



Canadian Nuclear  
Safety Commission

Commission canadienne  
de sûreté nucléaire

## Record of Proceedings, Including Reasons for Decision

In the Matter of

Applicant Ontario Power Generation Inc.

Subject Application to Amend the Pickering Nuclear  
Generating Station - B Power Reactor Operating  
Licence

Hearing  
Date March 29, 2012

## **RECORD OF PROCEEDINGS**

Applicant: Ontario Power Generation Inc.

Address/Location: 889 Brock Road, P82-6E2, Pickering, Ontario L1W 3J2

Purpose: Application to Amend the Pickering Nuclear Generating Station -  
B Power Reactor Operating Licence

Application received: October 25, 2011 and November 28, 2011

Date of hearing: March 29, 2012

Location: Canadian Nuclear Safety Commission (CNSC) 280 Slater St.,  
Ottawa, Ontario

Members present: M. Binder, Chair

Secretary: M. Leblanc  
Recording Secretary: S. Dimitrijevic

**Licence: Amended**

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## **Introduction**

1. Ontario Power Generation Inc. (OPG) has applied to the Canadian Nuclear Safety Commission<sup>1</sup> for an amendment to Nuclear Power Reactor Operating Licence (PROL) for the Pickering Nuclear Generating Station - B (Pickering B), located in the Province of Ontario on the north shore of Lake Ontario, in the City of Pickering in the Regional Municipality of Durham. Pickering B nuclear facility comprises four 540-megawatts net electrical output CANDU reactors and their associated equipment (Unit 5, Unit 6, Unit 7 and Unit 8). The current licence, PROL 08.17/2013, expires on June 30, 2013.
2. In the application, OPG requested the Commission's approval to replace revision 34 of the document "Operating Policies and Principles" (OP&P) with revision 35, which includes the use of Rod Based Guaranteed Shutdown State (RBGSS) as an approved Guaranteed Shutdown State (GSS).

## Issue

3. In considering the application, the Commission was required to decide, pursuant to subsection 24(4) of the *Nuclear Safety and Control Act*<sup>2</sup> (NSCA):
  - a) if OPG is qualified to carry on the activity that the amended licences would authorize; and
  - b) if, in carrying on that activity, OPG would make adequate provision for the protection of the environment, the health and safety of persons and the maintenance of national security and measures required to implement international obligations to which Canada has agreed.

## Hearing

4. Pursuant to section 22 of the NSCA, the President of the Commission established a Panel of the Commission to review the application. The Commission, in making its decision, considered information presented for a hearing held on March 29, 2012 in Ottawa, Ontario. During the hearing, the Commission considered written submissions from CNSC staff (CMD 12-H103) and OPG (CMD 12-H103.1).

## **Decision**

5. Based on its consideration of the matter, as described in more detail in the following sections of this *Record of Proceedings*, the Commission concludes that OPG has met the conditions of subsection 24(4) of the NSCA. Therefore,

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<sup>1</sup> The *Canadian Nuclear Safety Commission* is referred to as the "CNSC" when referring to the organization and its staff in general, and as the "Commission" when referring to the tribunal component.

<sup>2</sup> Statutes of Canada (S.C.) 1997, chapter (c.) 9.

the Commission, pursuant to section 24 of the *Nuclear Safety and Control Act*, amends the Nuclear Power Reactor Operating Licence PROL 08.17/2013 issued to Ontario Power Generation Inc. for its Pickering Nuclear Generating Station B located in Pickering, Ontario. The amended licence, PROL 08.18/2013, is valid until June 30, 2013.

6. The Commission includes in the licence the conditions and provisions as recommended by CNSC staff in CMD 12-H103.

### **Issues and Commission Findings**

#### *Qualifications and Protection Measures*

7. CNSC staff informed the Commission that OPG had requested an approval for a new revision of its OP&P that would allow the use of RBGSS as an approved GSS. The request was accompanied by explanations, operating manuals and other relevant internal documents submitted to support the application.
8. CNSC staff reported that the Commission accepted the use of RBGSS on occasion between 2008 and 2011. CNSC staff witnessed the field operations during the trial of the RBGSS and found them acceptable. The positive experience of the trials increased the confidence in the use of RBGSS, which lead OPG to submit the request for the permanent implementation of the RBGSS with certain changes to the original RBGSS descriptions and constraints. These changes are clearly specified in the revised GSS Operating Manual. CNSC staff considers these changes acceptable.
9. CNSC staff explained that the proposed RBGSS would include the use of a neutron poison in the moderator, which adds an additional defense-in-depth layer. CNSC staff noted that they had discussed with OPG various aspects of the RBGSS, including sub-criticality analysis, Probabilistic Safety Analysis (PSA) and reliability, operating procedures and operator training. CNSC staff added that they reviewed the submitted documentation and witnessed the field operations during the trial of RBGSS and found that the changes proposed to include the use of RBGSS as an approved GSS are acceptable, the safety margins being adequate and appropriate defence-in-depth being in place.
10. CNSC staff reported that they had assessed Safety and Control Areas (SCAs) that are relevant to the requested licence amendment including Human Performance Management, Operating Performance and Safety Analysis. Based on their assessment, CNSC staff recommended the Commission to amend the operating licence, subject to the following provisions:
  - OPG must complete the Training Needs Analysis (TNA) report for all relevant job families, provide training to all job families as required and submit the TNA report and the applicable training materials to the CNSC staff prior to OPG implementing the RBGSS;

- OPG should update the “Nuclear Design” section in Pickering B Safety Analysis Report to include the information related to approved GSS configurations, in the next Safety Report Update. OPG is also required to update the Pickering B Risk Assessment (PBRA), in the next planned update. This aims to ensure that all design basis or supporting control documents are updated following a change to operation or design of the plant.


11. To further confirm the adequacy of conditions and constraints, CNSC staff expects that OPG will closely monitor the application of RBGSS at Pickering B units 5 to 8.
12. With respect to the Crown legal duty to consult with Aboriginal groups, CNSC staff has determined that the requested amendment has no adverse impact on Aboriginal or treaty rights. Therefore, the duty to consult did not arise in relation to the proposed licence amendments.

#### **Application of the *Canadian Environmental Assessment Act***

13. Before making a licensing decision, the Commission must be satisfied that all applicable requirements of the *Canadian Environmental Assessment Act*<sup>3</sup> (CEAA) have been fulfilled.
14. CNSC staff reported that it had completed an Environmental Assessment (EA) determination. CNSC staff stated that there was no requirement for an EA pursuant to subsection 5(1) of the CEAA.

#### **Conclusion**

15. The Commission has considered the information and submissions from OPG and CNSC staff and is satisfied that the requested amendment will not adversely impact the safety of the Pickering B operations. The Commission is also satisfied that aboriginal consultation is not necessary in relation to the proposed amendment.
16. The Commission is satisfied that all applicable requirements of the CEAA have been fulfilled.



Michael Binder  
President,  
Canadian Nuclear Safety Commission

MAR 29 2012

Date

<sup>3</sup> S.C. 1992, c. 37.