



NUCLEAR POWER REACTOR OPERATING LICENCE

DARLINGTON NUCLEAR GENERATING STATION

- I) LICENCE NUMBER:** **PROL 13.01/2015** (Effective Date: January 1, 2015)
- 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 March 1, 2013 to December 31, 2015, 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 Township of Darlington, 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) possess and use prescribed equipment and prescribed information that are required for, associated with, or arise from the activities described in (i);

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 in order to meet the conditions listed 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:**1. General**

- 1.1 The licensee shall conduct the activities described in Part IV of this licence in accordance with the licensing basis, as defined in Canadian Nuclear Safety Commission (CNSC) document [INFO-0795 LICENSING BASIS OBJECTIVE AND DEFINITION](#), unless otherwise approved in writing by the CNSC (hereinafter “the Commission”).
- 1.2 The licensee shall give written notification of changes made to the licensee documents submitted to support the licence application.
- 1.3 Licence condition withdrawn. [Amended 2014.12]
- 1.4 The licensee shall control the use and occupation of any land within the exclusion zone so that no permanent dwelling is permitted.
- 1.5 The licensee shall provide, at the nuclear facility and at no expense to the Commission, office space for employees of the Commission who customarily carry out their functions on the premises of that nuclear facility (on-site Commission staff). The licensee shall keep the office space of on-site Commission staff separate from the remainder of the building in which it is located by walls or other suitable structures.
- 1.6 The licensee shall maintain financial guarantees for decommissioning acceptable to the Commission and shall satisfy the Commission that the financial guarantee remains valid and in effect and sufficient to meet the decommissioning needs.
- 1.7 The licensee shall, in the event of any conflict or inconsistency between licence conditions, codes or standards or regulatory documents referenced in this licence, direct the conflict or inconsistency to the Commission, or a person authorized by the Commission, for resolution.
- 1.8 The licensee shall implement and maintain a public information and disclosure program in accordance with CNSC regulatory document [RD/GD-99.3 PUBLIC INFORMATION AND DISCLOSURE](#).

2. Management System

- 2.1 The licensee shall implement and maintain a management system in accordance with the Canadian Standards Association (CSA) standard [N286 MANAGEMENT SYSTEM REQUIREMENTS FOR NUCLEAR POWER PLANTS](#).

3. Human Performance Management

- 3.1 The licensee shall implement and maintain a human performance program.
- 3.2 The licensee shall implement and maintain the minimum shift complement for the nuclear facility.

3.3 The licensee shall implement and maintain a training program that includes certification training and examinations for positions requiring certified personnel 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.

4. Operating Performance

4.1 The licensee shall implement and maintain an operations program, which must have as components:

- (i) a Safe Operating Envelope in accordance with CSA standard [N290.15 REQUIREMENTS FOR THE SAFE OPERATING ENVELOPE FOR NUCLEAR POWER PLANTS](#);
- (ii) a set of operating policies and principles; and
- (iii) accident management procedures and/or guides for design basis and beyond design basis accidents, including overall strategies for recovery.

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

4.3 The licensee shall notify and report in accordance with CNSC regulatory document [REGDOC 3.1.1](#) [Amended 2014.12]
[REPORTING REQUIREMENTS FOR NUCLEAR POWER PLANTS](#).

5. Safety Analysis

5.1 The licensee shall implement and maintain a safety analysis program in accordance with CNSC regulatory documents: [Amended 2014.12]

- (i) [REGDOC-2.4.1 DETERMINISTIC SAFETY ANALYSIS](#); and
- (ii) [REGDOC-2.4.2 PROBABILISTIC SAFETY ASSESSMENT \(PSA\) FOR NUCLEAR POWER PLANTS](#).

5.2 The licensee shall ensure that design and analysis computer codes and software used to support the safe operation of the nuclear facility are in accordance with CSA standard [N286.7 QUALITY ASSURANCE OF ANALYTICAL, SCIENTIFIC AND DESIGN COMPUTER PROGRAMS FOR NUCLEAR POWER PLANTS](#).

6. Physical Design

6.1 The licensee shall implement and maintain a design program.

6.2 The licensee shall implement and maintain a pressure boundary program in accordance with CSA standard [N285.0 GENERAL REQUIREMENTS FOR PRESSURE RETAINING SYSTEMS AND COMPONENTS IN CANDU NUCLEAR POWER PLANTS](#) and have in place a formal agreement, deemed acceptable to the Commission or a person authorized by the Commission, with an Authorized Inspection Agency.

