



Canadian Nuclear
Safety Commission

Commission canadienne
de sûreté nucléaire

Record of Proceedings, Including Reasons for Decision

In the Matter of

Proponent Dalhousie University

Subject Environmental Assessment Screening
Regarding the Proposal to Decommission the
Dalhousie University SLOWPOKE-2 Reactor
Facility in Halifax, Nova Scotia

Hearing Date January 20, 2011

RECORD OF PROCEEDINGS

Proponent: Dalhousie University

Address/Location: 6299 South Street, Halifax, Nova Scotia, B3H 4H6

Purpose: Environmental Assessment Screening regarding the proposal to decommission the Dalhousie University SLOWPOKE-2 Reactor Facility

Application received: November 29, 2004

Date of hearing: January 20, 2011

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

Members present: M. Binder, Chair

Secretary: M.A. Leblanc

Recording Secretary: D. Major

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Introduction

1. Dalhousie University has notified the Canadian Nuclear Safety Commission¹ (CNSC) of its intention to decommission the Dalhousie University SLOWPOKE-2 Reactor (DUSR) Facility, located in the Life Sciences Centre on the Dalhousie University campus in Halifax, Nova Scotia.
2. The DUSR facility is part of Dalhousie University's Trace Analysis Research Centre. The current non-power reactor operating licence, NPROL-17.03/2013, is valid until June 30, 2013. In November 2004, the Canadian Nuclear Safety Commission¹ (CNSC) received a notice from Dalhousie University of its intent to de-fuel and decommission the DUSR facility. At that time, Dalhousie University had provided a brief outline of the project to initiate the environmental assessment (EA) process. The EA process was subsequently put on hold at the request of the proponent in May 2006. In July 2008, Dalhousie University notified the CNSC of its intention to proceed with decommissioning and the CNSC re-started the EA process.
3. The project, as described in Dalhousie University's project description, includes the following components:
 - preparation of the rooms in the building where the reactor is located, by removal of all items not required for the defueling and decommissioning process;
 - preliminary surveys to identify areas with potential radioactive contamination;
 - defueling of the reactor and disposal of the fuel;
 - dismantling of the reactor components and identifying radioactive, contaminated, hazardous, and clean components;
 - packaging and transportation of all radioactive components for authorized disposal or storage;
 - disposal of other radioactive and non-radioactive waste; and
 - decontamination of the site to render it free of residual radioactive contamination.
4. The authorization of this activity will require the issuance of a Licence to Decommission for the proposed defueling and dismantling of the DUSR facility, a Licence to Transport for the shipment of the removed fuel and all irradiated contaminated material from the reactor facility to a licence disposal facility and a Licence to Abandon for the completion of the project, pursuant to subsection 24(2) of the *Nuclear Safety and Control Act*² (NSCA).

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.

5. Before the Commission is able to make a licensing decision in respect to the proposed project, the Commission must, in accordance with the requirements of the *Canadian Environmental Assessment Act*³ (CEAA), make a decision on an Environmental Assessment (EA) screening of the proposed project. The Commission is the sole responsible authority⁴ (RA) for the EA. Health Canada and Environment Canada identified themselves as federal authorities (FAs) for the purpose of providing expert assistance to CNSC staff during the EA.
6. The EA Guidelines were presented to the Commission for approval, and the Commission issued a decision on March 24, 2009, approving the EA Guidelines⁵. The Commission indicated that an EA Screening would be considered in a closed session of the Commission. The EA Guidelines were used in delegating the conduct of technical studies for the screening of this project to Dalhousie University, pursuant to section 17 of the CEAA. Dalhousie University commissioned Atomic Energy of Canada Limited (AECL) to complete the Environmental Impact Statement Report. Dalhousie University provided the technical studies which underwent a review by experts at the CNSC and other relevant government departments. The resulting EA Study Report was then used by CNSC staff for the preparation of the draft EA Screening Report (Screening Report). Stakeholders, including the FAs, were provided an opportunity to review the draft Screening Report prior to its finalization and submission to the Commission for this hearing and decision.
7. This *Record of Proceedings* describes the Commission's consideration of the Screening Report and its reasons for decisions on the results. The Screening Report of Dalhousie University's proposal to decommission the DUSR Facility is attached as an appendix to CMD 10-H124.

Issue

8. In considering the Screening Report, the Commission was required to decide:
 - a) whether the Screening Report is complete; that is, whether all of the factors and instructions set out in the approved EA Guidelines and subsection 16(1) of the CEAA were adequately addressed;
 - b) whether the project, taking into account the mitigation measures identified in the Screening Report, is likely to cause significant adverse environmental effects;

³ S.C. 1992, c. 37.

⁴ Responsible Authority in relation to an EA is determined in accordance with subsection 11(1) of the CEAA.

