

Record of Proceedings, Including Reasons for Decision

In the Matter of

Proponent Atomic Energy of Canada Limited

Subject Environmental Assessment Guidelines (Scope
of Project and Assessment) for the Proposed
Construction and Operation of a Bulk Materials
Landfill at the Chalk River Laboratories

Hearing
Date October 31, 2007

RECORD OF PROCEEDINGS

Proponent: Atomic Energy of Canada Limited

Address/Location: Chalk River Laboratories, Chalk River, Ontario K0J 1J0

Purpose: Environmental Assessment Guidelines (Scope of Project and Assessment) for the proposed construction and operation of a Bulk Materials Landfill at the Chalk River Laboratories

Application received: September 25, 2007

Date of hearing: October 31, 2007

Location: Canadian Nuclear Safety Commission (CNSC) Public Hearing Room, 280 Slater St., 14th. Floor, Ottawa, Ontario

Members present: L.J. Keen, Chair
C.R. Barnes
A. Harvey

Secretary: K. McGee
Recording Secretary: M. Young
General Counsel: S. Maislin Dickson

Applicant Represented By	Document Number
<ul style="list-style-type: none">• B. McGee, Vice President and Chief Nuclear Officer• W. Inch, General Manager of Nuclear Operations• P. Tonner, Manager of Waste Management Operations• C. Gallagher, Manager of the Environmental Protection Program at Chalk River• M. Klukas, Section Head, Environmental Assessment• D. Cox, Senior Director of the NLBU Project Office• J. Walker, Manager, Project Safety and Licensing	CMD 07-H147.1 CMD 07-H147.1A
CNSC staff	Document Number
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Date of Release of Decision: December 11, 2007

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Introduction

1. Atomic Energy of Canada Limited (AECL) has notified the Canadian Nuclear Safety Commission¹ (CNSC) of its intent to construct and operate a Bulk Materials Landfill at the site of its Chalk River Laboratories (CRL) located in Chalk River, Ontario.
2. The proposed landfill would be engineered to receive bulk materials containing very low levels of radioactivity. The bulk materials include dewatered sewage sludge from the CRL Sewage Treatment Plant, soils from routine excavations and like materials. The proposed landfill would provide capacity for bulk material wastes generated over approximately 100 years.
3. Before the Commission is able to make licensing decisions pursuant to the *Nuclear Safety and Control Act*² (NSCA) in respect of 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) of the proposal. The Commission is the sole Responsible Authority (RA) for the EA⁴.
4. In carrying out this responsibility under the CEAA, the Commission must first determine the *scope of the project* and the *scope of the assessment*. To assist the Commission in this regard, CNSC staff prepared a draft Environmental Assessment Guidelines document (EA Guidelines) in consultation with other government departments, the public and other stakeholders. The draft EA Guidelines [*Proposed EA Guidelines (Scope of Project and Assessment), Environmental Assessment of the Proposed Construction and Operation of the Bulk Materials Landfill by Atomic Energy of Canada at the Chalk River Laboratories in Chalk River, Ontario*] contain draft statements of scope for the approval of the Commission. The draft EA Guidelines also contain recommendations and instructions for the approach to be used in completing the EA, including for the conduct of further public and stakeholder consultations. The draft EA Guidelines are presented in the CNSC staff document CMD 07-H147.

Issues

5. In considering the EA Guidelines, the Commission was required to decide, pursuant to subsections 15(1) and 16(3) of the CEAA respectively:
 - a) the *scope of the project* for which the EA is to be conducted; and
 - b) the *scope of the factors* to be taken into consideration in the conduct of the EA.

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 S.C. 1997, c. 9.

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.

6. The Commission also considered whether it would, at this time, recommend to the federal Minister of the Environment, pursuant to section 25 of the CEAA, to refer the project to a mediator or a review panel.
7. The Commission considered whether it would, pursuant to subsection 17(1) of the CEAA, delegate the conduct of technical support studies to AECL.
8. Furthermore, the Commission undertook to decide whether or not the Commission's consideration of the completed EA Screening Report (Screening Report) would be by way of a public hearing, where the public is invited to participate, or by way of a hearing, where there is no public participation.
9. The Commission also considered CNSC staff's proposed streamlined approach to the consideration of the project where the information related to the licensing application would be presented in the context of the hearing held for the consideration of the Screening Report.

