Canadian Nuclear Safety Commission | Commission canadienne de sûreté nucléaire

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ORIGINAL/ORIGINAL

CMD: 20-H100

Date signed/Signé le 26 FEBRUARY 2020

A Licence Amendment

Application by Bruce Power, Ontario Power Generation and New Brunswick Power for the Amendment of their Power Reactor Operating Licences

Hearing in writing based solely on written submissions

Scheduled for:

February 2020

Submitted by:

CNSC Staff

Une modification de permis

Demandes de modification d'un permis d'exploitation d'un réacteur de puissance présentées par Bruce Power, Ontario Power Generation et Énergie Nouveau-Brunswick

Audience fondée uniquement sur des mémoires

Prévue pour :

Février 2020

Soumise par :

Le personnel de la CCSN

e-Doc 6088526 (WORD)
e-Doc 6246011 (PDF)

Summary

This CMD presents information about the following matters of regulatory interest with respect to Ontario Power Generation, Bruce Power, and New Brunswick Power:

- Amendment to Licence Condition 2.4 of the Bruce Nuclear Generating Stations A and B Power Reactor Operating Licence (PROL) (PROL 18.00/2028)
- Amendment to Licence Condition 2.3 of the Darlington Nuclear Generating Station PROL (PROL 13.01/2025)
- Amendment to Licence Condition 2.4 of the Pickering Nuclear Generating Station PROL (PROL 48.00/2028)
- Amendment to Licence Condition 2.4 of the Point Lepreau Nuclear Generating Station PROL (PROL 17.00/2022)

CNSC staff recommend the Commission take the following actions:

- Amend the Licence Conditions of the PROLs listed above to replace RD-204, *Certification of Persons Working at Nuclear Power Plants* with REGDOC-2.2.3, *Personnel Certification, Volume III: Certification of Persons Working at Nuclear Power Plants*

The following items are attached:

- Current licences
- Proposed licences

Résumé

Le présent CMD présente de l'information sur un ensemble de questions d'ordre réglementaire concernant Bruce Power, Ontario Power Generation et Énergie Nouveau-Brunswick :

- Modification de la condition de permis 2.4 du Permis d'exploitation d'un réacteur de puissance (PERP) pour les centrales nucléaires de Bruce-A et de Bruce-B (PERP 18.00/2028)
- Modification de la condition de permis 2.3 du PERP de la centrale nucléaire Darlington (PERP 13.01/2025)
- Modification de la condition de permis 2.4 du PERP de la centrale nucléaire Pickering (PERP 48.00/2028)
- Modification de la condition de permis 2.4 du PERP de la centrale nucléaire Point Lepreau (PERP 17.00/2022)

La Commission pourrait considérer prendre les mesures suivantes :

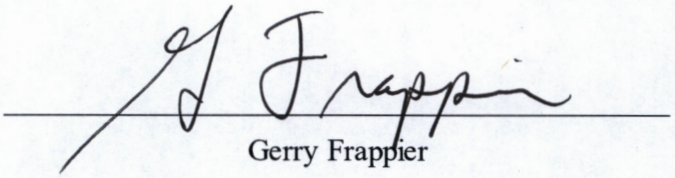
- Modification de la condition de permis des PERP énumérés ci-dessus pour remplacer RD-204, Accréditation des personnes qui travaillent dans des centrales nucléaires par le REGDOC-2.2.3, Accréditation du personnel, tome III : Accréditation des personnes qui travaillent dans des centrales nucléaires

Les pièces suivantes sont jointes :

- Permis actuels
- Permis proposés

Signed/signé le

25 February 2020



Gerry Frappier

Director General

Directorate of Power Reactor Regulation

Directeur général

Direction de la réglementation des centrales nucléaires

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EXECUTIVE SUMMARY

In September 2019, the CNSC published REGDOC-2.2.3, *Personnel Certification, Volume III: Certification of Persons Working at Nuclear Power Plants*, replacing RD-204, *Certification of Persons Working at Nuclear Power Plants*. In REGDOC-2.2.3 Volume III, the Commission approved a change to the validity period for knowledge-based certification examinations, extending the validity period from one year to three years.

Currently, licensees are required to meet RD-204 as a Licence Condition (LC) of all Power Reactor Operating Licences (PROLs). To make REGDOC-2.2.3 Volume III part of the licensing basis, all PROLs will require an amendment to the appropriate LC to replace RD-204 with REGDOC-2.2.3 Volume III. Bruce Power, Ontario Power Generation, and New Brunswick Power submitted applications [1, 2, 3, 4] to amend their PROLs to replace reference to RD-204 with REGDOC-2.2.3 Volume III.

CNSC staff have reviewed the licensee's applications to amend their PROLs and conclude that the requests for the amendments are acceptable, meet regulatory requirements, and will not impact safety.

PART ONE

This Commission Member Document (CMD) is presented in two parts.

Part One includes:

1. An overview of the matter being presented;
2. Overall conclusions and overall recommendations;
3. General discussion pertaining to the regulatory and technical basis;
4. Discussion about other matters of regulatory interest; and
5. Addenda material that complements items 1 through 4.

Part Two provides all available information pertaining directly to the current and proposed licence.

1. OVERVIEW

1.1 Background

In September 2019, the Canadian Nuclear Safety Commission (CNSC) published REGDOC-2.2.3, *Personnel Certification, Volume III: Certification of Persons Working at Nuclear Power Plants* replacing RD-204, *Certification of Persons Working at Nuclear Power Plants*. REGDOC-2.2.3 Volume III and RD-204 define requirements to ensure persons seeking certification or the renewal of a certification by the CNSC, for positions referred in Power Reactor Operating Licences (PROLs; Appendix B), are qualified to carry out the duties of that position in accordance with the *Nuclear Safety and Control Act* (NSCA) and the regulations made under the NSCA.

In REGDOC-2.2.3 Volume III, the Commission approved a change to the validity period for knowledge-based certification examinations, extending the validity period from one year to three years. REGDOC-2.2.3 Volume III was published following technical analyses by CNSC staff, including a Gender-Based Analysis Plus (GBA+) component. CNSC staff determined that the extension of validity periods would allow licensees to recruit additional suitable candidates in positions requiring CNSC certification.

Currently, licensees are required to meet RD-204 as a Licence Condition (LC) of all PROLs. To implement REGDOC-2.2.3 Volume III, all PROLs will require an amendment to the appropriate LC to replace RD-204 with REGDOC-2.2.3 Volume III. Bruce Power, Ontario Power Generation (OPG), and New Brunswick Power (NB Power) submitted applications [1, 2, 3, 4] to amend their PROLs to replace reference to RD-204 with REGDOC-2.2.3 Volume III.

1.2 Highlights

Regulatory Documents are primarily implemented through revisions to Licence Condition Handbooks (LCHs) during the CNSC licence renewal process, as well as on an ongoing basis through revisions to LCHs approved by the Director General of the Directorate of Power Reactor Regulation. The implementation of REGDOC-2.2.3 Volume III is uncommon, as the document it replaces is referenced within a LC in all PROLs in accordance with section 9(2) of the *Class I Nuclear Facilities Regulations*. Therefore, to implement REGDOC-2.2.3 Volume III, Bruce Power, OPG and NB Power have submitted requests to the CNSC to amend their PROLs and replace reference to RD-204 with REGDOC-2.2.3 Volume III. The proposed licence changes and proposed licences are in Appendix B and D, respectively.

1.3 Overall Conclusions

CNSC staff have concluded the following with respect to paragraphs 24(4)(*a*) and (*b*) of the NSCA, in that Bruce Power, OPG and NB Power:

1. Is qualified to carry on the activity that the licence will authorize the licensee to carry on; and
2. Will, in carrying out that activity, 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.

CNSC staff have reviewed the application under the NSCA and have concluded that, given the administrative nature of the proposed licence amendment, there are no impacts to the environment.

1.4 Overall Recommendations

CNSC staff recommend the following:

- Amend the LC of the PROLs identified in Appendix C to replace RD-204, *Certification of Persons Working at Nuclear Power Plants* with REGDOC-2.2.3, *Personnel Certification, Volume III: Certification of Persons Working at Nuclear Power Plants*.

2. MATTERS FOR CONSIDERATION

2.1 Environmental Assessment

CNSC staff have reviewed the application under the NSCA and have concluded that, given the administrative nature of the proposed licence amendment, there are no impacts to the environment.

2.2 Regulatory and Technical Basis

CNSC staff have reviewed the licensee's amendment requests [1, 2, 3, 4] and determined that the request for the amendment are acceptable and meet regulatory requirements.

In September 2019, the CNSC published REGDOC-2.2.3, *Personnel Certification, Volume III: Certification of Persons Working at Nuclear Power Plants*, replacing RD-204. The Commission approved a single update to Paragraph 30.1 of REGDOC-2.2.3 Volume III to allow for a three-year extension for knowledge-based exams, which was previously set at one year in RD-204.

Although Paragraph 30.1 of REGDOC-2.2.3 Volume III has been revised to allow for three-year extension periods for knowledge-based exams, in accordance with Paragraph 30.2 licensees must also demonstrate that measures have been taken to ensure that candidates have maintained the required knowledge and skills. In order to obtain sufficient assurance in support of the revised three-year extension period, CNSC staff requested licensees to provide a description of the procedures, either in place or to be implemented, to ensure that candidates resuming their initial training after a prolonged absence:

- undergo an evaluation designed to identify any consequent knowledge and skills gaps;
- attend remedial training as necessary; and,
- rejoin the initial training program at the appropriate stage.

CNSC staff reviewed each licensee submission and were satisfied that sufficient information was submitted in support of changing the maximum length of the extension of validity periods for knowledge-based certification examinations from one year to three years. Of note, all licensees have well-established processes, including academic review boards, ensuring that the progress of each trainee is monitored throughout the duration of the initial training, and that unsatisfactory performance is promptly addressed; these existing processes remain effective following a candidate's absence, regardless of duration and rationale, including family planning. CNSC staff concluded that the revised three-year extension period, with provisions currently in place by the licensees, would have no negative effect on worker competency. Following the review of the licensee submissions, CNSC staff recommended that the Commission approve REGDOC-2.2.3 Volume III, changing the maximum length of the extension of validity periods for knowledge-based certification examinations from one year to three years. The Commission published REGDOC-2.2.3 Volume III in September 2019.

