



Canadian Nuclear
Safety Commission

Commission canadienne
de sûreté nucléaire

Revised Record of Proceedings, Including Reasons for Decision

In the Matter of

Applicant Hydro-Québec

Subject Application to amend Hydro-Québec's operating
licence for the Gentilly-2 Nuclear Generating
Station

Hearing
Date September 16, 2014

REVISED RECORD OF PROCEEDINGS

Applicant: Hydro-Québec

Address: 4900 Bécancour Boulevard, Bécancour, Quebec
G9H 3X3

Subject: Application to amend Hydro-Québec's operating licence for the
Gentilly-2 Nuclear Generating Station

Application received: March 6, 2014

Date of hearing: July 22 and September 16, 2014 (administrative review)

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

Members present: M. Binder, President

Secretary: M. Leblanc
Recording Secretary: M. Hornof

Licence: Amended

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1.0 Introduction

1. Hydro-Québec has applied to the Canadian Nuclear Safety Commission¹ (CNSC) for an amendment to its operating licence for the Gentilly-2 Nuclear Generating Station (NGS), located in Bécancour, Quebec. The current licence – PROL 10.01/2016 – expires on June 30, 2016.
2. Following the decision to proceed with the decommissioning of the Gentilly-2 NGS, the reactor's defuelling has been completed. The station has been in a defueled core state since September 4, 2013. Its transition to a safe storage state is planned for 2015. Cobalt-60 production ceased in 2011, and will not resume.
3. The proposed amendments to the operating licence would adapt the regulatory requirements to the reduction in risks associated with the plant, and remove certain licence conditions that no longer apply to Gentilly-2's new status. Hydro-Québec also proposes to amend its obligations as set out in regulatory document S-99, *Reporting Requirements for Operating Nuclear Power Plants*, and licence condition 4.6 (which specifies reporting requirements for scheduled reports).

Issue

4. In considering the application, the Commission was required to decide, pursuant to subsection 24(4) of the *Nuclear Safety and Control Act* (NSCA):
 - a) whether Hydro-Québec is qualified to carry on the activities authorized by the amended licence
 - b) whether, in carrying on that activity, Hydro-Québec would make adequate provision for the protection of the environment, the health and safety of persons and the maintenance of national security and measures required to implement international obligations to which Canada has agreed

Hearing

5. Pursuant to section 22 of the NSCA, the President of the Commission established a Commission panel to review the application. In making its decision, the Commission considered the information presented at a hearing held on January 22, 2014, in Ottawa, Ontario. At the hearing in July 2014, the Commission considered written submissions from Hydro-Québec (CMD 14-H103.1) and CNSC staff (CMD 13-H103). **However, after the decision was released, the Commission was informed that a submission had been made by the Direction de santé publique de la Mauricie et du Centre-du-Québec (CMD 14-H103.2) within the timelines established in the hearing**

¹The 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.

notice, but the submission was not added to the record for the hearing. Consequently, the Commission reviewed its decision on its own motion under subsection 43(2) of the NSCA. Hydro-Québec received a notice about the review process and made a supplementary submission (CMD 14-H103.1A). The review of the decision made on July 22, 2014, was conducted by examining the submissions (CMD) on September 16, 2014.

2.0 Decision

6. 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 Hydro-Québec meets the conditions of subsection 24(4) of the NSCA. Therefore,

pursuant to section 24 of the *Nuclear Safety and Control Act*, the Commission amends operating licence PERP 10.01/2016, issued to Hydro-Québec for its Gentilly-2 Nuclear Generating Station, located in Bécancour, Quebec. The amended licence, PERP 10.02/2016, remains valid until June 30, 2016.

The Commission also approves Hydro-Québec's application for exemption from the obligation to produce certain scheduled reports, as provided for in CNSC regulatory document S-99, *Reporting Requirements for Operating Nuclear Power Plants*, and licence condition 4.6, as described in CMD 14-H103.

7. The Commission includes in the licence the conditions recommended by CNSC staff in CMD 14-H103.

3.0 Issues and Commission Findings

8. The amendments proposed to the Gentilly-2 operating licence are to align the licence with the changes being made to the facility (to transition it to the safe storage state). CNSC staff considers the proposed amendments to the licence to be of an administrative nature.

3.1 Clerical amendments

9. Hydro-Québec has applied to the CNSC for clerical amendments to the operating licence. The proposed amendments to the licence conditions and the rationale for those changes are detailed in CMD 14-H103.
10. Hydro-Québec requested amendments to specify that the facility may be operated in the defueled core state or safe storage state only. The amendments clearly define the states in which plant operation is authorized until the next licence renewal in 2016.

Hydro-Québec also requested that Appendix 3 to the licence be removed, and that the derived release limits be included in the licence conditions handbook (LCH). The same action was taken for Pickering's last licence renewal. Hydro-Québec requested that the licence conditions specify that the licensee must implement the decommissioning program, not only maintain it.

11. CNSC staff indicated that the amendments would have no impact on the safety of Gentilly-2, and that they clearly define the states in which the plant's operation is authorized. CNSC staff recommends the approval of those amendments to the Gentilly-2 operating licence.

