



**Environmental Assessment Report:
Bruce Power Inc. – Bruce Nuclear Generating
Stations A and B – PROL 18.00/2020 Licence
Renewal**

February 2018



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 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 Bruce Power Inc. (Bruce Power) to renew the Bruce A and B Nuclear Generating Stations Power Reactor Operating Licence (PROL 18.00/2020) for a period of 10 years, from September 1, 2018 to August 31, 2028. During the licensing period, Bruce Power is also proposing to implement the Major Component Replacement Project (MCR) for the purpose of extending the operational life of Bruce A and B.

This EA report 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 Bruce site, 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 releases to air, groundwater and surface water, for ongoing operations and those related to the MCR project.

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

- Bruce Power's environmental protection programs meet CNSC regulatory requirements.
- Bruce Power's environmental risk assessment (ERA), which assessed the environmental (ecological and human health) risks from radiological, non-radiological and physical stressors associated with current facility operations, is in accordance with CSA Group Standard N288.6-12, *Environmental risk assessment at class I nuclear facilities and uranium mines and mills* (2012).
- Bruce Power's predictive environmental assessment within the ERA, which assessed the potential environmental (ecological and human health) effects from radiological, non-radiological and physical stressors associated with continued operations and the Major Component Replacement Project, is in accordance with the overall methodology of CSA Group Standard N288.6-12, *Environmental risk assessment at class I nuclear facilities and uranium mines and mills* (2012).

- The results from other regional monitoring programs carried out by other levels of government confirm that the environment and health of persons around the Bruce site are protected.
- The results of CNSC's IEMP confirm that the public and the environment in the vicinity of the Bruce site are protected from the releases from Bruce A and B.

CNSC staff concluded that the potential risk from physical stressors and radiological and non-radiological releases to the atmospheric, terrestrial, hydrogeological, aquatic and human environment are generally low to negligible and the ERA to be consistent with the overall methodology of the CSA Group Standard N288.6-12. CNSC staff's review of the Bruce Power ERA identified areas that would benefit from further clarification and/or additional information. CNSC staff will review the implementation of these recommendations through the review of Bruce Power's environmental monitoring program reports and through future revisions of the ERA.

This EA under the NSCA conducted for the renewal of the Bruce A and B Power Reactor Operating Licence concludes that Bruce Power has and will continue to make adequate provision for the protection of the environment and the health of persons. The implementation of the recommendations outlined above do not affect these conclusions. CNSC staff will continue to verify and ensure that, through ongoing licensing and compliance activities and reviews, the environment and the health of persons are protected and will continue to be protected until the safe state and abandonment of Bruce A and B.