In October and November 2019, Bruce Power, OPG and NB Power submitted requests [1, 2, 3, 4] for licence amendments to their PROLs to replace RD-204 with REGDOC-2.2.3 Volume III. The LC under Human Performance Management associated with this regulatory document is LC 2.4 in the PROLs for Bruce A and B, Point Lepreau and Pickering, and LC 2.3 in the PROL for Darlington. All current and proposed licences are found in Appendix C and D, respectively.

Upon issuance of the licence amendments, REGDOC-2.2.3 Volume III will immediately come into effect and licensees may submit requests for extensions under the new extension provisions in REGDOC-2.2.3 Volume III.

CNSC staff conclude that the licence amendments will not impact safety, as the change will have no negative effects on worker competency.

2.3 Aboriginal Consultation

The common law duty to consult with Aboriginal groups applies when the Crown contemplates actions that may adversely affect established or potential Aboriginal and treaty rights. Based on the information provided in the application, CNSC staff have determined that the activity is administrative in nature and will not cause an adverse impact on potential or established Aboriginal or treaty rights. Therefore, the duty to consult has not been raised.

2.4 Other Matters of Regulatory Interest

No other matters of regulatory interest are relevant to this CMD.

3. OVERALL CONCLUSIONS AND RECOMMENDATIONS

CNSC staff have concluded the following with respect to paragraphs 24(4)(a) and (b) of the NSCA, in that Bruce Power, OPG and NB Power:

1. Is qualified to carry on the activity that the licence will authorize the licensee to carry on; and
2. Will, in carrying out that activity, 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.

Pursuant to section 24 of the NSCA, CNSC staff recommend that the Commission:

- Amend the Licence Condition of the PROLs identified in Appendix C to replace RD-204, *Certification of Persons Working at Nuclear Power Plants* with REGDOC-2.2.3, *Personnel Certification, Volume III: Certification of Persons Working at Nuclear Power Plants*

REFERENCES

1. Letter, M. Burton to M. Leblanc, "*Request for Amendment of the Nuclear Power Reactor Operating Licence Bruce Nuclear Generating Stations A and B – PROL 18.00/2028*", November 11, 2019 (e-Doc 6042771)
2. Letter, S. Gregoris to M. Leblanc, "*Darlington NGS – Application for Amendment of the Darlington Nuclear Generating Station Power Reactor Operating Licence 13.01/2025*", October 1, 2019 (e-Doc 6009488)
3. Letter, R. Lockwood to M. Leblanc, "*Pickering NGS – Application for Amendment of the Pickering Nuclear Generating Station Power Reactor Operating Licence PROL 48.00/2028*", November 13, 2019 (e-Doc 6043293)
4. Letter, B. Plummer to M. Leblanc, "*Request for Amendment of the Point Lepreau Nuclear Generating Station Power Reactor Operating Licence – PROL 17.00/2022*", October 11, 2019 (e-Doc 6022297)

A. BASIS FOR THE RECOMMENDATION(S)

A.1 Regulatory Basis

The regulatory basis for the matters that are relevant to this CMD are as follows:

- *Nuclear Safety and Control Act*, subsection 24(2)
- *General Nuclear Safety and Control Regulations*, section 6
- Power Reactor Operation Licence, Bruce Nuclear Generating Stations A and B, PROL 18.00/2028
- Power Reactor Operation Licence, Darlington Nuclear Generating Station, PROL 13.01/2025
- Power Reactor Operation Licence, Pickering Nuclear Generating Station, PROL 48.00/2028
- Power Reactor Operation Licence, Point Lepreau Nuclear Generating Station, PROL 17.00/2022

A.2 Technical Basis

The technical basis for the recommendations presented in this CMD are as follows:

- REGDOC-2.2.3, *Personnel Certification, Volume III: Certification of Persons Working at Nuclear Power*
- RD-204, *Certification of Persons Working at Nuclear Power Plants*

B. PROPOSED LICENCE CHANGES

Overview

Currently, licensees are required to meet RD-204 as a Licence Condition (LC) under the Safety and Control Area Human (SCA) Performance Management in all Power Reactor Operating Licences (PROLs). To implement REGDOC-2.2.3 Volume III, all PROLs will require an amendment to the appropriate LC, identified below, to replace RD-204 with REGDOC-2.2.3 Volume III. Bruce Power, OPG, and NB Power submitted applications [1, 2, 3, 4] to amend their PROLs to replace reference to RD-204 with REGDOC-2.2.3 Volume III.

Licence Conditions

The positions that require certification at each nuclear power plant vary depending on the licensee and facility. The following is a complete list of each licensee, and the current and proposed LC under the SCA Human Performance Management:

1. Bruce Power – RD-204 is referenced in LC 2.4 of PROL 18.00/2028

    a. Current

> The licensee shall implement and maintain certification programs in accordance with CNSC regulatory document RD-204 CERTIFICATION OF PERSONS WORKING AT NUCLEAR POWER PLANTS.
>
> Persons appointed to the following positions require certification:
>
> (i) authorized health physicist;
>
> (ii) authorized nuclear operator;
>
> (iii) control room shift supervisor;
>
> (iv) Unit 0 control room operator; and
>
> (v) shift manager.

    b. Proposed

> The licensee shall implement and maintain certification programs in accordance with CNSC regulatory document **REGDOC-2.2.3, PERSONNEL CERTIFICATION, VOLUME III: CERTIFICATION OF PERSONS WORKING AT NUCLEAR POWER.**
>
> Persons appointed to the following positions require certification:
>
> (i) authorized health physicist;
>
> (ii) authorized nuclear operator;
>
> (iii) control room shift supervisor;
>
> (iv) Unit 0 control room operator; and
>
> (v) shift manager.

2. OPG Darlington – RD-204 is referenced in LC 2.3 of PROL 13.01/2025

    a. Current

The licensee shall implement and maintain training programs for workers. The certification process and supporting examinations and tests shall be conducted in accordance with CNSC regulatory document RD-204 CERTIFICATION OF PERSONS WORKING AT NUCLEAR POWER PLANTS. Persons appointed to the following positions require certification: (i) Responsible Health Physicist; (ii) Shift Manager; (iii) Control Room Shift Supervisor; (iv) Authorized Nuclear Operator; and (v) Unit 0 Control Room Operator.

    b. Proposed

The licensee shall implement and maintain training programs for workers. The certification process and supporting examinations and tests shall be conducted in accordance with CNSC regulatory document **REGDOC-2.2.3, PERSONNEL CERTIFICATION, VOLUME III: CERTIFICATION OF PERSONS WORKING AT NUCLEAR POWER.** Persons appointed to the following positions require certification: (i) Responsible Health Physicist; (ii) Shift Manager; (iii) Control Room Shift Supervisor; (iv) Authorized Nuclear Operator; and (v) Unit 0 Control Room Operator.

3. OPG Pickering – RD-204 is referenced in LC 2.4 of PROL 48.00/2028

    a. Current

The licensee shall implement and maintain certification programs in accordance with CNSC regulatory document RD-204 CERTIFICATION OF PERSONS WORKING AT NUCLEAR POWER PLANTS. Persons appointed to the following positions require certification: (i) Responsible Health Physicist; (ii) Shift Manager; (iii) Control Room Shift Supervisor; and (iv) Authorized Nuclear Operator.

b. Proposed

The licensee shall implement and maintain certification programs in accordance with CNSC regulatory document **REGDOC-2.2.3, PERSONNEL CERTIFICATION, VOLUME III: CERTIFICATION OF PERSONS WORKING AT NUCLEAR POWER.** Persons appointed to the following positions require certification: (i) Responsible Health Physicist; (ii) Shift Manager; (iii) Control Room Shift Supervisor; and (iv) Authorized Nuclear Operator.

4. NB Power – RD-204 is referenced in LC 2.4 of PROL 17.00/2022

a. Current

The licensee shall implement and maintain certification programs in accordance with CNSC regulatory document RD-204 CERTIFICATION OF PERSONS WORKING AT NUCLEAR POWER PLANTS. Persons appointed to the following positions require certification: (i) Senior Health Physicist; (ii) Shift Supervisor; and (iii) Control Room Operator.

b. Proposed

The licensee shall implement and maintain certification programs in accordance with CNSC regulatory document **REGDOC-2.2.3, PERSONNEL CERTIFICATION, VOLUME III: CERTIFICATION OF PERSONS WORKING AT NUCLEAR POWER.** Persons appointed to the following positions require certification: (i) Senior Health Physicist; (ii) Shift Supervisor; and (iii) Control Room Operator.

C. CURRENT LICENCES

This appendix includes the following current licences:

- Power Reactor Operation Licence, Bruce Nuclear Generating Stations A and B, PROL 18.00/2028
- Power Reactor Operation Licence, Darlington Nuclear Generating Station, PROL 13.01/2025
- Power Reactor Operation Licence, Pickering Nuclear Generating Station, PROL 48.00/2028
- Power Reactor Operation Licence, Point Lepreau Nuclear Generating Station, PROL 17.00/2022

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File / Dossier: 2.01

NUCLEAR POWER REACTOR OPERATING LICENCE

BRUCE NUCLEAR GENERATING STATIONS A AND B

I) LICENCE NUMBER: **PROL 18.00/2028**

II) LICENSEE: Pursuant to section 24 of the *Nuclear Safety and Control Act* this licence is issued to:

Bruce Power Inc.
P.O. Box 1540, R.R. #2
Building B10, 177 Tie Road
Municipality of Kincardine
Tiverton, Ontario
N0G 2T0

III) LICENCE PERIOD: This licence is valid from October 1, 2018 to September 30, 2028, unless suspended, amended, revoked or replaced.