3.2 Removal of licence conditions that no longer apply

12. Hydro-Québec applied to the CNSC to remove licence conditions that no longer apply, since the Gentilly-2 NGS is in a defueled core state. The licence conditions proposed for removal and the rationale for the changes are detailed in CMD 14-H103.
13. Hydro-Québec is requesting the removal of the licence conditions that no longer apply to the station (since cobalt-60 production ceased in 2011), and to the reactor (which is in a defueled core state, in transition to the safe storage state).
14. In regard to Hydro-Québec's application to remove a licence condition referring to CNSC regulatory document RD-360, *Life Extension of Nuclear Power Plants*, CNSC staff indicated that certain elements of the environmental impact assessment for the refurbishment of Gentilly-2 and the expansion of the storage site still apply, even though the plant will not be refurbished. CNSC staff proposes to include in the LCH Hydro-Québec's obligation to maintain the follow-up program for those elements of the environmental impact assessment that are still pertinent.
15. **In its submission, the Direction de santé publique de la Mauricie et du Centre-du-Québec asked Hydro-Québec to maintain its environmental monitoring program for at least five years. In its supplementary submission, Hydro-Québec stated that a review of the environmental monitoring program is underway, to take the plant's current status into account.**
16. **The Direction de santé publique de la Mauricie et du Centre-du-Québec also requested that the Commission ask Hydro-Québec to maintain its network of telemetric survey equipment until all of the documents used to analyze potential accident scenarios involving the spent fuel storage bay and the heavy water tanks have been examined by the radiological risk assessment team. In its supplementary submission, Hydro-Québec stated that its survey equipment was used to measure the external dose rate in specific locations following a loss of coolant and a loss of containment. The equipment would therefore be needed only until the fuel was completely spent. The tritium in the heavy water, which is the primary radiological risk now that the reactor has been defueled, cannot be**

detected by the equipment. Hydro-Québec stated that its decision to remove the equipment was announced in 2013 to stakeholders associated with the external nuclear emergency response plan.

17. CNSC staff has reviewed the amendments proposed by Hydro-Québec concerning licence conditions that no longer apply and should be removed (since Gentilly-2 is in a defueled core state). CNSC staff recommends the approval of those amendments.

3.3 Amendments to licence conditions, to account for reduced risk and Gentilly-2's change of status

18. Hydro-Québec applied to the CNSC to amend the licence conditions to take into account that the risk of operating the Gentilly-2 NGS is greatly reduced, given its defueled core state. The licence conditions proposed for amendment and the rationale for the changes are detailed in CMD 14-H103.
19. Hydro-Québec requested amendments to the operating licence to amend its obligations respecting the minimum shift crew (number of workers required and their accreditation), to reflect the reduced risk associated with the plant's state. Hydro-Québec also requested the minimum shift crew table to be moved within the LCH, to facilitate changes to that team.
20. **The Direction de santé publique de la Mauricie et du Centre-du-Québec asked Hydro-Québec to specify how the level of risk and complexity of events have been considerably reduced. This would enable them to inform area residents appropriately about the residual risks posed by the plant. Hydro-Québec indicated in its supplementary submission that meetings were organized with Hydro-Québec and various stakeholders associated with the nuclear emergency response plan, including the Direction de la santé publique, to provide information about the remaining risks associated with Gentilly-2, the phases of the decommissioning project, its progress and the risk analysis approach. The results of the risk analysis for the plant's current status will be presented to stakeholders associated with the Gentilly-2 external nuclear emergency response plan, beginning in the fall of 2014.**
21. Hydro-Québec requested the removal or amendment of several licence conditions that refer to the standards and regulatory documents applicable to an operating power reactor, to reflect the plant's current status and to prohibit fuelling. These standards and regulatory documents are identified in CMD 14-H103.
22. **In light of the request to remove licence condition 5.2, which requires the implementation and maintenance of a probabilistic safety analysis program, the Direction de santé publique asked for a new licence condition requiring appropriate accident scenarios to be incorporated into emergency response plans. Hydro-Québec indicated in its supplementary submission that the analyses**

required to evaluate the relevant accident scenarios for the plant's current status will be updated as part of the safety report review that is required by the end of 2014.

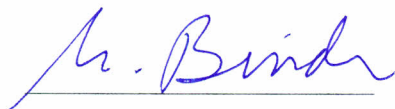
23. CNSC staff has reviewed the amendments proposed to take into account the reduced risk associated with Gentilly-2, and recommends the approval of those amendments.

3.4 Application for exemption from S-99 for certain scheduled reports

24. Hydro-Québec applied to the CNSC for exemption from (or amendments to) its obligation to produce certain scheduled reports, as set out in regulatory document S-99, as cited in licence condition 4.6 of the operating licence. Those reports are identified in CMD 14-H103.
25. As Gentilly-2 is in a defueled core state, and the risk associated with a reactor in that state is greatly reduced, Hydro-Québec requests exemption from the obligation to produce those reports. Hydro-Québec also requests a reduction in frequency (from quarterly to annually) for the report on pressure boundary degradations.
26. CNSC staff has reviewed Hydro-Québec's applications for exemption from (or amendments to) its obligation to produce certain scheduled reports, as per regulatory document S-99, and recommends the approval of those amendments.

4.0 Conclusion

27. The Commission has considered the information and submissions from Hydro-Québec and CNSC staff. It concludes that the requested amendments are administrative in nature, given the plant's current status, and will not adversely affect the safety of Hydro-Québec's operations.
28. **The Commission also notes that Hydro-Québec will give a presentation on the status of the decommissioning project at a public Commission meeting on December 17 and 18, 2014.**



Michael Binder
President
Canadian Nuclear Safety Commission

SEP 16 2014

Date