⁵ Record of Proceedings on *Environmental Assessment Guidelines for the Proposal to Decommission the Dalhousie University SLOWPOKE-2 Reactor in Halifax, Nova Scotia*, hearing date March 24, 2009.

- c) whether the project must be referred to the federal Minister of the Environment for referral to a review panel or mediator, pursuant to paragraph 20(1)(c) of the CEAA; and
- d) whether the Commission can proceed with its consideration of a licence application under the *Nuclear Safety and Control Act*, consistent with paragraph 20(1)(a) of the CEAA.

Hearing

9. 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 January 20, 2011 in Ottawa, Ontario. During the hearing, the Commission considered written submissions from CNSC staff (CMD 10-H124) and Dalhousie University (CMD 10-H124.1).

Decision

10. Based on its consideration of the matter, as described in more detail in this *Record of Proceedings*, the Commission decides that:

- a) the Environmental Assessment Screening Report appended to CMD 10-H124 is complete; that is, the scope of the project and assessment were appropriately determined in accordance with section 15 and 16 of the *Canadian Environmental Assessment Act*, and all of the required assessment factors were addressed during the assessment;
- b) the project, taking into account the mitigation measures identified in the Environmental Assessment Screening Report, is not likely to cause significant adverse environmental effects;
- c) it will not refer the project to the federal Minister of the Environment for his referral to a federal Environment Assessment review panel or mediator;
- d) it will proceed to consider the licence application under the provisions of the *Nuclear Safety and Control Act*, consistent with paragraph 20(1)(a) of the *Canadian Environmental Assessment Act*.

Issues and Commission Findings

11. The findings of the Commission are based on the Commission's consideration of all the information and submission available for reference on the record for the hearing.

Completeness of the Screening Report

12. In its consideration of the completeness of the Screening Report, the Commission considered whether the assessment had adequately addressed the scope of project and assessment factors.
13. CNSC staff noted that the EA Screening Report included the assessment of the direct and indirect effects of the project on the environment, as well as describing the project works and activities to identify those project-environment interactions that would result in a measurable change to the existing environment. CNSC staff added that the assessment considered activities related to the normal operations and the effects of probable malfunctions and accidents. It also considered effects of the environment on the proposed project and cumulative environmental effects.
14. Based on the Commission's review of the EA Guidelines and Screening Report, the Commission concludes that the scope of the project and the scope of the factors for the assessment are appropriate and that all of the required factors were addressed during the assessment.
15. The Commission also concludes that the EA Screening Report is complete and compliant with the requirements of the CEAA.

Likelihood and Significance of Environmental Effects

16. This section contains the Commission's findings with respect to whether the project is likely to cause significant adverse environmental effects, taking into account the identified mitigation measures.
17. The activities associated with this project that have a potential interaction with the environment are:
 - removal of items not required for the defueling and decommissioning process;
 - preliminary survey of Rooms 1870 and 1871;
 - defueling of the reactor and disposal of the fuel;
 - dismantling of the reactor components;
 - packaging and transportation of contaminated parts;
 - disposal of other radioactive/non-radioactive wastes outside the reactor vessel;
and
 - monitoring activities.

Adequacy of the Assessment Methods

18. The Screening Report contains information regarding the potential interactions between project activities and the existing environment related to normal operations and the effects of probable malfunctions and accidents. In its submission, CNSC staff noted that the methodology used in the assessment of the direct and indirect effects of the proposed project on the environment was carried out in a step-wise manner as follows:
1. identification of potential interactions between the proposed project and the environment;
 2. identification of each project-environment interaction likely to result in measurable adverse changes in the environment;
 3. identification of measures to mitigate environmental effects of the project;
 4. determination of adverse effects that could remain following the application of mitigation measures (residual effects); and
 5. determination of the significance of the residual effects.

This screening methodology was based on regulatory standards and guidelines, existing conditions, scientific literature and the experience of technical specialists.

19. Based on its review of the Screening Report and the above information, the Commission concludes that the EA methods are acceptable and appropriate.

Effects of the Project on the Environment

20. CNSC staff stated that 37 potential interactions were identified. Most interactions are not expected to result in measurable effects, thus no further assessment was required. Interactions expected to result in measurable effects were further analysed and mitigation measures were proposed to minimize hazards.
21. CNSC staff noted that mitigation measures are proposed for interactions expected to result in measurable environmental effects, and no residual effects are predicted following the application of these mitigation measures.
22. Based on its review of the Screening Report and the above-noted information and considerations, the Commission concludes that the proposed project, taking into account the identified mitigation measures, is not likely to cause significant adverse environmental effects.