IV) LICENSED ACTIVITIES:

This licence authorizes the licensee to:

(i) operate the Bruce Nuclear Generating Stations A and B (hereinafter "Bruce A and B") comprised of reactor units 1 to 4 and 5 to 8 respectively, at the Bruce site located in the County of Bruce in the regional municipality of Kincardine, Province of Ontario; and,

(1) possess, transfer, use, package, manage and store nuclear substances that are required for, associated with, or arise from the activities described in (i), except for booster fuel assemblies;

(2) possess, transfer and use prescribed equipment that is required for, associated with, or arises from the activities described in (i);

(3) possess and use prescribed information that is required for, associated with, or arises from the activities described in (i);

(ii) operate a Class II nuclear facility at the Bruce site; and,

(1) possess, transfer, use, package, manage and store nuclear substances that are required for, associated with, or arise from the activities described in (ii);

(2) possess, transfer and use prescribed equipment that is required for, associated with, or arises from the activities described in (ii);

(iii) possess, transfer, use, manage and store nuclear substances and prescribed equipment to perform industrial radiography throughout the Bruce site;

(iv) import and export nuclear substances and prescribed equipment, except controlled nuclear

substances and controlled nuclear equipment, that are required for, associated with, or arise from the activities described in (i), (ii) and (iii);

(v) possess, manage and store booster fuel assemblies at Bruce A; and

(vi) produce Cobalt-60 at Bruce B.

V) EXPLANATORY NOTES:

(i) Nothing in this licence shall be construed to authorize non-compliance with any other applicable legal obligation or restriction.

(ii) Unless otherwise provided for in this licence, words and expressions used in this licence have the same meaning as in the *Nuclear Safety and Control Act* and associated Regulations.

(iii) The BRUCE NGS A AND B LICENCE CONDITIONS HANDBOOK (LCH) provides compliance verification criteria including the Canadian standards and regulatory documents used to verify compliance with the conditions in the licence. The LCH also provides information regarding delegation of authority, applicable versions of documents and non-mandatory recommendations and guidance on how to achieve compliance.

VI) CONDITIONS:

G. General

G.1 The licensee shall conduct the activities described in Part IV of this licence in accordance with the licensing basis, defined as:

(i) the regulatory requirements set out in the applicable laws and regulations;

(ii) the conditions and safety control measures described in the facilities' licence and the documents directly referenced in that licence;

(iii) the safety and control measures described in the licence applications and the documents needed to support those licence applications;

unless otherwise approved in writing by the Canadian Nuclear Safety Commission (CNSC) (hereinafter "the Commission").

G.2 The licensee shall give written notification of changes to the facilities or their operation, including deviation from design, operating conditions, policies, programs and methods referred to in the licensing basis.

G.3 The licensee shall control the use and occupation of any land within the exclusion zones.

G.4 The licensee shall provide, at the Bruce site and at no expense to the Commission, office space for employees of the Commission who customarily carry out their functions on the premises of Bruce A and B (onsite Commission staff).

G.5 The licensee shall implement and maintain a public information and disclosure program.

1. Management System

1.1 The licensee shall implement and maintain a management system.

2. Human Performance Management

2.1 The licensee shall implement and maintain a human performance program.

2.2 The licensee shall implement and maintain the minimum shift complement and control room staffing for Bruce A and B.

2.3 The licensee shall implement and maintain training programs for workers.

2.4 The licensee shall implement and maintain certification programs in accordance with CNSC regulatory document RD-204 CERTIFICATION OF PERSONS WORKING AT NUCLEAR POWER PLANTS.

Persons appointed to the following positions require certification:

(i) authorized health physicist;
(ii) authorized nuclear operator;
(iii) control room shift supervisor;
(iv) Unit 0 control room operator; and
(v) shift manager.

3. Operating Performance

3.1 The licensee shall implement and maintain an operations program, which includes a set of operating limits.

3.2 The licensee shall not restart a reactor after a serious process failure without the prior written approval of the Commission, or prior written consent of a person authorized by the Commission.

3.3 The licensee shall notify and report in accordance with CNSC regulatory document REGDOC-3.1.1 REPORTING REQUIREMENTS FOR NUCLEAR POWER PLANTS.

4. Safety Analysis

4.1 The licensee shall implement and maintain a safety analysis program.

5. Physical Design

5.1 The licensee shall implement and maintain a design program.

5.2 The licensee shall implement and maintain a pressure boundary program and have in place a formal agreement with an Authorized Inspection Agency.

5.3 The licensee shall implement and maintain an equipment and structure qualification program.

6. Fitness for Service

6.1 The licensee shall implement and maintain a fitness for service program.

7. Radiation Protection

7.1 The licensee shall implement and maintain a radiation protection program, which includes a set of action levels. When the licensee becomes aware that an action level has been reached, the licensee shall notify the Commission within seven days.

8. Conventional Health and Safety

8.1 The licensee shall implement and maintain a conventional health and safety program.

9. Environmental Protection

9.1 The licensee shall implement and maintain an environmental protection program, which includes a set of action levels. When the licensee becomes aware that an action level has been reached, the

licensee shall notify the Commission within seven days.

10. Emergency Management and Fire Protection

10.1 The licensee shall implement and maintain an emergency preparedness program.

10.2 The licensee shall implement and maintain a fire protection program.

11. Waste Management

11.1 The licensee shall implement and maintain a waste management program.

11.2 The licensee shall notify the Commission of any changes regarding the obligations of decommissioning and financial guarantees under the Lease Agreement with Ontario Power Generation Inc., as described in 15.1.

12. Security

12.1 The licensee shall implement and maintain a nuclear security program.

13. Safeguards and Non-Proliferation

13.1 The licensee shall implement and maintain a safeguards program.

14. Packaging and Transport

14.1 The licensee shall implement and maintain a packaging and transport program.

15. Nuclear Facility-Specific

15.1 The licensee shall inform the Commission in writing of any amendments to the Amended and Restated Lease Agreement between Ontario Power Generation Inc., Bruce Power L.P., OPG-Huron A Inc./OPG-Huron B Inc./OPG-Huron Common Facilities Inc., British Energy PLC, Cameco Corporation, TransCanada Pipelines Limited, BPC Generation Infrastructure Trust and Ontario Municipal Employees Retirement Board dated February 14, 2003.

15.2 The licensee shall implement the Integrated Implementation Plan.

15.3 Before hydrogen equivalent concentrations exceed 120 ppm, the licensee shall demonstrate that pressure tube fracture toughness will be sufficient for safe operation beyond 120 ppm.

15.4 The licensee shall implement a return-to-service plan for Major Component Replacement.

15.5 The licensee shall obtain the approval of the Commission, or consent of a person authorized by the Commission, prior to the removal of established regulatory hold points.

15.6 The licensee shall conduct and implement a periodic safety review.

15.7 The licensee shall inform the Commission of any reactor to be removed from commercial operations at Bruce A and B, and shall provide a plan describing the activities and timeline for transitioning from operations to safe storage.

15.8 The licensee shall store and manage booster fuel assemblies at Bruce A in a manner that ensures their physical security.

15.9 The licensee shall implement and maintain a nuclear criticality safety program.

15.10 The licensee shall implement and maintain a program for the receipt, storage and handling of the nuclear substance Cobalt-60 at Bruce B.

15.11 The licensee shall implement and maintain a program for the operation of the Class II nuclear facility.

15.12 The licensee shall implement and maintain a program for nuclear substances and prescribed equipment.

SIGNED on September 27, 2018

Rumina Velshi
President
CANADIAN NUCLEAR SAFETY COMMISSION

Canadian Nuclear Safety Commission | Commission canadienne de sûreté nucléaire

Word Ref.: e-Doc 5250117
PDF Ref.: e-Doc 5251094
File / Dossier: 2.01

NUCLEAR POWER REACTOR OPERATING LICENCE

DARLINGTON NUCLEAR GENERATING STATION

I) LICENCE NUMBER: **PROL 13.01/2025**

II) LICENSEE: Pursuant to section 24 of the *Nuclear Safety and Control Act* this licence is issued to:

Ontario Power Generation Inc
700 University Avenue
Toronto, Ontario
M5G 1X6

III) LICENCE PERIOD: This licence is valid from January 1, 2016 to November 30, 2025, unless suspended, amended, revoked or replaced.

IV) LICENSED ACTIVITIES:

This licence authorizes the licensee to:

(i) operate the Darlington Nuclear Generating Station which includes the Darlington Tritium Removal Facility housed within the Heavy Water Management Building (hereinafter "the nuclear facility") at a site located in the Municipality of Clarington, in the Regional Municipality of Durham, in the Province of Ontario;

(ii) possess, transfer, use, package, manage and store the nuclear substances that are required for, associated with, or arise from the activities described in (i);

(iii) import and export nuclear substances, except controlled nuclear substances, that are required for, associated with, or arise from the activities described in (i); [Added 2017.10]

(iv) possess and use prescribed equipment and prescribed information that are required for, associated with, or arise from the activities described in (i);

(v) possess, transfer, process, package, manage and store the nuclear substances associated with the operation of the Darlington Tritium Removal Facility;

V) EXPLANATORY NOTES:

(i) Nothing in this licence shall be construed to authorize non-compliance with any other applicable legal obligation or restriction.

(ii) Unless otherwise provided for in this licence, words and expressions used in this licence have the same meaning as in the *Nuclear Safety and Control Act* and associated Regulations.

(iii) The Darlington NGS Licence Conditions Handbook (LCH) provides compliance verification criteria including the Canadian standards and regulatory documents used to verify compliance with the conditions in the licence. The LCH also provides information regarding delegation of authority, applicable versions of documents and non-mandatory recommendations and guidance on how to achieve compliance.

VI) CONDITIONS:

G. General

G.1 The licensee shall conduct the activities described in Part IV of this licence in accordance with the licensing basis, defined as:

(i) the regulatory requirements set out in the applicable laws and regulations
(ii) the conditions and safety and control measures described in the facility's or activity's licence and the documents directly referenced in that licence
(iii) the safety and control measures described in the licence application and the documents needed to support that licence application;

unless otherwise approved in writing by the Canadian Nuclear Safety Commission (CNSC, hereinafter "the Commission").

