

DECISION OF THE INDEPENDENT PANEL - Application Nos. 01-1023 and 01-1057

Exemption Applications: Application Nos. 01-1023 and 01-1057 made by Ontario Power Generation Inc. ("OPG").

Panel Hearing the Applications: Glenna Carr and Carl Anderson.

Date Applications Heard: August 15, 2002.

Market Rules from which Exemptions are Requested: Baseline 5.0, Reference 16 of Appendix 4.2, Chapter 4 of the Market Rules.

Decision: The exemptions are granted on conditions.

Effective Date of the Exemptions: February 5, 2001, the date the exemption applications were received.

Conditions of the Exemptions: By the end of 2002, the IMO and OPG shall jointly develop and agree upon an operating procedure that will include manual processes for controlling the reactor production and electrical output of the Darlington and Pickering B units in over-generated island situations.

Term of the Exemptions: Lifetime of the equipment.

Reconsideration of the Exemptions: The exemptions should be reconsidered in the event the turbine-reactor control systems for the Darlington or Pickering B units are replaced.

Transfer: Approval to transfer the exemptions may be given if the following criteria are met:

- The transfer meets applicable terms and conditions set forth in the exemptions and the transfer would not affect the ability of the proposed transferee to comply with all of the terms and conditions of the exemptions;
- The proposed transferee is a market participant or undertakes in writing to the IMO to apply for authorization as a market participant; and
- The transfer of the exemptions will not materially impact the timely implementation of the plan to become compliant with the exempted obligation.

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Reasons of the Panel:

These exemptions were heard together with two related Bruce Power exemption applications (Exemption Application Nos. 01-1015 and 01-1035). In rendering our decision, we have considered OPG's Exemption Applications, IMO Staff's Recommendations, the applicable Market Rules and the Exemption Application and Assessment Procedure.

OPG is a generator. It seeks an exemption for its Darlington and Pickering B nuclear units from the requirements of Reference 16, Appendix 4.2, Chapter 4 of the Market Rules, which requires generation facilities to automatically disable control systems that inhibit governor response during frequency deviations greater than 100 mHz (0.1 Hz) above the normal system frequency of 60 Hz.

At present, OPG's Darlington and Pickering B nuclear units do not comply with the requirements of Reference 16 of Appendix 4.2. During "over-generated island" conditions, the units' control systems inhibit governor response during frequency deviations greater than 100 mHz above the normal system frequency of 60 Hz. An over-generated island condition occurs when an electrical disturbance causes the power system to separate into sections (called electrical islands) and the generation contained in a section exceeds the load to be supplied to the section.

The reason the units do not comply is that they operate under the "reactor leading" mode (turbine power adjusted to follow a reactor power change). The reactor-leading mode automatically matches the electrical output of the turbine/generator to the power being produced by the reactor. In an over-generated island condition, the generators will initially respond to the governor signal to reduce electrical output in order to reduce the frequency of the electrical island. However, the boiler pressure control system will eventually override the governor in order to restore the electrical output of the turbine/generator so that it matches the power being produced by the reactor. This drives up the frequency of the electrical island.

OPG says that in order to comply fully with Reference 16 of Appendix 4.2, it would have to convert the units from reactor leading mode to a different mode of operation. OPG says conversion to a different mode would result in a small reduction in plant output and a small variation in reactor power. OPG says these variations would result in less stable reactor operation and could degrade system reliability.

OPG says that the Darlington units have operated in this condition for 10 years and the Pickering B units have operated in this condition for 20 years. OPG says that over-generated island conditions can be addressed through manual power reductions at the direction of the IMO. Therefore, OPG says that granting exemptions would not threaten the ability of the IMO to direct operations or maintain the reliability of the IMO-controlled grid.

IMO Staff recommends that the exemptions be granted on the condition that the IMO and OPG develop and agree upon a procedure for manually controlling reactor production

