

May 10, 2005

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

Dear Mr. Dave Abbott:

***Bruce T6-B Transformer Replacement
Notification of Approval of Connection Proposal
CAA ID Number: 2005-EX232***

Thank you for the detailed information that you provided on the replacement of the single phase transformer T6-B that failed recently at Bruce B GS.

The assessment concluded that the proposed project is a like-for-like replacement and 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 the Replacement of Bruce T6-B

1.0 Description of Proposal

Bruce B step-up transformer T6 Blue phase was permanently lost due to explosive damage. Bruce Power is proposing to replace the failed unit with a spare unit that is available on site.

The proposed work will be started in mid- October and it is scheduled for completion during May 2005.

2.0 Assessment

2.1 Data Verification

A comparison between the technical specifications of the exiting and the new single-phase transformer is given below.

New Transformers T6 - Blue

Configuration – single phase

Transformation – 303.1/22.8 kV

Winding Configuration – HV wye, LV delta

Thermal Rating – 291.7 MVA (OFAF)

Summer Continuous Rating – 317.95 MVA

Positive Sequence Impedance – R = 0.16 %, X= 13.26% on 275 MVA

Off-load tap-changer – 317.5 kV, 310 kV, 303.1 kV, 295.9 kV, 288.7 kV

In-service off-load tap position – 303.1/22.8 kV

Failed Transformers T6 - Blue

Configuration – single phase

Transformation – 303.1/22.8 kV

Winding Configuration – HV wye, LV delta

Thermal Rating – 291.7 MVA (OFAF)

Summer Continuous Rating – 317.95 MVA

Positive Sequence Impedance – R = 0.172 %, X= 13.06% on 275 MVA

Off-load tap-changer – 317.5 kV, 310 kV, 303.1 kV, 295.9 kV, 288.7 kV

In-service off-load tap position – 303.1/22.8 kV

It can be concluded that the new transformer will not have an adverse impact on the reliability of the IMO-controlled grid because:

- The new and the old units have the same winding configuration and thermal rating.
- The impedance of the new unit is different than the impedance of the failed unit, but the difference is considered to be immaterial.
- The new transformer is also to be equipped with off-load tap changer with positions that are equivalent to the old unit.
- The in-service off-load tap position is identical to the position used in the failed unit.

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 will continue to require the status and operating quantities associated with T6 transformer on a continual basis.

3.0 Protection Requirements

With respect to the protection and telecommunication requirements, Bruce Power will have to follow the Transmission System Code technical requirements for generation step-up transformer.

4.0 Fault Level Assessment

The proposed transformer replacement will not change the fault levels on the system.

5.0 Conclusions

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

6.0 IMO Requirements

The assessment concluded that Bruce Power is required:

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

7.0 Notification of Approval

It is recommended that Notification of Approval be granted to Bruce Power for the replacement of the blue phase of the three single phase step-up transformer T6 at Bruce B.

This Notification of Approval is subject to Bruce Power meeting the requirements listed in Section 6.0 and those of the IMO facility registration process.