
Exemption Application

FOR IESO USE ONLY

Exemption ID #: 1315-R1

Date Received: May 25, 2011

Submit this form by e-mail to: exemptions@ieso.ca

Subject: Exemption Application

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 its licence. All submitted information will be assigned the appropriate confidentiality level upon receipt.

Terms and acronyms used in this Form that are italicized have the meanings ascribed thereto in Chapter 11 of the *market rules*.

PART 1 – EXEMPTION APPLICANT - GENERAL INFORMATION

Organization Name: Ontario Power Generation Inc.

Market Participant/Metering Service Provider No. IESO Help Centre (IHC) Ticket No.
(if applicable): 102200 (if applicable): _____

Date: 22nd November, 2010

Address: 700 University Avenue

City/Town: Toronto Province/State: Ontario

Postal/Zip Code: M5G 1X6 Country: Canada

Fax No.: n/a

Email Address: n/a

Main Contact

Name: Confidential Information Withheld

Telephone No.: Confidential Information Fax No.: Confidential Information

E-mail Address: Confidential Information Withheld

Web Site (URL): n/a

PART 1 – EXEMPTION APPLICANT - GENERAL INFORMATION

Alternative Contact

Name: Confidential Information Withheld

Telephone No.: _____ Fax No.: _____

E-mail Address: Confidential Information Withheld

PART 2 – INFORMATION ABOUT THE EXEMPTION APPLICATION

1. Is this *exemption application* being submitted for existing *facilities* or equipment prior to *market commencement date* pursuant to Section 1.5.1 of the *Exemption Application* and Assessment Procedure?

☐ Yes ☒ No

2. Please specify the duration for which you would like the *exemption* granted in days, months or years:

Life of the equipment and any replacement components

Please cite the *Market Rules* section number(s) to which this *Exemption Application* relates:

Please cite policy, standard or procedure to which this *Exemption Application* relates (including section number(s)):

Chapter 4, Section 3.1.1 (Appendix 4.1)

☒ The *exemption applicant* does not request an interim *exemption* pursuant to Section 1.6.2 of the *Exemption Application* and Assessment Procedure.

OR

☐ The *exemption applicant* requests an interim *exemption* pursuant to Section 1.6.2 of the *Exemption Application* and Assessment Procedure staying the *exemption applicant's* obligation to comply with the following *Market Rules* Section Number(s) pending the Panel's final decision.

Attach an *exemption applicant's* plan detailing:

- The manner and time within which the *exemption applicant* will become compliant;
- The manner in which the *exemption applicant* proposes to modify its equipment or *facilities* or otherwise conduct its operations during the period of time for which the *exemption* would be in effect; and
- The *exemption applicant's* estimate of any costs that may be imposed on the *IESO* or on other *Market Participants*, if the *exemption* were granted.

PART 4 – SUBMISSIONS IN SUPPORT OF EXEMPTION APPLICATION

The following submissions must be included, either below or as attachments:

- a) For *exemption applications* submitted prior to market opening for *facilities/equipment* in operation before or on April 17, 2000 and relating to the technical requirements of *Market Rules* contained in Appendix 2.2 (other than those for participant workstations or *dispatch workstations*), Chapter 4 (other than Sections 6.1.5 to 6.1.21), or the technical requirements set forth in Section 12 of Chapter 5:
- The *exemption applicant's* assessment as to whether or not the *exemption*, if granted would materially:
 - Impact the ability of the *IESO* to direct the operations and maintain the *reliability* of the *IESO-controlled grid*;
 - Affect the ability of the *IESO* to operate the *IESO-administered markets* in an efficient, competitive and reliable manner.
 - The *exemption applicant's* assessment of whether the cost or delay to the *exemption applicant* of complying with the obligation or standard to which the *exemption application* relates is reasonable, having regard to the nature of the obligation or standard, the nature of the *exemption application* and the anticipated impact of non-compliance by the *exemption applicant* in terms of the elements referred to above.
- b) Additionally, for all other *exemption applications*:
- The *exemption applicant's* assessment as to whether or not the *exemption*, if granted would materially:
 - Impact the ability of the *IESO* to ensure non-discriminatory access to the *IESO-controlled grid*;
 - Increase costs of *market participants*; or
 - Increase costs of the *IESO*;
 - An assessment of whether the *exemption* would, if granted, give the *exemption applicant* an undue preference in the *IESO-administered markets*;
 - Where the *exemption applicant* is the *IESO*, identification of the benefit to *Market Participants* of compliance with the obligation or standard to which the *exemption application* relates relative to the financial and other resources required to achieve compliance within such deadlines as may be applicable;
 - Where the *exemption applicant* is the *IESO*, the manner in which it proposes to operate the *IESO-administered markets* or direct the operations and maintain the *reliability* of the *IESO-controlled grid* during the period in which the *exemption* would be in effect;
 - Identification as to whether the *facility* or equipment that is the subject-matter of the *exemption application*:
 - Was in service or was returned to service on the date on which the obligation or standard to which the *exemption application* relates came into force;
 - Was ordered by the *exemption applicant* on or prior to the date on which the obligation or standard to which the *exemption application* relates came into force; or

PART 4 – SUBMISSIONS IN SUPPORT OF EXEMPTION APPLICATION

- Was in the process of construction on or prior to the date on which the obligation or standard to which the *exemption application* relates came into force, and;
 - An assessment of the capability of the owner of the *facility* to operate the *facility* consistent with the terms of the proposed *exemption*.
- c) Additionally, for *exemption applications* requesting an interlocutory *interim exemption* pursuant to Section 1.6.2 of the *Exemption Application* and Assessment Procedure:
- The *exemption applicant's* reasons for requesting an interim *exemption*, including the *exemption applicant's* assessment regarding:
 - The type and degree of harm the *exemption applicant* will suffer if the interim *exemption* is not granted; and
 - how the interim *exemption* would impact the public interest.

