



Canadian Nuclear
Safety Commission

Commission canadienne
de sûreté nucléaire

Record of Proceedings, Including Reasons for Decision

In the Matter of

Applicant **Ontario Power Generation**

Subject **Application for the Issuance of a Licence to
Abandon for the Bruce Heavy Water Plant**

Hearing Date **February 3, 2014**

RECORD OF PROCEEDINGS

Applicant: Ontario Power Generation

Address/Location: 700 University Avenue
Toronto, Ontario
M5G 1X6

Purpose: Application for the Issuance of a Licence to Abandon for
the Bruce Heavy Water Plant

Application received: June 24, 2013

Date of hearing: February 3, 2014

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

Members present: M. Binder, Chair

Secretary: M. A. Leblanc
Recording Secretary: D. Carrière

Licence: Issued

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1.0 INTRODUCTION

1. Ontario Power Generation (OPG) has submitted a request to the Canadian Nuclear Safety Commission¹ (CNSC), under subsection 24(2) of the *Nuclear Safety and Control Act*² (NSCA), for the issuance of a Licence to Abandon and for the revocation of the current Heavy Water Plant Decommissioning Licence for the Bruce Heavy Water Plant. The facility is located on the shore of Lake Huron, near Kincardine, Ontario.
2. The Bruce Heavy Water Plant (BHWP) was a facility owned and operated by OPG that was located within the boundaries of the Bruce Nuclear Site. The BHWP produced heavy water from 1973 until the last facilities were shutdown in March 1998.
3. Following a public hearing held on February 4, 2004, the Commission issued, pursuant to section 24 of the NSCA, a decommissioning licence which allowed OPG to proceed with decommissioning the BHWP. The decommissioning licence became effective April 1, 2004 and was issued for a period of 10 years. In March 2007, upon OPG's request, Amendment No. 1 to the decommissioning licence was issued by the Commission authorizing the demolition of two additional buildings which had not been included for demolition in the original plan.
4. OPG has since completed the decommissioning of the facility. OPG's intention is to release the BHWP from CNSC regulatory control and to allow the site to be used for other industrial purposes. The scope of the decommissioning included the demolition of all above-ground structures, except for concrete floor slabs and foundations which remained in place. Additionally, some buildings and structures have remained undisturbed and in working order to be used for other activities.

Issue

5. In considering the application, the Commission was required to decide, pursuant to subsection 24(4) of the NSCA:
 - a) if OPG is qualified to carry on the activity that the licence would authorize; and
 - b) if in carrying on that activity, OPG would make adequate provision for the protection of the environment, the health and safety of persons and the maintenance of national security and measures required to implement international obligations to which Canada has agreed.

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

² Statutes of Canada (S.C.) 1997, chapter (c.) 9.

Hearing

6. Pursuant to section 22 of the NSCA, the President of the Commission established a Panel of the Commission to review the application. The Commission, in making its decision, considered information presented for a hearing held on February 3, 2014 in Ottawa, Ontario. During the hearing, the Commission considered written submissions from OPG (CMD 13-H103.1) and CNSC staff (CMD 13-H103). Members of the public were invited to file written submissions, but none were received.

2.0 DECISION

7. Based on its consideration of the matter, as described in more detail in the following sections of this *Record of Proceedings*, the Commission concludes that OPG is qualified to carry on the activity that the licence will authorize. The Commission is of the opinion that OPG, in carrying on that activity, will make adequate provision for the protection of the environment, the health and safety of persons and the maintenance of national security and measures required to implement international obligations to which Canada has agreed. Therefore,

the Commission, pursuant to section 24 of the *Nuclear Safety and Control Act*, issues Ontario Power Generation a Licence to Abandon, HWPAL-01.00/2014, for the Bruce Heavy Water Plant located on the shore of Lake Huron, near Kincardine, Ontario. The licence is valid from February 4, 2014 to March 4, 2014.

Furthermore, concurrent with the above new licence coming into effect, the Commission revokes the Heavy Water Plant Decommissioning Licence HWPDL-01.00/2014 and Amendment No. 1 to HWPDL-01.00/2014.

