

Record of Proceedings, Including Reasons for Decision

In the Matter of

Applicant Bruce Power Inc.

Subject Application to Amend Bruce Nuclear Generating
Stations A and B Power Reactor Operating
Licences

Hearing
Date March 11, 2008

RECORD OF PROCEEDINGS

Applicant: Bruce Power Inc.

Address/Location: P.O. Box 1540, B10, 4th floor W., Tiverton, ON N0G 2T0

Purpose: Application to Amend Bruce Nuclear Generating Stations A and B Power Reactor Operating Licences

Application received: December 6, 2007

Date of hearing: March 11, 2008

Location: Canadian Nuclear Safety Commission (CNSC) Public Hearing Room, 280 Slater St., 14th. Floor, Ottawa, Ontario

Members present: Michael Binder, Chair

Secretary: K. McGee
Recording Secretary: P. Reinhardt

Applicant	Document Number
There were no representatives	CMD 08-H104.1
CNSC staff	Document Number
There were no representatives	CMD 08-H104 CMD 08-H104.A
Intervenors	Document Number
Power Worker's Union	CMD 08-H104.2
Citizens For Renewable Energy	CMD 08-H104.3

Licence: Amended
Date of Release of Decision: March 17, 2008

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Introduction

1. Bruce Power Inc. (Bruce Power) has applied to the Canadian Nuclear Safety Commission¹ (CNSC) for an amendment to the Power Reactor Operating Licences (PROLs) for Bruce Power Nuclear Generating Stations A (Bruce NGS A) and B (NGS Bruce B) located in the municipality of Kincardine, Ontario. The current licences are PROL 15.08/2009 for Bruce A and PROL 16.10/2009 for Bruce B.
2. Bruce Power is seeking CNSC's approval of a procedure revision for Bruce A and Bruce B Station Shift Complements (SCC). An earlier request for changes to this procedure was presented CNSC but staff requested clarifications and more information from Bruce Power.
3. Bruce Power is also seeking approval for a change to the Supervised Control Panel Operators (SCPO) procedure.
4. The submission specifically requests approval for revisions to the following documents referenced in the Appendix B of Bruce A PROL 15.08/2009 and Bruce B PROL 16.10/2009, pursuant to licence condition 1.4 of the Bruce A and Bruce B operating licences:
 - DIV-OPA-00001, Station Shift Complement- Bruce A
 - DIV-OPB-00001, Station Shift Complement- Bruce B
 - GRP-OPS-000015, Use of Supervised Control Panel Operators for monitoring Reactor Units

Issue

5. In considering the application, the Commission was required to decide, pursuant to subsection 24(4) of the *Nuclear Safety and Control Act*² (NSCA):
 - a) if Bruce Power is qualified to carry on the activity that the amended licences would authorize; and
 - b) if in carrying on that activity, Bruce Power 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.

¹ 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.

² S.C. 1997, c. 9.

Hearing

6. Pursuant to section 22 of the NSCA, the President of the Commission established a Panel of the Commission to review the application. In establishing the process, a standing panel on procedural matters determined that it was not necessary to hold a public hearing on the matter, and the hearing was conducted by a panel of one commission member, based on written submissions.
7. The Commission, in making its decision, considered information presented for a hearing held on March 11, 2008 in Ottawa, Ontario. During the hearing, the Commission considered written submissions from CNSC staff (CMD 08-H104 and CMD 08-H104.A), Bruce Power Inc. (CMD 08-H104.1), Power Worker's Union (PWU) (CMD 08-H104.2) and Citizens For Renewable Energy (CFRE) (CMD 08-H104.3).

Decision

8. 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 Bruce Power Inc. is qualified to carry on the activity that the amended licences will authorize. The Commission is also satisfied that Bruce Power Inc., in carrying on that activity, will 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. Therefore,

the Commission, pursuant to section 24 of the *Nuclear Safety and Control Act*, amends Bruce Power A Operating Licence PROL 15.08/2009 and Bruce Power B Operating Licence PROL 16.10/2009 issued to Bruce Power Inc. for its Nuclear Generating Stations Bruce A and Bruce B. The amended licences, PROL 15.09/2009 and PROL 16.11/2009, remain valid until March 31, 2009, unless suspended, amended, revoked or replaced.

9. The Commission includes in the amended licence the conditions as recommended by CNSC staff in CMD 08-H104 and CMD 08-H104.A.

Issues and Commission Findings

10. In making its licensing decision, the Commission considered a number of issues related to Bruce Power Inc.'s qualification to carry out the proposed activities and the adequacy of the proposed measures for protecting the environment, the health and safety of persons, national security and international obligations to which Canada has agreed.

