

May 13, 2011

Keith Foster
Major Maintenance – Eastern Gas
2740 Derry Road East, Mississauga ON
L4T 4J5

Dear Mr. Foster:

RE: TransAlta Douglas

Notification of Conditional Approval of Connection Proposal

CAA ID Number: 2011-EX527

The IESO has now had an opportunity to review and assess your company's proposed connection of the upgraded governor controls and replacement AVR's at TransAlta Douglas as described in your System Impact Assessment application. The IESO has concluded that the proposed connection 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 as detailed in the attached System Impact Assessment report. Please note that any further material change to your proposed connection may require a re-assessment by the IESO and may result in a nullification of the conditional approval.

You may now initiate the IESO's "Market Entry" process. To do so, please contact Market Entry at market.entry@ieso.ca as soon as possible. The SIA report, attached hereto, details the requirements that your company must fulfill during this process, including demonstrating that the facility *as installed* will not be materially different from the facility *as approved* by the IESO. The document entitled "**External Guidelines for Connection to the IESO**" provided in the approval email 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 facility is fully authorized to connect to the IESO-controlled grid.

If you have any questions or require further information, please contact me.

Yours truly,

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Manager – Market Facilitation
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cc: IESO Records

All information submitted in this process will be used by the IESO 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.

IESO EXPEDITED SYSTEM IMPACT ASSESSMENT – 2011-EX527

1. Project Description

TransAlta (TA) intends to upgrade the governor and excitation system controls at their TA Douglas generating station embedded at Bramalea TS.

TA Douglas is proposing the replacement of the existing Brush Modular Automatic Voltage Regulators on units GE-101, GE-102 and GE-103 with new Automatic Voltage Regulators. The excitation system and power components will be unaffected by this change.

TA Douglas is also proposing changes to governor controls by replacing the existing NETCON 5000 Turbine Controllers with MicroNet Plus Turbine Controllers for units GE-101 and GE102; and by replacing the existing ABB Analog Control system on unit GE-103 with a 800xA based control system.

The first outage for the upgrade is scheduled for late May 2011 with the remainder of the work scheduled to be completed at a yet to be determined date in the fall.

2. Equipment Requirements

The TA Douglas facility is comprised of three generating units each larger than 10 MW, making it subject to requirements 1 to 3 of Appendix 4.2 of the Market Rules. In particular, with regards to the governor control upgrades, TA Douglas will need to fulfill requirement 2, Speed and Frequency Regulation:

Regulate speed with an average droop based on maximum active power adjustable between 3% and 7% and set at 4% unless otherwise specified by the IESO. Regulation deadband shall not be wider than $\pm 0.06\%$. Speed shall be controlled in a stable fashion in both interconnected and island operation. A sustained 10% change of rated active power after 10s in response to a constant rate of change of speed of 0.1%/s during interconnected operation shall be achievable. Due consideration will be given to inherent limitations such as mill points and gate limits when evaluation active power changes. Control systems that inhibit governor response shall not be enabled without IESO approval.

For the AVR replacement, the IESO only requires the preservation of the existing capability.

3. Validation

As the governor control models are not currently available, performance will be validated during commissioning tests.

4. Conclusions and Requirements

This assessment concluded that the proposed TA Douglas AVR upgrades will not have an adverse impact on the reliability of the IESO-controlled grid.

This assessment also concluded that, given the speed and frequency regulation requirements outlined in the market rules are met, upon successful completion of the commissioning tests, the

governor control upgrades will not have an adverse impact on the reliability of the IESO-controlled grid.

During the Market Entry process, the applicant is required to update the data and models of TA Douglas generators based on the latest field testing results.

5. Notification of Approval

It is therefore recommended that a Notification of Conditional Approval of the Connection Proposal be issued to the applicant.