G.2 The licensee shall give written notification of changes to the facility or its operation, including deviation from design, operating conditions, policies, programs and methods referred to in the licensing basis.

G.3 The licensee shall control the use and occupation of any land within the exclusion zone.

G.4 The licensee shall provide, at the nuclear facility and at no expense to the Commission, suitable office space for employees of the Commission who customarily carry out their functions on the premises of that nuclear facility (onsite Commission staff).

G.5 The licensee shall maintain a financial guarantee for decommissioning that is acceptable to the Commission.

G.6 The licensee shall implement and maintain a public information and disclosure program.

1. Management System

1.1 The licensee shall implement and maintain a management system.

2. Human Performance Management

2.1 The licensee shall implement and maintain a human performance program.

2.2 The licensee shall implement and maintain the minimum shift complement and control room staffing for the nuclear facility.

2.3 The licensee shall implement and maintain training programs for workers. The certification process and supporting examinations and tests shall be conducted in accordance with CNSC regulatory document RD-204 CERTIFICATION OF PERSONS WORKING AT NUCLEAR POWER PLANTS.

Persons appointed to the following positions require certification:

(i) Responsible Health Physicist;
(ii) Shift Manager;
(iii) Control Room Shift Supervisor;

(iv) Authorized Nuclear Operator; and
(v) Unit 0 Control Room Operator.

3. Operating Performance

3.1 The licensee shall implement and maintain an operations program, which includes a set of operating limits.

3.2 The licensee shall not restart a reactor after a serious process failure without the prior written approval of the Commission, or prior written consent of a person authorized by the Commission.

3.3 The licensee shall notify and report in accordance with CNSC regulatory document REGDOC-3.1.1 REPORTING REQUIREMENTS: NUCLEAR POWER PLANTS.

3.4 The licensee shall implement a periodic safety review in support of its subsequent power reactor operating licence application.

4. Safety Analysis

4.1 The licensee shall implement and maintain a safety analysis program.

5. Physical Design

5.1 The licensee shall implement and maintain a design program.

5.2 The licensee shall implement and maintain a pressure boundary program and have in place a formal agreement with an Authorized Inspection Agency.

5.3 The licensee shall implement and maintain an equipment and structure qualification program.

6. Fitness for Service

6.1 The licensee shall implement and maintain a fitness for service program.

7. Radiation Protection

7.1 The licensee shall implement and maintain a radiation protection program, which includes a set of action levels. When the licensee becomes aware that an action level has been reached, the licensee shall notify the Commission within seven days.

8. Conventional Health and Safety

8.1 The licensee shall implement and maintain a conventional health and safety program.

9. Environmental Protection

9.1 The licensee shall implement and maintain an environmental protection program, which includes a set of action levels. When the licensee becomes aware that an action level has been reached, the licensee shall notify the Commission within seven days.

10. Emergency Management and Fire Protection

10.1 The licensee shall implement and maintain an emergency preparedness program.

10.2 The licensee shall implement and maintain a fire protection program.

11. Waste Management

11.1 The licensee shall implement and maintain a waste management program.

11.2 The licensee shall implement and maintain a decommissioning strategy.

12. Security

12.1 The licensee shall implement and maintain a security program.

13. Safeguards and Non-Proliferation

13.1 The licensee shall implement and maintain a safeguards program.

14. Packaging and Transport

14.1 The licensee shall implement and maintain a packaging and transport program.

15. Nuclear Facility-Specific

15.1 The licensee shall implement and maintain an operations program for the Tritium Removal Facility, which includes a set of operating limits.

15.2 The licensee shall implement a return to service plan for refurbishment.

15.3 The licensee shall implement the Integrated Implementation Plan.

15.4 The licensee shall obtain the approval of the Commission, or consent of a person authorized by the Commission, prior to the removal of established regulatory hold points.

15.5 The licensee shall limit the activities of import and export of nuclear substances to those occurring as contaminants in laundry, packaging, shielding or equipment. [Added 2017.10]

SIGNED at OTTAWA OCT 2 6 2017

M. Binder

Michael Binder
President
CANADIAN NUCLEAR SAFETY COMMISSION

Canadian Nuclear Safety Commission | Commission canadienne de sûreté nucléaire

PDF Ref.: e-Doc 5558765
Word Ref.: e-Doc 5189303
File / Dossier: 2.01

NUCLEAR POWER REACTOR OPERATING LICENCE

PICKERING NUCLEAR GENERATING STATION

I) LICENCE NUMBER: **PROL 48.00/2028**

II) LICENSEE: Pursuant to section 24 of the *Nuclear Safety and Control Act* this licence is issued to:

Ontario Power Generation Inc.
700 University Avenue
Toronto, Ontario
M5G 1X6

III) LICENCE PERIOD: This licence is valid from September 1, 2018 to August 31, 2028, unless suspended, amended, revoked or replaced.

IV) LICENSED ACTIVITIES:

This licence authorizes the licensee to:

(i) operate the Pickering Nuclear Generating Station (hereinafter "the nuclear facility") at a site located in the City of Pickering, in the Regional Municipality of Durham, in the Province of Ontario;

(ii) possess, transfer, use, package, manage and store the nuclear substances that are required for, associated with, or arise from the activities described in (i);

(iii) import and export the nuclear substances, except controlled nuclear substances, that are required for, associated with, or arise from the activities described in (i);

(iv) possess, transfer, produce, package, manage, and store produce Cobalt-60;

(v) possess, transfer, manage and store heavy water from other nuclear facilities;

(vi) transport Category II nuclear material by road vehicle from the nuclear facility spent fuel bay to the onsite waste storage facility;

(vii) possess, transfer, export, package, manage and store nuclear substances, except controlled nuclear substances, from the Western Waste Management Facility;

(viii) possess and use prescribed equipment and prescribed information that are required for, associated with, or arise from the activities described in (i); and

(ix) possess, use, manage and store enriched uranium as required for fission chambers for the Pickering Nuclear Generating Station units 1 and 4 Shutdown System Enhancement, including spares.

V) EXPLANATORY NOTES:

(i) Nothing in this licence shall be construed to authorize non-compliance with any other applicable legal obligation or restriction.

(ii) Unless otherwise provided for in this licence, words and expressions used in this licence have the same meaning as in the *Nuclear Safety and Control Act* and associated Regulations.

(iii) The Pickering NGS Licence Conditions Handbook (LCH) provides compliance verification criteria used to verify compliance with the conditions in the licence. The LCH also provides information regarding delegation of authority, applicable versions of documents and non-mandatory guidance on how to achieve compliance.

VI) CONDITIONS:

G. General

G.1 The licensee shall conduct the activities described in Part IV of this licence in accordance with the licensing basis, defined as:

(i) the regulatory requirements set out in the applicable laws and regulations;
(ii) the conditions and safety and control measures described in the facility's or activity's licence and the documents directly referenced in that licence;
(iii) the safety and control measures described in the licence application and the documents needed to support that licence application;

unless otherwise approved in writing by the Canadian Nuclear Safety Commission (CNSC, hereinafter “the Commission”).

G.2 The licensee shall give written notification of changes to the facility or its operation, including deviation from design, operating conditions, policies, programs and methods referred to in the licensing basis.

G.3 The licensee shall control the use and occupation of any land within the exclusion zone.

G.4 The licensee shall provide, at the nuclear facility and at no expense to the Commission, suitable office space for employees of the Commission who customarily carry out their functions on the premises of that nuclear facility (onsite Commission staff).

G.5 The licensee shall maintain a financial guarantee for decommissioning that is acceptable to the Commission.

G.6 The licensee shall implement and maintain a public information and disclosure program.

1. Management System

1.1 The licensee shall implement and maintain a management system.

2. Human Performance Management

2.1 The licensee shall implement and maintain a human performance program.

2.2 The licensee shall implement and maintain the minimum shift complement and control room staffing for the nuclear facility.

2.3 The licensee shall implement and maintain training programs.

2.4 The licensee shall implement and maintain certification programs in accordance with CNSC regulatory document RD-204, *Certification of Persons Working at Nuclear Power Plants*.

Persons appointed to the following positions require certification:

(i) Responsible Health Physicist;
(ii) Shift Manager;
(iii) Control Room Shift Supervisor; and
(iv) Authorized Nuclear Operator.

3. Operating Performance

3.1 The licensee shall implement and maintain an operations program, which includes a set of operating limits.

3.2 The licensee shall not restart a reactor after a serious process failure without the prior written approval of the Commission, or prior written consent of a person authorized by the Commission.

3.3 The licensee shall notify and report in accordance with CNSC regulatory document REGDOC-3.1.1, *Reporting Requirements for Nuclear Power Plants*.

4. Safety Analysis

4.1 The licensee shall implement and maintain a safety analysis program.

5. Physical Design

5.1 The licensee shall implement and maintain a design program.

5.2 The licensee shall implement and maintain a pressure boundary program and have in place a formal agreement with an Authorized Inspection Agency.

5.3 The licensee shall implement and maintain an equipment and structure qualification program.

6. Fitness for Service

6.1 The licensee shall implement and maintain a fitness for service program.

7. Radiation Protection

7.1 The licensee shall implement and maintain a radiation protection program, which includes a set of action levels. When the licensee becomes aware that an action level has been reached, the licensee shall notify the Commission within seven days.

8. Conventional Health and Safety

8.1 The licensee shall implement and maintain a conventional health and safety program.

9. Environmental Protection

9.1 The licensee shall implement and maintain an environmental protection program, which includes a set of action levels. When the licensee becomes aware that an action level has been reached, the licensee shall notify the Commission within seven days.