Effects of the Environment on the Project

23. CNSC staff reported that the influence of naturally occurring events that can produce extreme conditions affecting the performance of project activities have been considered within the EA. CNSC staff provided information regarding extreme weather conditions and discussed the mitigation measures that are in place in order to address the effects of the environment on the project. CNSC staff explained that the environment is not expected to have an impact on the project. It is only expected to potentially have an impact on the transportation of radioactive material, for which mitigation measures were defined.
24. Based on the above information, the Commission concludes that the environment is not likely to cause significant adverse effects on the project.

Effects of Accident and Malfunction Events

25. CNSC staff informed the Commission about the identification of accidents and malfunctions and the criteria used to judge the events. CNSC staff explained that two potential accidents were identified, and that both of these potential accident scenarios are unlikely. CNSC staff also indicated that prevention measures and contingency plans are considered in the Screening Report to prevent, eliminate or minimize the occurrence or effects arising from accidents and malfunctions. These measures include the measurement of excess radioactivity in the reactor before work is started to establish a baseline as well as during decommissioning work to prevent reaching the upper operating limit for excess radioactivity.
26. Based on its review of the Screening Report and the above-noted information, the Commission concludes that accident and malfunction events are not likely to cause significant adverse effects on the environment.

Cumulative Effects

27. CNSC staff presented an assessment of cumulative environmental effects. CNSC staff explained that the effects of a proposed project must be considered together with the effects of other projects and activities that are being carried out, or will be carried out, and are expected to overlap with those of the proposed project. CNSC staff stated that, for the proposed project, there are no anticipated cumulative effects on the environment as the project is not expected to produce any effects. During the preparation phase, there is a potential for a cumulative noise effect that is anticipated to be of short duration.
28. Based on the information received, the Commission concludes that, taking into account the identified mitigation measures, significant adverse cumulative effects are not expected to occur as a result of the project.

Follow-Up Program

29. CNSC staff stated that a follow-up program was not considered appropriate for the project as the project will occur on a currently licensed facility, existing monitoring programs are in place and the project will be of short duration.
30. Based on its review of the Screening Report and the above-noted information, the Commission is satisfied that existing monitoring programs are in place and will be adequate for verifying, and if necessary, identifying where additional mitigation measures may be required during the project implementation.

Conclusions on the Likelihood and Significance of Adverse Environmental Effects

31. Based on the considerations and reasons noted above, the Commission concludes that the proposed project is not likely to cause significant adverse environmental effects, taking into account the identified mitigation measures.
32. The Commission is satisfied that the likelihood and significance of the effects have been identified with reasonable certainty.

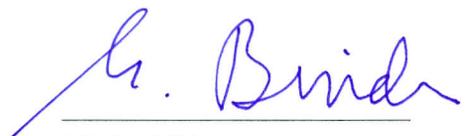
Nature and Level of Public Concern

33. With respect to public concern as a factor in its consideration of whether to refer the project to the federal Minister of the Environment for a review panel or mediator, the Commission examined whether the public had sufficient opportunity to become informed about the project and the Environmental Assessment, and express their views on it. The Commission examined the nature and level of concern expressed by the public.
34. CNSC staff stated that EA documents, including the draft Screening Report, were made accessible to the public via notices on the Canadian Environmental Assessment Agency's public registry and on the CNSC website. CNSC staff stated that members of the public made three requests for copies of the Screening Report, but that no comments were received.
35. CNSC staff provided information regarding the Aboriginal Consultation activities undertaken with respect to the project. CNSC staff indicated that the Executive Director of the Confederacy of Mainland Mi'kmaq was informed of the project and the Acting Director, Lands, Environment and Natural Resources of the Confederacy of Mainland Mi'kmaq was provided with the opportunity to review the EASR. No comments were received by CNSC staff.

36. Based on the information provided in the Screening Report and during the hearing, the Commission is of the view that there was sufficient opportunity for the public to be informed and express its views on the project. The Commission therefore decides not to refer the project to the Minister of the Environment for referral to a review panel or mediator under paragraph 20(1)(c) of the CEAA.

Conclusion

37. The Commission concludes that the environmental assessment Screening Report attached to CMD 10-H124 is complete and meets all of the applicable requirements of the *Canadian Environmental Assessment Act*.
38. The Commission concludes that the project, taking into account the appropriate mitigation measures identified in the Screening Report, is not likely to cause significant adverse environmental effects.
39. Furthermore, the Commission also concludes that, at this time, it will not request the federal Minister of the Environment to refer the project to a review panel or mediator in accordance with the provisions of the CEAA.
40. Therefore, the Commission, pursuant to paragraph 20(1)(a) of the CEAA, can proceed with the consideration of a licence application under the *Nuclear Safety and Control Act* which, if approved, would allow the project to proceed.



Michael Binder
President,
Canadian Nuclear Safety Commission

JAN 20 2011

Date