3.0 ISSUES AND COMMISSION FINDINGS

8. In making its decision, the Commission considered the assessment of the end-state decommissioning of the BHWP facility and the adequacy of the measures implemented for protecting the environment, the health and safety of persons, national security and international obligations to which Canada has agreed.

3.1 Assessment of the Application

9. CNSC staff reviewed OPG's application for a Licence to Abandon the BHWP and found that it meets the requirements of the NSCA and its Regulations for a Licence to Abandon.
10. CNSC staff stated having assessed the environmental protection and human health-related provisions of the NSCA and its Regulations. CNSC staff reported that hazardous waste,

which included asbestos, lagoon sludge and other contaminated soils, was characterized and transported in accordance with the requirements of the Ontario Ministry of the Environment's (OMOE) Regulations, the *Transportation of Dangerous Goods Regulations*³ and other applicable federal and provincial regulations. CNSC staff stated that municipal by-laws pertaining to the transportation, recycling and disposal of wastes were also observed. Furthermore, CNSC staff reported on the following activities:

- the removal of asbestos was performed by qualified asbestos abatement contractors prior to the onset of demolition;
- the lagoon water was filtered and drained, contaminated rock was disposed in an OMOE licensed facility, and remaining contaminated soil was bio-remediated by an external contractor;
- other contaminated soils were analyzed and excavated for disposal at OMOE licensed facilities.

CNSC staff stated that some remaining contaminated soils could not be removed due to the proximity to an operational medium pressure steam line left on the site (discussed further in section 3.1.2).

3.1.1 Final End-State Report Assessment – Bruce Heavy Water Plant

11. CNSC staff reviewed OPG's Final End-State Report Assessment for the BHWP. CNSC staff reported that approximately 97% by weight of the waste from demolition was recycled. All waste was monitored for radioactive contamination before leaving the site and no contamination was detected. CNSC staff also reported that uranium foils and infrared absorption analyzers that were part of the BHWP Laboratory were transferred to a licensed laboratory under the care and control of Bruce Power.
12. CNSC staff reported that a final radiological survey was performed in 2012 and found no radioactive contamination on the BHWP site. CNSC staff explained that, since there were no sources of radioactivity associated with the production of heavy water, and ground contamination survey of part of the BHWP performed in the spring of 2000 demonstrated no evidence of contamination in work areas, there was no requirement to measure personnel dose during the decommissioning project.
13. The Commission is of the opinion that the end-state radiological conditions found in the decommissioning plan have been met.

3.1.2 Bruce Heavy Water Plant Environmental Assessment Follow-up and Monitoring Closure Report

14. CNSC staff reviewed OPG's Bruce Heavy Water Plant Environmental Assessment Follow-up and Monitoring Closure Report. CNSC staff reported that all of the parameters

³ SOR/2001-286.

measured in the EA follow-up monitoring were within the end-state criteria by the end of 2012 except for petroleum hydrocarbon concentrations in groundwater collected from the bedrock below the remediated areas, at the former oil storage area and the former E3 enrichment unit area. CNSC staff provided information on the petroleum hydrocarbon contaminations and stated that the source term of the contamination was removed during decommissioning; therefore, the concentration of petroleum hydrocarbon in ground water is expected to decrease with time to eventually drop below the end-state criteria.

CNSC staff stated that, because there are minor and localized petroleum hydrocarbon contaminations that remain at the site, a continued obligation on OPG will remain in relation to OMOE oversight of these areas. CNSC staff stated that the OMOE indicated that there was “no objection to CNSC issuing a Licence to Abandon the BHWP which will result in releasing the site from CNSC regulatory control”. CNSC staff considers that provincial requirements associated with the minor amounts of residual petroleum hydrocarbon contamination at these localized areas on site have been satisfied.

15. CNSC staff reported that the results of the EA Follow-up and Monitoring Program confirmed the predictions and assessments of the environmental effects of the project that were documented in the EA that was conducted following the application for the issuance of the decommissioning licence.
16. The Commission is satisfied that the environmental effects of the project have been properly assessed. This assessment confirmed that OPG will make adequate provision for the protection of the environment under the proposed licence.