10. Emergency Management and Fire Protection

10.1 The licensee shall implement and maintain an emergency preparedness program.

10.2 The licensee shall implement and maintain a fire protection program.

11. Waste Management

11.1 The licensee shall implement and maintain a waste management program.

11.2 The licensee shall maintain a decommissioning plan.

12. Security

12.1 The licensee shall implement and maintain a security program.

13. Safeguards and Non-Proliferation

13.1 The licensee shall implement and maintain a safeguards program.

14. Packaging and Transport

14.1 The licensee shall implement and maintain a packaging and transport program.

15. Nuclear Facility-Specific

15.1 The licensee shall implement the Integrated Implementation Plan.

15.2 The licensee shall maintain Units 2 and 3 in the safe storage phase.

15.3 Before Hydrogen equivalent concentration exceeds 120 ppm, the licensee shall demonstrate that pressure tube fracture toughness will be sufficient for safe operation beyond 120 ppm.

15.4 The licensee shall implement and maintain plans for the end of commercial operations of all Pickering units.

15.5 The licensee shall implement and maintain a Cobalt-60 program for activities described under Part IV) of this licence.

15.6 The licensee shall limit the import and export of nuclear substances to those occurring as contaminants in laundry, packaging, shielding or equipment.

SIGNED at OTTAWA AUG 0 7 2018

M. Binder

Michael Binder
President
CANADIAN NUCLEAR SAFETY COMMISSION

Canadian Nuclear Safety Commission | Commission canadienne de sûreté nucléaire

PDF Ref.: e-Doc 5273480
Word Ref.: e-Doc 4763651
File / Dossier: 2.01

NUCLEAR POWER REACTOR OPERATING LICENCE

POINT LEPREAU NUCLEAR GENERATING STATION

I) LICENCE NUMBER: **PROL 17.00/2022**

II) LICENSEE: Pursuant to section 24 of the *Nuclear Safety and Control Act* this licence is issued to:

New Brunswick Power Corporation
515 King Street
Fredericton, New Brunswick
E3B 5G4

III) LICENCE PERIOD: This licence is valid from July 1, 2017 to June 30, 2022, unless suspended, amended, revoked or replaced.

IV) LICENSED ACTIVITIES:

This licence authorizes the licensee to:

(i) operate the Point Lepreau Nuclear Generating Station (hereinafter "the nuclear facility") and the Point Lepreau Solid Radioactive Waste Management Facility (hereinafter "the waste storage facility") at a site located in Charlotte County and Saint John County, Province of New Brunswick;

(ii) possess, transfer, use, package, manage and store the nuclear substances, that are required for, associated with, or arise from the activities described in (i);

(iii) possess, transfer, import, use, package, manage and store the sealed and unsealed sources and the prescribed equipment;

(iv) transport Category II nuclear material by road vehicle from the nuclear facility spent fuel bay to the onsite waste storage facility; and

(v) possess and use prescribed equipment and prescribed information that are required for, associated with, or arise from the activities described in (i), (iii) and (iv).

V) EXPLANATORY NOTES:

(i) Nothing in this licence shall be construed to authorize non-compliance with any other applicable legal obligation or restriction.

(ii) Unless otherwise provided for in this licence, words and expressions used in this licence have the same meaning as in the *Nuclear Safety and Control Act* and associated Regulations.

(iii) The POINT LEPREAU NGS LICENCE CONDITIONS HANDBOOK (LCH) provides compliance verification criteria used to verify compliance with the conditions in the licence. The LCH also provides information regarding delegation of authority, applicable versions of documents and non-mandatory guidance on how to achieve compliance.

VI) CONDITIONS:

G. General

G.1 The licensee shall conduct the activities described in Part IV of this licence in accordance with the licensing basis, defined as:

(i) the regulatory requirements set out in the applicable laws and regulations;
(ii) the conditions and safety and control measures described in the facility's or activity's licence and the documents directly referenced in that licence;
(iii) the safety and control measures described in the licence application and the documents needed to support that licence application;

unless otherwise approved in writing by the Canadian Nuclear Safety Commission (CNSC, hereinafter "the Commission").

G.2 The licensee shall give written notification of changes to the facility or its operation, including deviation from design, operating conditions, policies, programs and methods referred to in the licensing basis.

G.3 The licensee shall control the use and occupation of any land within the exclusion zone.

G.4 The licensee shall provide, at the nuclear facility and at no expense to the Commission, suitable office space for employees of the Commission who customarily carry out their functions on the premises of that nuclear facility (onsite Commission staff).

G.5 The licensee shall maintain a financial guarantee for decommissioning that is acceptable to the Commission.

G.6 The licensee shall implement and maintain a public information and disclosure program.

1. Management System

1.1 The licensee shall implement and maintain a management system.

2. Human Performance Management

2.1 The licensee shall implement and maintain a human performance program.

2.2 The licensee shall implement and maintain the minimum shift complement and control room staffing for the nuclear facility.

2.3 The licensee shall implement and maintain training programs for workers.

2.4 The licensee shall implement and maintain certification programs in accordance with CNSC regulatory document RD-204 CERTIFICATION OF PERSONS WORKING AT NUCLEAR POWER PLANTS.

Persons appointed to the following positions require certification:

(i) Senior Health Physicist;
(ii) Shift Supervisor; and

(iii) Control Room Operator.

3. Operating Performance

3.1 The licensee shall implement and maintain an operations program, which includes a set of operating limits.

3.2 The licensee shall not restart a reactor after a serious process failure without the prior written approval of the Commission, or prior written consent of a person authorized by the Commission.

3.3 The licensee shall notify and report in accordance with CNSC regulatory document REGDOC-3.1.1 REPORTING REQUIREMENTS: NUCLEAR POWER PLANTS.

3.4 The licensee shall implement a periodic safety review in support of its subsequent power reactor operating licence application.

4. Safety Analysis

4.1 The licensee shall implement and maintain a safety analysis program.

5. Physical Design

5.1 The licensee shall implement and maintain a design program.

5.2 The licensee shall implement and maintain a pressure boundary program and have in place a formal agreement with an Authorized Inspection Agency.

5.3 The licensee shall implement and maintain an equipment and structure qualification program.

6. Fitness for Service

6.1 The licensee shall implement and maintain a fitness for service program.

7. Radiation Protection

7.1 The licensee shall implement and maintain a radiation protection program, which includes a set of action levels. When the licensee becomes aware that an action level has been reached, the licensee shall notify the Commission within seven days.

8. Conventional Health and Safety

8.1 The licensee shall implement and maintain a conventional health and safety program.

9. Environmental Protection

9.1 The licensee shall implement and maintain an environmental protection program, which includes a set of action levels. When the licensee becomes aware that an action level has been reached, the licensee shall notify the Commission within seven days.

10. Emergency Management and Fire Protection

10.1 The licensee shall implement and maintain an emergency preparedness program.

10.2 The licensee shall implement and maintain a fire protection program for the Nuclear Power Plant.

11. Waste Management

11.1 The licensee shall implement and maintain a waste management program.

11.2 The licensee shall implement and maintain a decommissioning strategy.

12. Security

12.1 The licensee shall implement and maintain a security program.

13. Safeguards and Non-Proliferation

13.1 The licensee shall implement and maintain a safeguards program.

14. Packaging and Transport

14.1 The licensee shall implement and maintain a packaging and transport program.

15. Solid Radioactive Waste Management Facility (SRWMF)

15.1 The licensee shall implement and maintain a waste management program for the Solid Radioactive Waste Management Facility (SRWMF).

15.2 The licensee shall obtain written approval of the Commission, or consent of a person authorized by the Commission prior to the start of operations at the Phase II Extension of the SRWMF.

15.3 The licensee shall implement and maintain a fire protection program for the SRWMF.

15.4 The licensee shall submit quarterly reports to the Commission on the activities at the SRWMF.

16. Nuclear Substances and Prescribed Equipment

16.1 The licensee shall implement and maintain a program for nuclear substances and prescribed equipment.

16.2 The licensee shall not use nuclear substances in or on human beings.

16.3 The licensee shall not import or export the following items as described in the schedule, Parts A and B, to the Nuclear Non-proliferation Import and Export Control Regulations, subject to any restrictions or exemptions as noted in each paragraph of the schedule:

1. Special fissionable material, as described in paragraph A.1.1:
    (i) Plutonium;
    (ii) Uranium 233; and
    (iii) Uranium enriched in Uranium 233 or Uranium 235.
2. Source material, as described in paragraph A.1.2:
    (i) Uranium, containing the mixture of isotopes that occurs in nature;
    (ii) Uranium, depleted in the isotope Uranium 235; and
    (iii) Thorium.
3. Deuterium and heavy water, as described in paragraph A.1.3.
4. Tritium, as described in paragraph A.1.5.
5. Alpha-emitting nuclear substances, as described in paragraph B.1.1.1, including but not limited to:
    (i) Actinium 225, 227;
    (ii) Californium 248, 250, 252, 253, 254;
    (iii) Curium 240, 241, 242, 243, 244;
    (iv) Einsteinium 252, 253, 254, 255;

(v) Fermium 257;
(vi) Gadolinium 148;
(vii) Mendelevium 258, 260;
(viii) Neptunium 235;
(ix) Polonium 208, 209, 210; and
(x) Radium 223.

6. Radium-226, as described in paragraph B.1.1.16.

16.4 The licensee shall submit an annual compliance report to the Commission on the activities covering the nuclear substances or prescribed equipment.

SIGNED at OTTAWA JUN 14 2017

Michael Binder
President
CANADIAN NUCLEAR SAFETY COMMISSION

D. PROPOSED LICENCES

This appendix includes the following proposed licences:

- Power Reactor Operation Licence, Bruce Nuclear Generating Stations A and B, PROL 18.01/2028
- Power Reactor Operation Licence, Darlington Nuclear Generating Station, PROL 13.02/2025
- Power Reactor Operation Licence, Pickering Nuclear Generating Station, PROL 48.01/2028
- Power Reactor Operation Licence, Point Lepreau Nuclear Generating Station, PROL 17.01/2022

Canadian Nuclear Safety Commission | Commission canadienne de sûreté nucléaire

PDF Ref.: e-Doc 6113854
Word Ref.: e-Doc 6113849
File / Dossier: 2.01

NUCLEAR POWER REACTOR OPERATING LICENCE

BRUCE NUCLEAR GENERATING STATIONS A AND B

I) LICENCE NUMBER: **PROL 18.01/2028**

II) LICENSEE: Pursuant to section 24 of the *Nuclear Safety and Control Act* this licence is issued to:

Bruce Power Inc.
P.O. Box 1540, R.R. #2
Building B10, 177 Tie Road
Municipality of Kincardine
Tiverton, Ontario
N0G 2T0

III) LICENCE PERIOD: This licence is valid from October 1, 2018 to September 30, 2028, unless suspended, amended, revoked or replaced.