Hearing

10. Pursuant to section 22 of the NSCA, the President of the Commission established a Panel of the Commission to hear this matter. In establishing the process, the Commission decided to hold a hearing on the matter, in accordance with the Commission's process for determining matters under the CEAA⁵.
11. In making its decision, the Commission considered information presented for a hearing held on October 31, 2007 in Ottawa, Ontario. During the hearing, the Commission considered written submissions from CNSC staff (CMD 07-H147 and CMD 07-H147.A) and AECL (CMD 07-H147.1 and CMD 07-H147.1A). CNSC staff and AECL were present at the hearing to answer questions from the Commission. The public was invited to observe the proceeding.

⁵ The Commission decided (ref. Minutes of Commission Meeting held on March 23, 2005) that, unless otherwise specified, Commission will not hold public hearings in respect of its decisions on the scope of environmental assessments to be conducted pursuant to the CEAA. The CNSC staff process for engaging the public and other stakeholders in the preparation of the draft EA Guidelines for presentation to the Commission at a hearing, without public participation is normally sufficient at this early stage in the EA process.

Decision

12. Based on its consideration of the matter, as described in more detail in the following sections of this *Record of Proceedings*,

the Canadian Nuclear Safety Commission, pursuant to sections 15 and 16 of the CEAA, approves the *Proposed EA Guidelines (Scope of Project and Assessment), Environmental Assessment of the Proposed Construction and Operation of the Bulk Materials Landfill by Atomic Energy of Canada at the Chalk River Laboratories in Chalk River, Ontario*.

13. The Commission approves the EA Guidelines as presented by CNSC staff in CMD 07-H147, with the following modifications. The Commission modifies the EA Guidelines attached to CMD 07-H147 as recommended by CNSC staff during the hearing. In Section 8.0 of the proposed EA Guidelines, the following factor will be added to the factors to be considered in the screening: “An assessment of the long-term performance of the waste facility, given that a specific proposal to decommission or abandon the facility is difficult to describe at this time.” The Commission also includes the editorial revision recommended by CNSC staff in CMD 07-H147.A.
14. The Commission also decides that it will not, at this time, refer the project, pursuant to section 25 of the CEAA, to the federal Minister of the Environment for his referral to a mediator or review panel. The Commission notes that it may make such a referral at any time during the course of the EA process if warranted.
15. Pursuant to subsection 17(1) of the CEAA, the Commission decides that it will delegate the conduct of technical support studies to the proponent, AECL.
16. The Commission decides that it will consider the completed Screening Report in the context of a public hearing of the Commission.

Issues and Commission Findings

Type of Environmental Assessment Required

Screening vs. Comprehensive Study, Review Panel or Mediation

17. The project is not of a type identified in the *Comprehensive Study List Regulations*⁶. Neither section 7 of the CEAA nor Schedule 1 of the *Exclusion List Regulations*⁷ of the CEAA identifies any exclusion from an EA for such a project. Therefore,

⁶ S.O.R./94-638.

⁷ S.O.R./94-639.

pursuant to subsection 18(1) of the CEAA, the CNSC is required to ensure that a screening environmental assessment of the project is performed and a Screening Report is prepared before the Commission can make a licensing decision under the NSCA to allow the project to proceed in whole or in part.

18. Other available types of assessment under the CEAA are a review panel or mediation appointed by the federal Minister of the Environment. To initiate either of these alternative assessment processes, the Commission would need to refer the project to the Minister pursuant to section 25 of the CEAA. In this regard, CNSC staff stated in its submissions that it is not aware at this time of any potentially significant environmental effects or public concern associated with this project which, in its opinion, would warrant having the project referred to a mediator or review panel.
19. Based on the information received, the Commission concludes that a Screening EA of the project is required pursuant to the CEAA. The Commission further decides that, at this time, it will not refer the project to the Minister of the Environment for referral to a mediator or a review panel. However, because the Commission may make such a referral at any time, the Commission requests that CNSC staff inform the Commission in a timely manner of any significant issues or public concerns that arise during the conduct of the EA and which may warrant further consideration of the need for a review panel or mediator.