EXEMPTION APPLICANT'S PLAN

Chapter 4, Section 3.1.1 of the market rules require all equipment connected to the IESO-controlled grid to meet the minimum performance standards set out in Appendix 4.1. Appendix 4.1 specifies that under normal operation conditions the voltage of the IESO-controlled grid is maintained within a range of 220 kV to 250 kV. OPG's Pickering B NGS cannot operate reliably when the grid voltage is below 222 kV, and seeks an exemption for the remaining life of all units from the requirement to operate the Pickering B NGS units down to the lower grid voltage (at the Pickering B NGS switchyard).

Pickering B NGS was in service prior to the date that the IESO-administered market opened and the IESO Market Rules came into force. Prior to market opening, the technical evaluation of the lower limit of 226 kV grid voltage at the Pickering B NGS switchyard was managed by the System Operators by enforcing an operating security limit for the Cherrywood area of 238 kV. Simulations of various grid operating scenarios performed by the System Operators prior to market opening in April 2001 indicated that under all credible single contingency scenarios, the lowest voltage at the Pickering switchyard would be 226 kV.

The plan was to operate with the exemption in place on the basis that the probability of the grid voltage at the Pickering B NGS switchyard going below 226 kV is extremely small, and on the assumption that the IESO will take steps necessary to help ensure that the grid voltage at the Pickering B NGS switchyard does not go below 226 kV.

Subsequently Pickering B NGS undertook further analysis to study the impact of degraded grid voltage on operating units in the first 30 minutes. That report confirmed that Pickering B NGS units could be operated at grid voltages down to 222 kV for 30 minutes rather than the previous limit of 226 kV. The Pickering B NGS operating manual was amended and approved to meet the new 222 kV grid voltage limit. SCO C-Central procedure has also been amended.

During normal operations, half of the station service supply at Pickering B NGS is taken from System Service Transformer (SST) and the other half is taken from the Generator Service Transformer (GST). These transformers are not equipped with on-potential tap changers and cannot accommodate a wide range of system voltages in the short term. If the voltage in Pickering B NGS switchyard falls below 222 kV, analysis conducted by OPG indicates that some of the plant auxiliary station service loads will trip off due to over-current protections, and the units will have to be removed from

PART 4 – SUBMISSIONS IN SUPPORT OF EXEMPTION APPLICATION

service to ensure nuclear safety.

The granting of this exemption will: release Pickering B NGS from the Appendix 4.1 requirement to operate the units at grid voltages (at the Pickering B NGS switchyard) of 222 kV or below; require the IESO to provide a warning to the Pickering B Unit 5 Main Control Room operator of contingencies occurring on the grid which have the potential to lower the grid voltage at the Pickering B switchyard to below 238 kV; and absolve Pickering B of any liability for failing to maintain synchronization of any or all the Pickering B units to the IESO-controlled grid when the grid voltage at Pickering B switchyard is 222 kV or lower.

Assessment of Impacts:

In OPG's opinion, the exemption if granted:

- Would not threaten the ability of the IESO to ensure non-discriminatory access to the IESO-controlled grid;
- Would not provide the exemption applicant with an undue preference within the IESO-administered markets;
- Would not increase costs to other market participants or the IESO.

Impact on OPG of exemption if not granted:

If OPG is not granted the requested exemption for non-complying equipment, Pickering B NGS could not be operated in its current configuration. It would be necessary to replace all the SST and GST transformers at Pickering B NGS with transformers equipped with on-potential tap changers, at significant costs and loss of generating capacity for extended period of time on several units simultaneously. It is doubtful that such a change could be implemented on all transformers before end of life of Pickering B station in 2020.

PART 5 – SUPPORTING DOCUMENTATION TO BE ATTACHED BY EXEMPTION APPLICANT

Please list below all supporting documents attached to this *exemption application*.

PART 5 – SUPPORTING DOCUMENTATION TO BE ATTACHED BY EXEMPTION APPLICANT

1. *Exemption Applicant's Plan* (must be attached)
2. Pickering B Operations Procedure - NK30-OM-058-51000-05.11
3. Memo - Re: Impact of degraded Grid Voltage on Pickering B Operating Units
4. in the First 30 Minutes - January 30, 2009 - File NK30-50000-P
- 5.

PART 6 – CERTIFICATION

The *exemption applicant* hereby declares that the information contained in and submitted in support of this document is, to the best of the *exemption applicant's* knowledge, complete and accurate.

Jasper Hyslop

Name

Section Mgr. Performance Engineering

Electrical Sec. Pickering B NGS

Title

PART 7 – CONFIDENTIALITY

- ☒ The *exemption applicant* agrees that information on this application may be posted in its entirety on the IESO Web site in accordance with the provisions of the *Exemption Application* and Assessment Procedure

OR

- ☐ The *exemption applicant* claims confidentiality over parts of the *Exemption Application* in accordance with Section 1.6.4 of the *Exemption Application* and Assessment Procedure. Parts of this *Exemption Application* over which confidentiality is claimed are highlighted. The balance of the information on this *exemption application* may be posted on the *IESO* Web site.

Brian L Gooder

Name

Snr Advisor, Regulatory Affairs, OPG Inc.

Title