IV) LICENSED ACTIVITIES:

This licence authorizes the licensee to:

(i) operate the Bruce Nuclear Generating Stations A and B (hereinafter "Bruce A and B") comprised of reactor units 1 to 4 and 5 to 8 respectively, at the Bruce site located in the County of Bruce in the regional municipality of Kincardine, Province of Ontario; and,

(1) possess, transfer, use, package, manage and store nuclear substances that are required for, associated with, or arise from the activities described in (i), except for booster fuel assemblies;

(2) possess, transfer and use prescribed equipment that is required for, associated with, or arises from the activities described in (i);

(3) possess and use prescribed information that is required for, associated with, or arises from the activities described in (i);

(ii) operate a Class II nuclear facility at the Bruce site; and,

(1) possess, transfer, use, package, manage and store nuclear substances that are required for, associated with, or arise from the activities described in (ii);

(2) possess, transfer and use prescribed equipment that is required for, associated with, or arises from the activities described in (ii);

(iii) possess, transfer, use, manage and store nuclear substances and prescribed equipment to perform industrial radiography throughout the Bruce site;

(iv) import and export nuclear substances and prescribed equipment, except controlled nuclear

substances and controlled nuclear equipment, that are required for, associated with, or arise from the activities described in (i), (ii) and (iii);

(v) possess, manage and store booster fuel assemblies at Bruce A; and

(vi) produce Cobalt-60 at Bruce B.

V) EXPLANATORY NOTES:

(i) Nothing in this licence shall be construed to authorize non-compliance with any other applicable legal obligation or restriction.

(ii) Unless otherwise provided for in this licence, words and expressions used in this licence have the same meaning as in the *Nuclear Safety and Control Act* and associated Regulations.

(iii) The BRUCE NGS A AND B LICENCE CONDITIONS HANDBOOK (LCH) provides compliance verification criteria including the Canadian standards and regulatory documents used to verify compliance with the conditions in the licence. The LCH also provides information regarding delegation of authority, applicable versions of documents and non-mandatory recommendations and guidance on how to achieve compliance.

VI) CONDITIONS:

G. **General**

G.1 The licensee shall conduct the activities described in Part IV of this licence in accordance with the licensing basis, defined as:

(i) the regulatory requirements set out in the applicable laws and regulations;

(ii) the conditions and safety control measures described in the facilities' licence and the documents directly referenced in that licence;

(iii) the safety and control measures described in the licence applications and the documents needed to support those licence applications;

unless otherwise approved in writing by the Canadian Nuclear Safety Commission (CNSC) (hereinafter "the Commission").

G.2 The licensee shall give written notification of changes to the facilities or their operation, including deviation from design, operating conditions, policies, programs and methods referred to in the licensing basis.

G.3 The licensee shall control the use and occupation of any land within the exclusion zones.

G.4 The licensee shall provide, at the Bruce site and at no expense to the Commission, office space for employees of the Commission who customarily carry out their functions on the premises of Bruce A and B (onsite Commission staff).

G.5 The licensee shall implement and maintain a public information and disclosure program.

1. Management System

1.1 The licensee shall implement and maintain a management system.

2. Human Performance Management

2.1 The licensee shall implement and maintain a human performance program.

2.2 The licensee shall implement and maintain the minimum shift complement and control room staffing for Bruce A and B.

2.3 The licensee shall implement and maintain training programs for workers.

2.4 The licensee shall implement and maintain certification programs in accordance with CNSC regulatory document REGDOC-2.2.3, PERSONNEL CERTIFICATION, VOLUME III: CERTIFICATION OF PERSONS WORKING AT NUCLEAR POWER PLANTS. [Amended 2020-03]

Persons appointed to the following positions require certification:

(i) authorized health physicist;
(ii) authorized nuclear operator;
(iii) control room shift supervisor;
(iv) Unit 0 control room operator; and
(v) shift manager.

3. Operating Performance

3.1 The licensee shall implement and maintain an operations program, which includes a set of operating limits.

3.2 The licensee shall not restart a reactor after a serious process failure without the prior written approval of the Commission, or prior written consent of a person authorized by the Commission.

3.3 The licensee shall notify and report in accordance with CNSC regulatory document REGDOC-3.1.1 REPORTING REQUIREMENTS FOR NUCLEAR POWER PLANTS.

4. Safety Analysis

4.1 The licensee shall implement and maintain a safety analysis program.

5. Physical Design

5.1 The licensee shall implement and maintain a design program.

5.2 The licensee shall implement and maintain a pressure boundary program and have in place a formal agreement with an Authorized Inspection Agency.

5.3 The licensee shall implement and maintain an equipment and structure qualification program.

6. Fitness for Service

6.1 The licensee shall implement and maintain a fitness for service program.

7. Radiation Protection

7.1 The licensee shall implement and maintain a radiation protection program, which includes a set of action levels. When the licensee becomes aware that an action level has been reached, the licensee shall notify the Commission within seven days.

8. Conventional Health and Safety

8.1 The licensee shall implement and maintain a conventional health and safety program.

9. Environmental Protection

9.1 The licensee shall implement and maintain an environmental protection program, which includes a set of action levels. When the licensee becomes aware that an action level has been reached, the

licensee shall notify the Commission within seven days.

10. Emergency Management and Fire Protection

10.1 The licensee shall implement and maintain an emergency preparedness program.

10.2 The licensee shall implement and maintain a fire protection program.

11. Waste Management

11.1 The licensee shall implement and maintain a waste management program.

11.2 The licensee shall notify the Commission of any changes regarding the obligations of decommissioning and financial guarantees under the Lease Agreement with Ontario Power Generation Inc., as described in 15.1.

12. Security

12.1 The licensee shall implement and maintain a nuclear security program.

13. Safeguards and Non-Proliferation

13.1 The licensee shall implement and maintain a safeguards program.

14. Packaging and Transport

14.1 The licensee shall implement and maintain a packaging and transport program.

15. Nuclear Facility-Specific

15.1 The licensee shall inform the Commission in writing of any amendments to the Amended and Restated Lease Agreement between Ontario Power Generation Inc., Bruce Power L.P., OPG-Huron A Inc./OPG-Huron B Inc./OPG-Huron Common Facilities Inc., British Energy PLC, Cameco Corporation, TransCanada Pipelines Limited, BPC Generation Infrastructure Trust and Ontario Municipal Employees Retirement Board dated February 14, 2003.

15.2 The licensee shall implement the Integrated Implementation Plan.

15.3 Before hydrogen equivalent concentrations exceed 120 ppm, the licensee shall demonstrate that pressure tube fracture toughness will be sufficient for safe operation beyond 120 ppm.

15.4 The licensee shall implement a return-to-service plan for Major Component Replacement.

15.5 The licensee shall obtain the approval of the Commission, or consent of a person authorized by the Commission, prior to the removal of established regulatory hold points.

15.6 The licensee shall conduct and implement a periodic safety review.

15.7 The licensee shall inform the Commission of any reactor to be removed from commercial operations at Bruce A and B, and shall provide a plan describing the activities and timeline for transitioning from operations to safe storage.

15.8 The licensee shall store and manage booster fuel assemblies at Bruce A in a manner that ensures their physical security.

15.9 The licensee shall implement and maintain a nuclear criticality safety program.

15.10 The licensee shall implement and maintain a program for the receipt, storage and handling of the nuclear substance Cobalt-60 at Bruce B.

15.11 The licensee shall implement and maintain a program for the operation of the Class II nuclear facility.

15.12 The licensee shall implement and maintain a program for nuclear substances and prescribed equipment.

SIGNED on

Rumina Velshi
President
CANADIAN NUCLEAR SAFETY COMMISSION

Canadian Nuclear Safety Commission | Commission canadienne de sûreté nucléaire

Word Ref.: e-Doc 6114405
PDF Ref.: e-Doc 6114417
File / Dossier: 2.01

NUCLEAR POWER REACTOR OPERATING LICENCE

DARLINGTON NUCLEAR GENERATING STATION

I) LICENCE NUMBER: **PROL 13.02/2025**

II) LICENSEE: Pursuant to section 24 of the *Nuclear Safety and Control Act* this licence is issued to:

Ontario Power Generation Inc
700 University Avenue
Toronto, Ontario
M5G 1X6

III) LICENCE PERIOD: This licence is valid from January 1, 2016 to November 30, 2025, unless suspended, amended, revoked or replaced.

IV) LICENSED ACTIVITIES:

This licence authorizes the licensee to:

(i) operate the Darlington Nuclear Generating Station which includes the Darlington Tritium Removal Facility housed within the Heavy Water Management Building (hereinafter "the nuclear facility") at a site located in the Municipality of Clarington, in the Regional Municipality of Durham, in the Province of Ontario;

(ii) possess, transfer, use, package, manage and store the nuclear substances that are required for, associated with, or arise from the activities described in (i);

(iii) import and export nuclear substances, except controlled nuclear substances, that are required for, associated with, or arise from the activities described in (i);

(iv) possess and use prescribed equipment and prescribed information that are required for, associated with, or arise from the activities described in (i);

(v) possess, transfer, process, package, manage and store the nuclear substances associated with the operation of the Darlington Tritium Removal Facility;

V) EXPLANATORY NOTES:

(i) Nothing in this licence shall be construed to authorize non-compliance with any other applicable legal obligation or restriction.

(ii) Unless otherwise provided for in this licence, words and expressions used in this licence have the same meaning as in the *Nuclear Safety and Control Act* and associated Regulations.