6.3 The licensee shall implement and maintain an environmental qualification program in accordance with CSA standard [N290.13 ENVIRONMENTAL QUALIFICATION OF EQUIPMENT FOR CANDU NUCLEAR POWER PLANTS](#).

7. Fitness for Service

7.1 The licensee shall implement and maintain a fitness for service program in accordance with CNSC regulatory documents and CSA standards:

- (i) [S-210 MAINTENANCE PROGRAMS FOR NUCLEAR POWER PLANTS](#);
- (ii) [RD/GD-98 RELIABILITY PROGRAMS FOR NUCLEAR POWER PLANTS](#);
- (iii) [N285.4 PERIODIC INSPECTION OF CANDU NUCLEAR POWER PLANT COMPONENTS](#);
- (iv) [N285.5 PERIODIC INSPECTION OF CANDU NUCLEAR POWER PLANT CONTAINMENT COMPONENTS](#); and
- (v) [N287.7 IN SERVICE EXAMINATION AND TESTING REQUIREMENTS FOR CONCRETE CONTAINMENT STRUCTURES FOR CANDU NUCLEAR POWER PLANTS](#).

In addition, the fitness for service program shall include an in-service inspection program for the safety significant balance of plant pressure retaining systems and components, and safety-related structures.

8. Radiation Protection

8.1 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 three working days.

9. Conventional Health and Safety

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

10. Environmental Protection

10.1 The licensee shall implement and maintain an environmental protection program in accordance with CNSC regulatory document [S-296 ENVIRONMENTAL PROTECTION POLICIES, PROGRAMS AND PROCEDURES AT CLASS 1 NUCLEAR FACILITIES AND URANIUM MINES AND MILLS](#).

10.2 The licensee shall control and monitor releases of nuclear substances to the environment in accordance with CSA standard [N288.1 GUIDELINES FOR CALCULATING DERIVED RELEASE LIMITS FOR RADIOACTIVE MATERIAL IN AIRBORNE AND LIQUID EFFLUENTS FOR NORMAL OPERATION OF NUCLEAR FACILITIES](#). The licensee shall also have a set of environmental action levels. When the licensee becomes aware that an environmental action level has been reached, the licensee shall notify the Commission within three working days.

10.3 The licensee shall control and monitor the releases of hazardous substances.

11. Emergency Management and Fire Protection

11.1 The licensee shall implement and maintain an emergency preparedness program, and conduct exercises in accordance with CNSC regulatory document [RD-353 TESTING AND IMPLEMENTATION OF EMERGENCY MEASURES](#).

11.2 The licensee shall implement and maintain a fire protection program in accordance with CSA standard [N293 FIRE PROTECTION FOR CANDU NUCLEAR POWER PLANTS](#).

12. Waste Management

- 12.1 The licensee shall implement and maintain an in-plant waste management program.
- 12.2 The licensee shall implement and maintain a decommissioning program in accordance with CSA standard [N294 DECOMMISSIONING OF FACILITIES CONTAINING NUCLEAR SUBSTANCES](#).

13. Security

- 13.1 The licensee shall implement and maintain a security program in accordance with CNSC regulatory documents:
- (i) [S-298 NUCLEAR RESPONSE FORCE STANDARD](#);
 - (ii) [RD-363 NUCLEAR SECURITY OFFICER MEDICAL, PHYSICAL, AND PSYCHOLOGICAL FITNESS](#);
 - (iii) [RD-321 CRITERIA FOR PHYSICAL PROTECTION SYSTEMS AND DEVICES AT HIGH-SECURITY SITES](#); and
 - (iv) [RD-361 CRITERIA FOR EXPLOSIVE SUBSTANCE DETECTION, X-RAY IMAGING, AND METAL DETECTION DEVICES AT HIGH-SECURITY SITES](#).

14. Safeguards

- 14.1 The licensee shall implement and maintain a safeguards program and undertake all measures required to ensure safeguards implementation at the nuclear facility, including physical inventory accounting and reporting of inventory changes in accordance with CNSC regulatory document [RD-336 ACCOUNTING AND REPORTING OF NUCLEAR MATERIAL](#).

[Amended
2014.12]**15. Packaging and Transport**

- 15.1 The licensee shall implement and maintain a packaging and transport program.

16. Nuclear Facility-Specific

- 16.1 The licensee shall implement and maintain an operations program for the Tritium Removal Facility, which includes as a component a set of operating policies and principles.

SIGNED at OTTAWA DEC 22 2014

Michael Binder
President
CANADIAN NUCLEAR SAFETY COMMISSION