3.1.3 Unplanned Events

17. CNSC staff reported that several minor abnormal occurrences and incidents were reported during the demolition phase of the project. CNSC staff stated that these were also summarized in the reports submitted to CNSC staff under the decommissioning licence, which were previously reported to the Commission during the 2006 and 2009 interim status reports. These included four minor first aid injuries that did not result in any lost time accidents and 8 minor events that did not result in personal injury. CNSC staff stated that OPG’s responses to the incidents and events were appropriate.
18. The Commission is satisfied that responses to events that occurred during the demolition of the BHWP were adequate.

3.2 Safeguards and Non-Proliferation

19. CNSC staff reported that, under the *Safeguard Agreement* between the CNSC and the International Atomic Energy Agency (IAEA), Canada is required to provide the IAEA access to decommissioned facilities in Canada on a 24-hour notice. CNSC staff explained that this legal requirement continues to apply after the CNSC releases the facility from its

regulatory oversight. CNSC staff stated that there is little risk in the CNSC being unable to provide access to the IAEA to this site in the future, if needed.

20. The effective date of the proposed licence to abandon is approximately one month. During this period, the licensee will continue to be required to provide the IAEA with such reasonable services and assistance to enable the agency to carry out its duties and functions pursuant to Canada's Safeguards Agreements.
21. Based on the information provided, the Commission is satisfied that the provisions in the areas of safeguards and non-proliferation at the facility have been met.

3.3 Aboriginal Engagement

22. The common law Duty to Consult with Aboriginal communities and organizations applies when the Crown contemplates actions that may adversely affect established or potential Aboriginal or treaty rights.
23. CNSC staff assessed the requirement for Aboriginal engagement in relation to this project and determined that the Duty to consult does not arise since the proposed activities will have no adverse impact on potential or established Aboriginal or treaty rights. CNSC staff reported that the Chippewas of Saugeen First Nation and the Chippewas of Nawash Unceded First Nation were informed of OPG's request for a Licence to Abandon the BHWP and were given the opportunity to participate in the hearing process.
24. Based on the above information, the Commission acknowledges the efforts made in relation to the CNSC's obligations regarding Aboriginal consultation and the Legal Duty to Consult.

3.4 OPG's Public Information Program

25. CNSC staff stated that OPG has continued to update local advisory groups on the status of decommissioning the BHWP. CNSC staff reported that the CNSC and OPG had not received any enquiries about activities at the BHWP since June 2006.
26. The Commission agrees with CNSC staff that OPG's public information activities have been transparent and sufficient.

3.5 Cost Recovery and Financial Guarantees

27. Concerning cost recovery, CNSC staff confirmed that OPG is compliant with the CNSC's *Cost Recovery Fees Regulations*.

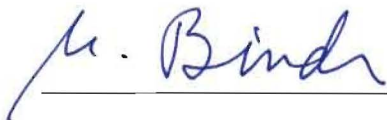
28. The Commission agrees with CNSC staff's conclusion that a financial guarantee is no longer required for the BHWP facility.

3.6 Nuclear Liability Act

29. CNSC staff reported that the *Nuclear Liability Act*⁴ does not apply since the BHWP was not considered to be a "nuclear installation" nor did it contain any "nuclear material" as defined by the Act.
30. The Commission agrees that there is no need for the BHWP to have nuclear liability insurance.

4.0 CONCLUSION

31. The Commission has considered the information and submissions from OPG and CNSC staff.
32. The Commission is satisfied that the applicant meets the requirements of subsection 24(4) of the *Nuclear Safety and Control Act*. That is, the Commission is of the opinion that the applicant is qualified to carry on the activity that the proposed licence will authorize and that the applicant will make adequate provisions 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.
33. Therefore, the Commission, pursuant to section 24 of the *Nuclear Safety and Control Act*, issues Ontario Power Generation a Licence to Abandon, HWPAL-01.00/2014, for the Bruce Heavy Water Plant located on the shore of Lake Huron, near Kincardine, Ontario. The licence is valid from February 4, 2014 to March 4, 2014.
34. The Commission, pursuant to section 24 of the *Nuclear Safety and Control Act*, concurrently revokes the Heavy Water Plant Decommissioning Licence HWPDL-01.00/2014 and Amendment No. 1 to HWPDL-01.00/2014.



Michael Binder
President,
Canadian Nuclear Safety Commission

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Date

⁴ R.S.C., 1985, c. N-28