

April 1, 2008

Mr. Dave Abbott, P. Eng.
Production Coordinator
Power Marketing
Bruce Power

Dear Mr. Abbott:

***Bruce NGS B Units 5-8 Exciter Replacements
Revised Notification of Approval of Connection Proposal
CAA ID Number: 2006-EX294***

Thank you for the revised information regarding the end-of-life replacements of the excitation systems on Bruce NGS B units 5-8 to improve equipment reliability.

From the new information provided, our review concludes that the new excitation systems on Bruce NGS B units 5 to 8 will not have a material adverse effect on the reliability of the IESO-controlled grid. The IESO is therefore pleased to grant conditional approval for the proposed installations subject to your signed acknowledgement below. Any material changes to your proposal may require re-assessment by the IESO in accordance with Market Manual 2.10, and may nullify your conditional approval.

Final approval will be granted upon successful completion of the IESO Facility Registration process. During facility registration you will be expected to demonstrate that you have fulfilled the requirements and the modification is in line with the proposal assessed by the IESO. Please contact market.entry@ieso.ca if you have not received a Facility Registration Summary package within the next 10 days.

For further information, please contact the undersigned.

Yours truly,

Michael Falvo
Manager - Transmission Assessments & Performance
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cc: IESO Record

Bruce Power 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: _____

1.0 Introduction

This addendum updates the expedited System Impact Assessment ([CAA ID 2006-EX294](#)) originally issued in November 2006.

2.0 General Description

Bruce Power is replacing the end-of-life static excitation systems on Bruce NGS B units 5-8 with new GE EX2100 dual master control three bridge excitation systems. The A and B (main and backup) excitation systems described in the original assessment are not part of the new excitation systems being installed on units 5 to 8 at Bruce NGS B.

The scheduled in-service dates for these replacement excitations systems have been updated as follows:

- Unit 8 - in-service as of November 2006
- Unit 6 - in-service as of April 2007
- Unit 7 - March 2008
- Unit 5 - May 2008

3.0 Proposed Modification

The new single exciter configuration will preserve original twin excitation system capabilities. Commissioning tests performed on Units 6 and 8 show the new excitation systems not only meet IESO performance requirements but preserve the like-for-like performance proposed in the original connection application.

The new excitation systems will not increase the risk that a credible contingency can result in the simultaneous loss of more than one Bruce B unit. For example, the new excitation systems will be connected to the 13.8 kV system at Bruce B in a manner so that the clearing of the fault on any single element will not trip or diminish the capabilities of more than one unit's excitation system.

Bruce Power expects the new configuration to be as reliable as the original configuration. The new excitation system has a Triple Modular Redundant (TMR) control module. The control module is divided into three independently powered control sections. The control section designation is M1 (Master One), M2 (Master Two), and C (Control). M1 and M2 are independent controls, each with automatic and manual regulator functions. Either M1 or M2 may be in control of bridge firing as determined by the operator, or forced by control section C. Master Control Monitor C determines if a master transfer should occur. With this redundant configuration, the exciter can continue to operate with a failed Master that is out of service. Unlike the original twin excitation system that had dual independent speed inputs for the stabilizer, the loss of the single current input in the new excitation will disable the stabilizing function. The IESO will account for this possible loss of the stabilizing function in its limit derivation process.

Note

Please refer to the original System Impact Assessment report for the assessment details of the models and parameters of the new equipment