energy Board Act, 1998*, the *Market Rules* and associated policies, standards and procedures and in accordance with its licence. All information submitted will be assigned the appropriate confidentiality level upon receipt.

Assessment Report

1.0 Project Description

As a result of outage incidents that took considerable time to restore and disrupted supply to customers, Hydro One Networks Inc. (HONI) has submitted an application for the installation of two new in-line disconnection devices in the Ottawa zone as follows:

- One in-line 115 kV breaker, located near South March Transformer Station (TS), on circuit W6MC west of Marchwood TS,
- One in-line motorized 115 kV line disconnect on circuit C7BM west of NQL1 Junction. The new line disconnect replaces the existing 115 kV line disconnect L1C7BM-1.

The new devices will permit the isolation of faulted line sections while maintaining the supply to unaffected loads, as is the case of W6MC breaker, or providing for quick restoration of load, in the case of the disconnect switch. This will improve the reliability of supply for customers in the western part of Ottawa, including the Kanata area.

The locations of the new equipment are shown in Figure 1. At this time, the operating designations of the new in-line breaker on circuit W6MC and the two line sections on either side of the new breaker are unknown.

The in-service date for these devices is October 2004.

2.0 Equipment Specifications

The W6MC in-line breaker specifications are:

- Type – SF6
- Maximum operating voltage – 145 kV
- Rated interrupting time – 3 cycles (50 ms)
- Continuous current rating – 2000 A
- Short circuit symmetrical duty – 40 kA

The C7BM in-line motorized disconnect switch specifications are:

- Type – disconnect
- Maximum operating voltage – 169 kV
- Continuous current rating – 1200 A

3.0 Assessment

The two 115 kV circuits C7BM and W6MC are single circuit lines about 125 km and 80 km respectively. Both lines are used to deliver power from Barrett Chute GS and Stewartville GS into Merivale TS in the western part of Ottawa area. The circuits also supply a number of loads around Kanata and west Ottawa areas just a few km from Merivale TS, serving about 206 MW of winter peak load.

The specifications of the new 115 kV breaker would be adequate for the current system. However, it does not comply with the Transmission System Code requirement of having maximum fault interrupting capability of 50 kA for 115 kV breakers. Should a third party initiate a development that

increases the fault level in this area beyond the capability of the replacement breaker, then HONI would be expected to bear the cost of having to replace the breaker again.

The current functionality of the Stewartville generation rejection (G/R) scheme must be retained. In particular, the scheme includes G/R for faults on circuit W6MC. The installation of a new in-line breaker on W6MC will require both line sections on either side of the breaker to participate in the G/R scheme. The Stewartville G/R scheme must be revised and modified accordingly.

4.0 Conclusions

It was concluded that:

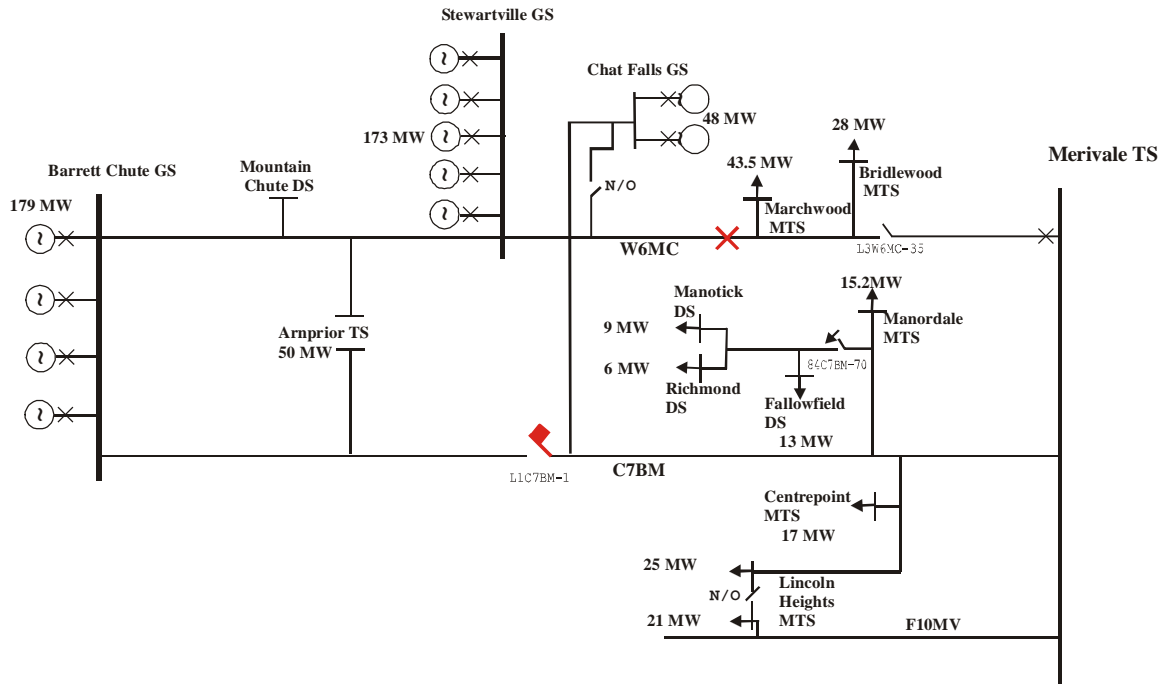
- a system impact study is not required to assess the impact of the proposed devices on the reliability of the IMO-controlled grid,
- the W6MC in-line breaker will improve the reliability of supply to loads the western part of Ottawa and
- the C7BM in line disconnect switch will allow for fast restoration of service to loads connected on the unfaulted line-section.

5.0 IMO Requirements

It is required that:

- HONI design all new or modified protection systems in accordance with the applicable standards and submit complete information on all new or modified protection system settings to the IMO as soon as it becomes available. It should be noted that the protection systems data, including autoreclosure settings, is required for the facility registration process.
- HONI replace the in-line breaker installed on circuit W6MC to comply with the Transmission System Code if additional developments in the area result in fault levels exceeding 40 kA.
- HONI retain the current functionality of the Stewartville generation rejection scheme for faults involving circuit W6MC.

Figure 1



Proposed In-line Breaker and Disconnect Switch

W6MC Winter Peak Load = 96 MW

C7BM Winter Peak Load = 110 MW