Consultations on the Draft EA Guidelines

20. As part of its review of the adequacy of the draft EA Guidelines and, in particular, to assess the level of public concern about the project for the purpose of considering the aforementioned options for mediation or review panel, the Commission took account of the views of the public and other stakeholders. In this regard, the Commission considered whether the consultations carried out thus far by CNSC staff and the proponent provided the public and other stakeholders with adequate opportunity to become informed and express their views about the EA.

Government Consultation

21. CNSC staff reported that, in accordance with the CEAA *Regulations Respecting the Coordination by Federal Authorities of Environmental Assessment Procedures and Requirements*⁸, CNSC staff has consulted on the draft EA Guidelines, and will continue to consult during the course of the EA, with the relevant Federal Authorities, including Environment Canada, Health Canada and Natural Resources Canada. CNSC staff noted that no other federal departments identified themselves as Responsible Authorities for the EA, or as expert federal authorities for the purpose of providing technical assistance.

⁸ S.O.R./97-181.

22. CNSC staff stated that it also consulted with the Ontario Ministry of the Environment (MOE), which has confirmed that the Ontario *Environmental Assessment Act*⁹ does not apply to this project. The MOE reviewed the EA Guidelines and had no comments.

Public Consultation

23. With respect to public consultation on the draft EA Guidelines, CNSC staff reported that it had established a public registry for the assessment as required by Section 55 of the CEAA, including the identification of the EA in the Canadian Environmental Assessment Registry.
24. CNSC staff stated that the public was provided opportunity to comment on the EA Guidelines from July 17, 2007 to August 17, 2007. CNSC staff noted that copies of the project description were sent to citizens, stakeholders and the nearby Aboriginal peoples (Algonquins of Pikwakanagan First Nation). CNSC staff reported that no comments were received during the public review period.
25. CNSC staff noted that all comments received during the above consultations were taken into consideration in the preparation of the draft EA Guidelines. Information on the disposition of each comment was attached to CMD 07-H147 as Attachment 2.

Conclusion on the EA Guidelines Consultations

26. The Commission is satisfied that the public and other stakeholders have been adequately consulted during the preparation of the draft EA Guidelines. The Commission is satisfied that CNSC staff has taken an active role in consulting the public.
27. The Commission is satisfied that, for the purpose of considering whether to refer the project to the Minister for a review panel or mediation, it has sufficient information to assess the current level and nature of public concern about the project.

Scope of the Project

28. “Scope” under the CEAA is expressed in two parts: the *scope of the project* (i.e., the physical works and activities proposed) and the *scope of assessment* (i.e., the scope of the factors to be considered in assessing the effects of the project). This section addresses only the issues relating to the *scope of the project*. The issues related to the *scope of assessment* are discussed below in the section entitled Scope of the Assessment.

⁹ R.S.O. 1990, c.E18.

29. CNSC staff stated that, as the Responsible Authority for the project, it must consider which physical works fall within the scope of the project, and which undertakings in relation to those physical works fall within the scope of the project. CNSC staff stated that the scope of the proposed project consists of the physical works, namely the construction and operation of the engineered landfill.
30. In the draft EA Guidelines, CNSC staff outlined the physical works, comprised of an engineered landfill with a footprint of 6,300 metres squared (m^2), including a landfill liner, as well as all associated equipment, systems and services required for construction and operation of the landfill and the transfer of sewage sludge from the CRL Sewage Treatment Plant.
31. CNSC staff further outlined the undertakings in relation to the physical works, including site preparation, construction and operation of the facility and the associated equipment. CNSC staff outlined the physical activities within the scope of the project for both the construction and operation of the facility.
32. The Commission inquired about the excess CRL-generated material that would be placed in the landfill. AECL responded that the excess material is non-contaminated soil that has been excavated from the site. AECL stated that the soil is a suitable material to be used as cover for the sewage sludge, and in the event that there is an excess amount, it could be stored on the site as needed.
33. The Commission asked AECL about the roll-off containers that are presently used for the temporary storage of dewatered sewage sludge on the site that are depicted in AECL's submission. AECL replied that the amount of sludge that will be produced each year is 160 cubic metres (m^3) and each container holds approximately $10 m^3$. AECL noted that there are about 30 containers currently on the site.
34. The Commission asked if any of the bulk materials will come from sites other than CRL. AECL stated that the waste material would only come from CRL.
35. The Commission expressed concern about the proposed placement of gravel on top of the liner due to the potential risk of perforation. AECL responded that it will follow the standard procedure for liner installation and noted that the liner will be tested to verify its performance.
36. Based on the information received, the Commission accepts CNSC staff's recommendations concerning the *scope of the project* and approves the definition of the project scope as set out in Section 7.0 of the draft EA Guidelines without change.