(iii) The Darlington NGS Licence Conditions Handbook (LCH) provides compliance verification criteria including the Canadian standards and regulatory documents used to verify compliance with the conditions in the licence. The LCH also provides information regarding delegation of authority, applicable versions of documents and non-mandatory recommendations and guidance on how to achieve compliance.

VI) CONDITIONS:

G. General

G.1 The licensee shall conduct the activities described in Part IV of this licence in accordance with the licensing basis, defined as:

(i) the regulatory requirements set out in the applicable laws and regulations
(ii) the conditions and safety and control measures described in the facility's or activity's licence and the documents directly referenced in that licence
(iii) the safety and control measures described in the licence application and the documents needed to support that licence application;

unless otherwise approved in writing by the Canadian Nuclear Safety Commission (CNSC, hereinafter "the Commission").

G.2 The licensee shall give written notification of changes to the facility or its operation, including deviation from design, operating conditions, policies, programs and methods referred to in the licensing basis.

G.3 The licensee shall control the use and occupation of any land within the exclusion zone.

G.4 The licensee shall provide, at the nuclear facility and at no expense to the Commission, suitable office space for employees of the Commission who customarily carry out their functions on the premises of that nuclear facility (onsite Commission staff).

G.5 The licensee shall maintain a financial guarantee for decommissioning that is acceptable to the Commission.

G.6 The licensee shall implement and maintain a public information and disclosure program.

1. Management System

1.1 The licensee shall implement and maintain a management system.

2. Human Performance Management

2.1 The licensee shall implement and maintain a human performance program.

2.2 The licensee shall implement and maintain the minimum shift complement and control room staffing for the nuclear facility.

2.3 The licensee shall implement and maintain training programs for workers. The certification process and supporting examinations and tests shall be conducted in accordance with CNSC regulatory document REGDOC-2.2.3, PERSONNEL CERTIFICATION, VOLUME III: CERTIFICATION OF PERSONS WORKING AT NUCLEAR POWER PLANTS. [Amended 2020-03]

Persons appointed to the following positions require certification:

(i) Responsible Health Physicist;
(ii) Shift Manager;

(iii) Control Room Shift Supervisor;
(iv) Authorized Nuclear Operator; and
(v) Unit 0 Control Room Operator.

3. Operating Performance

3.1 The licensee shall implement and maintain an operations program, which includes a set of operating limits.

3.2 The licensee shall not restart a reactor after a serious process failure without the prior written approval of the Commission, or prior written consent of a person authorized by the Commission.

3.3 The licensee shall notify and report in accordance with CNSC regulatory document REGDOC-3.1.1 Reporting Requirements: Nuclear Power Plants.

3.4 The licensee shall implement a periodic safety review in support of its subsequent power reactor operating licence application.

4. Safety Analysis

4.1 The licensee shall implement and maintain a safety analysis program.

5. Physical Design

5.1 The licensee shall implement and maintain a design program.

5.2 The licensee shall implement and maintain a pressure boundary program and have in place a formal agreement with an Authorized Inspection Agency.

5.3 The licensee shall implement and maintain an equipment and structure qualification program.

6. Fitness for Service

6.1 The licensee shall implement and maintain a fitness for service program.

7. Radiation Protection

7.1 The licensee shall implement and maintain a radiation protection program, which includes a set of action levels. When the licensee becomes aware that an action level has been reached, the licensee shall notify the Commission within seven days.

8. Conventional Health and Safety

8.1 The licensee shall implement and maintain a conventional health and safety program.

9. Environmental Protection

9.1 The licensee shall implement and maintain an environmental protection program, which includes a set of action levels. When the licensee becomes aware that an action level has been reached, the licensee shall notify the Commission within seven days.

10. Emergency Management and Fire Protection

10.1 The licensee shall implement and maintain an emergency preparedness program.

10.2 The licensee shall implement and maintain a fire protection program.

11. Waste Management

11.1 The licensee shall implement and maintain a waste management program.

11.2 The licensee shall implement and maintain a decommissioning strategy.

12. Security

12.1 The licensee shall implement and maintain a security program.

13. Safeguards and Non-Proliferation

13.1 The licensee shall implement and maintain a safeguards program.

14. Packaging and Transport

14.1 The licensee shall implement and maintain a packaging and transport program.

15. Nuclear Facility-Specific

15.1 The licensee shall implement and maintain an operations program for the Tritium Removal Facility, which includes a set of operating limits.

15.2 The licensee shall implement a return to service plan for refurbishment.

15.3 The licensee shall implement the Integrated Implementation Plan.

15.4 The licensee shall obtain the approval of the Commission, or consent of a person authorized by the Commission, prior to the removal of established regulatory hold points.

15.5 The licensee shall limit the activities of import and export of nuclear substances to those occurring as contaminants in laundry, packaging, shielding or equipment. [Added 2017.10]

SIGNED at OTTAWA _____

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Rumina Velshi
President
CANADIAN NUCLEAR SAFETY COMMISSION

Canadian Nuclear Safety Commission | Commission canadienne de sûreté nucléaire

PDF Ref.: e-Doc 6113988
Word Ref.: e-Doc 6113980
File / Dossier: 2.01

NUCLEAR POWER REACTOR OPERATING LICENCE

PICKERING NUCLEAR GENERATING STATION

I) LICENCE NUMBER: **PROL 48.01/2028**

II) LICENSEE: Pursuant to section 24 of the *Nuclear Safety and Control Act* this licence is issued to:

Ontario Power Generation Inc.
700 University Avenue
Toronto, Ontario
M5G 1X6

III) LICENCE PERIOD: This licence is valid from September 1, 2018 to August 31, 2028, unless suspended, amended, revoked or replaced.

IV) LICENSED ACTIVITIES:

This licence authorizes the licensee to:

(i) operate the Pickering Nuclear Generating Station (hereinafter "the nuclear facility") at a site located in the City of Pickering, in the Regional Municipality of Durham, in the Province of Ontario;

(ii) possess, transfer, use, package, manage and store the nuclear substances that are required for, associated with, or arise from the activities described in (i);

(iii) import and export the nuclear substances, except controlled nuclear substances, that are required for, associated with, or arise from the activities described in (i);

(iv) possess, transfer, produce, package, manage, and store produce Cobalt-60;

(v) possess, transfer, manage and store heavy water from other nuclear facilities;

(vi) transport Category II nuclear material by road vehicle from the nuclear facility spent fuel bay to the onsite waste storage facility;

(vii) possess, transfer, export, package, manage and store nuclear substances, except controlled nuclear substances, from the Western Waste Management Facility;

(viii) possess and use prescribed equipment and prescribed information that are required for, associated with, or arise from the activities described in (i); and

(ix) possess, use, manage and store enriched uranium as required for fission chambers for the Pickering Nuclear Generating Station units 1 and 4 Shutdown System Enhancement, including spares.

V) EXPLANATORY NOTES:

(i) Nothing in this licence shall be construed to authorize non-compliance with any other applicable legal obligation or restriction.

(ii) Unless otherwise provided for in this licence, words and expressions used in this licence have the same meaning as in the *Nuclear Safety and Control Act* and associated Regulations.

(iii) The Pickering NGS Licence Conditions Handbook (LCH) provides compliance verification criteria used to verify compliance with the conditions in the licence. The LCH also provides information regarding delegation of authority, applicable versions of documents and non-mandatory guidance on how to achieve compliance.

VI) CONDITIONS:

G. General

G.1 The licensee shall conduct the activities described in Part IV of this licence in accordance with the licensing basis, defined as:

(i) the regulatory requirements set out in the applicable laws and regulations;
(ii) the conditions and safety and control measures described in the facility's or activity's licence and the documents directly referenced in that licence;
(iii) the safety and control measures described in the licence application and the documents needed to support that licence application;

unless otherwise approved in writing by the Canadian Nuclear Safety Commission (CNSC, hereinafter "the Commission").

G.2 The licensee shall give written notification of changes to the facility or its operation, including deviation from design, operating conditions, policies, programs and methods referred to in the licensing basis.

G.3 The licensee shall control the use and occupation of any land within the exclusion zone.

G.4 The licensee shall provide, at the nuclear facility and at no expense to the Commission, suitable office space for employees of the Commission who customarily carry out their functions on the premises of that nuclear facility (onsite Commission staff).

G.5 The licensee shall maintain a financial guarantee for decommissioning that is acceptable to the Commission.

G.6 The licensee shall implement and maintain a public information and disclosure program.

1. Management System

1.1 The licensee shall implement and maintain a management system.

2. Human Performance Management

2.1 The licensee shall implement and maintain a human performance program.

2.2 The licensee shall implement and maintain the minimum shift complement and control room staffing for the nuclear facility.

2.3 The licensee shall implement and maintain training programs.

2.4 The licensee shall implement and maintain certification programs in accordance with CNSC regulatory document REGDOC-2.2.3, *Personnel Certification, Volume III: Certification of Persons Working at Nuclear Power Plants*. [Amended 2020-03]

Persons appointed to the following positions require certification:

(i) Responsible Health Physicist;
(ii) Shift Manager;
(iii) Control Room Shift Supervisor; and
(iv) Authorized Nuclear Operator.

3. Operating Performance

3.1 The licensee shall implement and maintain an operations program, which includes a set of operating limits.

3.2 The licensee shall not restart a reactor after a serious process failure without the prior written approval of the Commission, or prior written consent of a person authorized by the Commission.

3.3 The licensee shall notify and report in accordance with CNSC regulatory document REGDOC-3.1.1, *Reporting Requirements for Nuclear Power Plants*.

4. Safety Analysis

4.1 The licensee shall implement and maintain a safety analysis program.

5. Physical Design

5.1 The licensee shall implement and maintain a design program.

5.2 The licensee shall implement and maintain a pressure boundary program and have in place a formal agreement with an Authorized Inspection Agency.

5.3 The licensee shall implement and maintain an equipment and structure qualification program.

6. Fitness for Service

6.1 The licensee shall implement and maintain a fitness for service program.

7. Radiation Protection

7.1 The licensee shall implement and maintain a radiation protection program, which includes a set of action levels. When the licensee becomes aware that an action level has been reached, the licensee shall notify the Commission within seven days.