Qualifications and Protection Measures

11. Bruce Power requested revisions to Station Shift Complements (SCC) and Supervised Control Panel Operators (SCPO) procedures for Bruce A and Bruce B NGSs. The purpose of Bruce Power's application is to improve maintenance at both NGSs by reducing planned maintenance on shift at Bruce B and by performing planned maintenance during normal working hours. CNSC staff has observed a larger than normal maintenance backlog at Bruce Power and have requested that Bruce Power takes action to reduce the backlog. Transferring maintenance staff from shift to days is the solution Bruce Power proposed to increase the capability of day-based maintenance and therefore to reduce the backlog of high priority corrective maintenance and improve preventive maintenance.
12. Bruce Power repeated, with special attention to maintenance functions, the analysis described in the "Analysis of the Resource Requirements to Respond to abnormal Incidents at Bruce B" in order to determine the correct maintenance staff required on shift. Bruce Power also verified emergency tasks assigned to maintainers in the Bruce B Abnormal Incidents Manuals by field inspections.
13. The results of this analysis showed that, in limiting cases, all event mitigating actions and Emergency Response Organization (ERO) duties that required qualified maintainers, could be safely completed by two Control Technicians and two Mechanical Maintainers. The currently issued minimum shift complement includes one additional Control Technician and three additional Mechanical Maintainers per shift who have no specific emergency functions, either to perform event mitigation or fill ERO positions. These personnel were kept on shift mainly to perform planned maintenance. It is expected that the shift complement includes the roles necessary for routine activities, although the focus of CNSC staff review was on emergency function.
14. The currently issued minimum shift complement contains eight ERO roles, not trade specific, which were performed by maintenance personnel, but that could be performed by anyone with the ERO qualification. During the past year, these ERO duties have been assigned to other staff and Bruce Power has been training the designed site shift staff to perform these ERO roles. An implementation plan was developed to address all aspects of this transition including: training practices, drills, evaluations, alerting, transportation, procedure revisions and a human factor review.
15. The impact of this plan has been to re-assign some ERO roles at both stations and transfer one Mutual Assist Team role from Bruce B to Bruce A. This has resulted in identifying three Maintenance Supervisors and three additional Control Maintainers at Bruce B not required performing event mitigation or ERO positions. These changes, in addition to some minor administrative and organizational changes, are reflected in the revisions to Bruce B current shift complement procedures, DIV-OPB-00001 R003 and accordingly to Bruce A shift complement procedures DIV-OPA-00001 R002.

16. According to Bruce B condition licence 2.5 e), as of October 1, 2007, SCPOs may no longer be used to monitor reactor unit panels in place of Authorized Nuclear Operators (ANOs). Changes to the minimum complement for ANOs in both the station and the Main Control Room are part of this condition. In order to meet this requirement, revisions to Bruce B station shift complement procedure and to the SCPCO (GR-OOPS-00015) have been made.
17. CNSC staff has reviewed Bruce Power's proposed changes and is satisfied that the changes would not affect the roles of the ERO in the Bruce Power Nuclear Emergency Plan. Bruce Power's Emergency Preparedness has consistently been rated as exceeding requirements by CNSC staff in the Annual Industry Report. The main change in this area is the actual staff performing the ERO roles. The changes are consistent with Bruce Power's move towards a site-wide ERO. CNSC staff accept the current use of mutual aid response from Bruce B to Bruce A and support a limited increase in its use but believe that Bruce needs to further validate this approach. Therefore CNSC staff has requested that Bruce Power carry out further work in this area as part of on-going program improvement.
18. The total minimum complement to respond to Bruce A emergency would increase from 49 to 50. When completely implemented, the total minimum complement at Bruce B would change from 63 to 59. ERO roles would be re-assigned in order to release maintenance staff that could be moved off shift to support Bruce Power's Maintenance Program. CNSC staff concurred with Bruce's proposition. In conclusion, Bruce Power could move a total of 10 maintenance staff from shift to days. Bruce Power reviewed the proposed changes to the minimum complements against Regulatory Guide G-323 and validated the review through drills to show that the proposed changes to Bruce B minimum complements would not impact on their ability to respond to events. CNSC staff had difficulty assessing the adequacy of Bruce Power's review because the basis for the current shift complements is not well documented. For this reason, CNSC staff request that Bruce Power more clearly document and validate this basis prior to the expiry date of their current licence in March 2009. This should facilitate further review of changes to shift complements.
19. Revision to the SCPO procedure, GPR-OOPS-00015, is only to remove references to Bruce B that are no longer relevant. This is a change of an administrative nature and does not affect Bruce Power's qualification to carry on the activity that the amended licence will authorize.
20. CNSC Staff also reviewed two additional CMDs related to Bruce Power's request to modify the current shift complement: CMD 08-H104.2 from the Power Worker's Union and CMD 08-H104.3 from Citizens For Renewable Energy. Both expressed concerns with the proposed licence amendments which CNSC staff reviewed and assessed.

