



Environmental Assessment Report:
Hydro-Québec
Application for a Decommissioning Licence for the
Gentilly-2 Nuclear Power and Waste Management
Facility

March 2016



EXECUTIVE SUMMARY

The Canadian Nuclear Safety Commission (CNSC) conducts environmental assessments (EA) under the *Nuclear Safety and Control Act* (NSCA) for all projects in accordance with its mandate to ensure the protection of the environment and the health of persons (the safety component of the CNSC's mandate is covered in the safety case assessment carried out for all projects).

This EA Report, written by CNSC staff for the Commission and the public, describes the findings of the EA under the NSCA completed for the licence application by Hydro-Québec to decommission the Gentilly-2 NPP and waste management facility (PROL 10.03/2016 operating licence expires on June 30, 2016). This EA under the NSCA includes CNSC staff's assessment of the licence application and the documents submitted in support of the application, annual environmental monitoring reports, the results of previous studies, compliance verification activities (e.g., inspections, audits, and reviews) conducted at the Gentilly-2 facility, as well as the findings of CNSC's Independent Environmental Monitoring Program (IEMP).

The EA Report focuses on items that are of current public and regulatory interest such as quality of air, groundwater, surface water and habitat, as well as application of the *Fisheries Act*.

CNSC staff's findings from this EA under the NSCA include, but are not limited to, the following:

- Based on CNSC staff monitoring of activities and results of the environmental radiation monitoring program at the Gentilly-2 facility, there is no release of radioactive substances from the facility that has posed an unacceptable risk for the environment or the public.
- The results obtained over the current licensing period show that the radiation dose received by the public near the Gentilly-2 facility remained below 1% of the legal public dose limit.
- Analysis of the environmental risk based on environmental monitoring indicates that Hydro-Québec is making adequate provision for the protection of the public and the environment.
- Total reactor shutdown will eliminate temperature effects in the outlet canal on fish survival and reproduction, and will contribute to reducing impingement and entrainment of fish, although not eliminating it completely.
- Tritium concentrations in groundwater and surface water are currently below drinking water guidelines recommended by Health Canada. Reactor shutdown eliminates a major component of tritium released from the facility, which should result in a gradual decline of these concentrations.
- The preliminary IEMP results confirm that the public and the environment near Bécancour and the Gentilly-2 facility are safe and there is no likely impact on health.

Based on the EA conducted under the NSCA for this licence application, CNSC staff conclude that Hydro-Québec has made and will continue to take adequate measures for the protection of the environment and the health of persons.

The information presented in this EA Report supports the recommendation made by CNSC staff to the Commission in the Commission Members Document (CMD), to grant a decommissioning licence for nuclear power reactor no. 10.00/2026, for Gentilly-2 and the radioactive waste management facilities, for a period of 10 years, until June 30, 2026.