8. Conventional Health and Safety

8.1 The licensee shall implement and maintain a conventional health and safety program.

9. Environmental Protection

9.1 The licensee shall implement and maintain an environmental protection program, which includes a set of action levels. When the licensee becomes aware that an action level has been reached, the licensee shall notify the Commission within seven days.

10. Emergency Management and Fire Protection

10.1 The licensee shall implement and maintain an emergency preparedness program.

10.2 The licensee shall implement and maintain a fire protection program.

11. Waste Management

11.1 The licensee shall implement and maintain a waste management program.

11.2 The licensee shall maintain a decommissioning plan.

12. Security

12.1 The licensee shall implement and maintain a security program.

13. Safeguards and Non-Proliferation

13.1 The licensee shall implement and maintain a safeguards program.

14. Packaging and Transport

14.1 The licensee shall implement and maintain a packaging and transport program.

15. Nuclear Facility-Specific

15.1 The licensee shall implement the Integrated Implementation Plan.

15.2 The licensee shall maintain Units 2 and 3 in the safe storage phase.

15.3 Before Hydrogen equivalent concentration exceeds 120 ppm, the licensee shall demonstrate that pressure tube fracture toughness will be sufficient for safe operation beyond 120 ppm.

15.4 The licensee shall implement and maintain plans for the end of commercial operations of all Pickering units.

15.5 The licensee shall implement and maintain a Cobalt-60 program for activities described under Part IV) of this licence.

15.6 The licensee shall limit the import and export of nuclear substances to those occurring as contaminants in laundry, packaging, shielding or equipment.

SIGNED at OTTAWA _____

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Rumina Velshi
President
CANADIAN NUCLEAR SAFETY COMMISSION

Canadian Nuclear Safety Commission | Commission canadienne de sûreté nucléaire

PDF Ref.: e-Doc 6117084
Word Ref.: e-Doc 6116154
File / Dossier: 2.01

NUCLEAR POWER REACTOR OPERATING LICENCE

POINT LEPREAU NUCLEAR GENERATING STATION

I) LICENCE NUMBER: **PROL 17.01/2022**

II) LICENSEE: Pursuant to section 24 of the *Nuclear Safety and Control Act* this licence is issued to:

New Brunswick Power Corporation
515 King Street
Fredericton, New Brunswick
E3B 5G4

III) LICENCE PERIOD: This licence is valid from July 1, 2017 to June 30, 2022, unless suspended, amended, revoked or replaced.

IV) LICENSED ACTIVITIES:

This licence authorizes the licensee to:

(i) operate the Point Lepreau Nuclear Generating Station (hereinafter "the nuclear facility") and the Point Lepreau Solid Radioactive Waste Management Facility (hereinafter "the waste storage facility") at a site located in Charlotte County and Saint John County, Province of New Brunswick;

(ii) possess, transfer, use, package, manage and store the nuclear substances, that are required for, associated with, or arise from the activities described in (i);

(iii) possess, transfer, import, use, package, manage and store the sealed and unsealed sources and the prescribed equipment;

(iv) transport Category II nuclear material by road vehicle from the nuclear facility spent fuel bay to the onsite waste storage facility; and

(v) possess and use prescribed equipment and prescribed information that are required for, associated with, or arise from the activities described in (i), (iii) and (iv).

V) EXPLANATORY NOTES:

(i) Nothing in this licence shall be construed to authorize non-compliance with any other applicable legal obligation or restriction.

(ii) Unless otherwise provided for in this licence, words and expressions used in this licence have the same meaning as in the *Nuclear Safety and Control Act* and associated Regulations.

(iii) The POINT LEPREAU NGS LICENCE CONDITIONS HANDBOOK (LCH) provides compliance verification criteria used to verify compliance with the conditions in the licence. The LCH also provides information regarding delegation of authority, applicable versions of documents and non-mandatory guidance on how to achieve compliance.

VI) CONDITIONS:

G. **General**

G.1 The licensee shall conduct the activities described in Part IV of this licence in accordance with the licensing basis, defined as:

(i) the regulatory requirements set out in the applicable laws and regulations;
(ii) the conditions and safety and control measures described in the facility's or activity's licence and the documents directly referenced in that licence;
(iii) the safety and control measures described in the licence application and the documents needed to support that licence application;

unless otherwise approved in writing by the Canadian Nuclear Safety Commission (CNSC, hereinafter "the Commission").

G.2 The licensee shall give written notification of changes to the facility or its operation, including deviation from design, operating conditions, policies, programs and methods referred to in the licensing basis.

G.3 The licensee shall control the use and occupation of any land within the exclusion zone.

G.4 The licensee shall provide, at the nuclear facility and at no expense to the Commission, suitable office space for employees of the Commission who customarily carry out their functions on the premises of that nuclear facility (onsite Commission staff).

G.5 The licensee shall maintain a financial guarantee for decommissioning that is acceptable to the Commission.

G.6 The licensee shall implement and maintain a public information and disclosure program.

1. Management System

1.1 The licensee shall implement and maintain a management system.

2. Human Performance Management

2.1 The licensee shall implement and maintain a human performance program.

2.2 The licensee shall implement and maintain the minimum shift complement and control room staffing for the nuclear facility.

2.3 The licensee shall implement and maintain training programs for workers.

2.4 The licensee shall implement and maintain certification programs in accordance with CNSC regulatory document REGDOC-2.2.3, PERSONNEL CERTIFICATION, VOLUME III: CERTIFICATION OF PERSONS WORKING AT NUCLEAR POWER PLANTS. [Amended 2020-03]

Persons appointed to the following positions require certification:

(i) Senior Health Physicist;
(ii) Shift Supervisor; and

(iii) Control Room Operator.

3. Operating Performance

3.1 The licensee shall implement and maintain an operations program, which includes a set of operating limits.

3.2 The licensee shall not restart a reactor after a serious process failure without the prior written approval of the Commission, or prior written consent of a person authorized by the Commission.

3.3 The licensee shall notify and report in accordance with CNSC regulatory document REGDOC-3.1.1 REPORTING REQUIREMENTS: NUCLEAR POWER PLANTS.

3.4 The licensee shall implement a periodic safety review in support of its subsequent power reactor operating licence application.

4. Safety Analysis

4.1 The licensee shall implement and maintain a safety analysis program.

5. Physical Design

5.1 The licensee shall implement and maintain a design program.

5.2 The licensee shall implement and maintain a pressure boundary program and have in place a formal agreement with an Authorized Inspection Agency.

5.3 The licensee shall implement and maintain an equipment and structure qualification program.

6. Fitness for Service

6.1 The licensee shall implement and maintain a fitness for service program.

7. Radiation Protection

7.1 The licensee shall implement and maintain a radiation protection program, which includes a set of action levels. When the licensee becomes aware that an action level has been reached, the licensee shall notify the Commission within seven days.

8. Conventional Health and Safety

8.1 The licensee shall implement and maintain a conventional health and safety program.

9. Environmental Protection

9.1 The licensee shall implement and maintain an environmental protection program, which includes a set of action levels. When the licensee becomes aware that an action level has been reached, the licensee shall notify the Commission within seven days.

10. Emergency Management and Fire Protection

10.1 The licensee shall implement and maintain an emergency preparedness program.

10.2 The licensee shall implement and maintain a fire protection program for the Nuclear Power Plant.

11. Waste Management

11.1 The licensee shall implement and maintain a waste management program.

11.2 The licensee shall implement and maintain a decommissioning strategy.

12. Security

12.1 The licensee shall implement and maintain a security program.

13. Safeguards and Non-Proliferation

13.1 The licensee shall implement and maintain a safeguards program.

14. Packaging and Transport

14.1 The licensee shall implement and maintain a packaging and transport program.

15. Solid Radioactive Waste Management Facility (SRWMF)

15.1 The licensee shall implement and maintain a waste management program for the Solid Radioactive Waste Management Facility (SRWMF).

15.2 The licensee shall obtain written approval of the Commission, or consent of a person authorized by the Commission prior to the start of operations at the Phase II Extension of the SRWMF.

15.3 The licensee shall implement and maintain a fire protection program for the SRWMF.

15.4 The licensee shall submit quarterly reports to the Commission on the activities at the SRWMF.

16. Nuclear Substances and Prescribed Equipment

16.1 The licensee shall implement and maintain a program for nuclear substances and prescribed equipment.

16.2 The licensee shall not use nuclear substances in or on human beings.

16.3 The licensee shall not import or export the following items as described in the schedule, Parts A and B, to the Nuclear Non-proliferation Import and Export Control Regulations, subject to any restrictions or exemptions as noted in each paragraph of the schedule:

1. Special fissionable material, as described in paragraph A.1.1:
    (i) Plutonium;
    (ii) Uranium 233; and
    (iii) Uranium enriched in Uranium 233 or Uranium 235.
2. Source material, as described in paragraph A.1.2:
    (i) Uranium, containing the mixture of isotopes that occurs in nature;
    (ii) Uranium, depleted in the isotope Uranium 235; and
    (iii) Thorium.
3. Deuterium and heavy water, as described in paragraph A.1.3.
4. Tritium, as described in paragraph A.1.5.
5. Alpha-emitting nuclear substances, as described in paragraph B.1.1.1, including but not limited to:
    (i) Actinium 225, 227;
    (ii) Californium 248, 250, 252, 253, 254;
    (iii) Curium 240, 241, 242, 243, 244;
    (iv) Einsteinium 252, 253, 254, 255;
    (v) Fermium 257;
    (vi) Gadolinium 148;

(vii) Mendelevium 258, 260;
(viii) Neptunium 235;
(ix) Polonium 208, 209, 210; and
(x) Radium 223.

6. Radium-226, as described in paragraph B.1.1.16.

16.4 The licensee shall submit an annual compliance report to the Commission on the activities covering the nuclear substances or prescribed equipment.

SIGNED at OTTAWA _____

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Rumina Velshi
President
CANADIAN NUCLEAR SAFETY COMMISSION