21. CNSC staff provided the following answers to PWU's CMD. Their first and fourth concerns are more linked to an economic issue than to a safety issue. CNSC also believes that comments regarding the cause of backlogs in the maintenance are not relevant to the changes in minimum shift complements, CNSC staff currently monitors Bruce's Power Maintenance Program and will continue to do so as part of its on going compliance program. It should be understood that minimum shift complement covers only the staff necessary to place the reactor into a safe state and to execute the emergency response program. The ability to quickly return to production after an operational upset is an economic concern rather than a safety concern. CNSC staff after reviewing PWU's fifth concern noted that all minimum shift complement staff for emergency response and abnormal incident management must be present at all times in the facility or on the site. Bruce Power's maintenance staff is qualified at both stations, according to their current Maintenance Program, to respond to abnormal incidents. At the Bruce Nuclear Generating Stations there are different types of operators. With the new shift complements, some emergency duties are going to be transferred to Fuel Handling Operators not to Control Room Operators. The total number of ERO positions is not changing. Bruce Power is only using staff that didn't carry any ERO obligations to carry some from now on. Finally, Volunteer Response Team (VERT) is not part of the minimum shift complement other than those required for ERO duties.

22. After reviewing the concerns raised by CFRE in their CMD, CNSC staff noted that Bruce Power's approach is consistent with best practice for efficient and that the proposed changes in minimum shift complements is not intended to reduce the total of maintenance staff in the stations. However, CNSC staff, as already stated in the review of Bruce's proposal, recommended that Bruce Power more clearly document and validate their basis for shift complements to facilitate any future review of changes to minimum shift complements. The concern raised on the center of site is not relevant to Bruce's proposed amendment. Finally, shift complement goes beyond ERO duties to include operator response to incidents. CNSC's review confirmed that an appropriate position is identified for all ERO duties.

23. CNSC staff recognised that Bruce Power's application was acceptable but discussion with the licensee was required to reach that conclusion. CNSC staff concluded that Bruce Power's modifications to shift complements to make more effective use of existing shift personnel so that maintenance staff may be reassigned from shift positions to day positions does not affect its emergency response effectiveness.

24. CNSC staff recommends that the Commission approves Bruce Power's revised Station Shift Complement procedures and SCPO procedures, pursuant to Licence Condition 1.4 of the Bruce A PROL 15.08/2009 and Bruce B PROL 16.10/2009, and that amendments to Bruce Power's licences be provided to reflect the revised versions of these procedures.

Application of the *Canadian Environmental Assessment Act*

25. Before making a licensing decision, the Commission must be satisfied that all applicable requirements of the *Canadian Environmental Assessment Act*³ (CEAA) have been fulfilled.
26. CNSC staff reported that it had completed an Environmental Assessment (EA) determination. Since the proposed amendments are not for the purpose of enabling a project to proceed or enabling a changed operation, CNSC staff concluded that there was no requirement for an EA pursuant to subsection 5(1) of the CEAA.
27. The Commission is satisfied that all applicable requirements of the CEAA have been fulfilled.

Conclusion

28. The Commission has considered the information and submissions of Bruce Power, CNSC staff and two intervenors as presented in the material available for reference on the record.
29. The Commission is satisfied that the applicant meets the requirements of subsection 24(4) of the *Nuclear Safety and Control Act*. That is, the Commission is of the opinion that Bruce Power Inc. is qualified to carry on the activity that the amended licences will authorize and that it will 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.
30. The Commission, pursuant to section 24 of the *Nuclear Safety and Control Act*, amends Bruce Power A Operating Licence PROL 15.08/2009 and Bruce Power B Operating Licence PROL 16.10/2009 issued to Bruce Power Inc. for its Nuclear Generating Stations Bruce A and Bruce B. The amended licences, PROL 15.09/2009 and PROL 16.11/2009, remain valid until March 31, 2009, unless suspended, amended, revoked or replaced.

³ S.C. 1992, c. 37.

31. The Commission includes in the licence the recommendations made by CNSC staff in CMD 08-H104 and CMD 08-H104.A.

Michael Binder,
President
Canadian Nuclear Safety Commission

Date of release of Decision: March 17, 2008