Scope of the Assessment

37. The other part of “scope” under the CEAA is the *scope of the assessment* – otherwise described in the CEAA as the scope of the factors that will be considered in assessing the environmental effects of the project.
38. The scope of a screening assessment under the CEAA must include the factors set out in paragraphs 16(1)(a) to (d) of the CEAA. Other factors may be included at the discretion of the Commission under paragraph 16(1)(e) of the CEAA.
39. The mandatory factors in subsection 16(1) of the CEAA are: the environmental effects of the project, including the environmental effects of malfunctions or accidents that may occur in connection with the project and any cumulative environmental effects that are likely to result from the project in combination with other projects or activities that have been or will be carried out; significance of these effects; the comments from the public that are received in accordance with the CEAA and its regulations; and measures that are technically and economically feasible and that would mitigate any significant adverse environmental effects of the project.
40. As allowed by paragraph 16(1)(e) of the CEAA, CNSC staff recommended that the CNSC would also require consideration of the purpose of the project; the need for, and requirement of, a follow-up program in respect of the project; alternative means of carrying out the project that are technically and economically feasible and the environmental effects of any such alternatives.
41. CNSC staff noted that additional or more specific factors or issues to address in the EA may be identified following consultation with the expert Federal Authorities, stakeholders and the nearby Aboriginal peoples during the conduct of the EA.
42. The Commission inquired about the extent of groundwater monitoring for the project. AECL responded that there is a developed process for the groundwater monitoring program that involves conducting groundwater monitoring around a specific facility, dependent on the risk involved with the facility. AECL confirmed that groundwater monitoring will be included as part of the EA. AECL further stated that it measures the baseline groundwater quality for the site, along with surface water monitoring, both of which are reported annually to the CNSC.
43. Further to the issue of groundwater monitoring, CNSC staff stated that a follow-up program would need to be consistent with the results of the EA. CNSC staff stated that the process to follow the EA would be to review the technical documents and the licensing documents, and determine the need for any modifications to the existing environmental monitoring programs or for a specific follow-up program.

44. The Commission inquired about AECL's organizational management structure pertaining to the proposed project, and how it incorporates quality assurance (QA) and quality control (QC). AECL stated that the operation of the Bulk Materials Landfill would occur under the direction of the general manager of Decommissioning and Waste Management. AECL noted that QA and QC are within that organization. CNSC staff stated that the Bulk Materials Landfill would fall under the site licence for CRL and AECL is required to have a corporate Quality Assurance Program as well as a site-specific program.
45. The Commission notes the importance for AECL to manage the proposed project within the broader management of the CRL facilities, including any overall waste management plan.
46. The Commission inquired about the assessment of the cumulative effects of the project at the CRL site. CNSC staff stated that AECL has submitted a ten-year rolling plan for the waste management and decommissioning projects at the facility. CNSC staff stated that it expects that this information will be included as a basis for the cumulative environmental effects. CNSC staff further stated that AECL has a plan to have baseline information compiled and updated on a regular basis so that the information is current for the present EA and any future EAs.
47. The Commission, noting the long-term nature of the waste facility, stressed the importance of the issue of malfunctions and accidents. CNSC staff stated that this type of landfill has been built and operated both in Ontario and elsewhere, and, as such there is operating experience that includes malfunctions and defects that AECL can incorporate into the Malfunctions and Accidents section of the Screening Report.

Temporal and Spatial Scope of the Project

48. CNSC staff reported that the EA Guidelines include a description of spatial and temporal boundaries of the assessment. CNSC staff noted that the temporal boundaries of the assessment would be the planned duration of the project, except where the effects of the project are anticipated to continue beyond the operation of the facility. CNSC staff noted that geographic study areas were also suggested, including the site study area, the local study area and the regional study area.
49. The Commission asked CNSC staff to clarify its description of the temporal boundaries. CNSC staff stated that the assessment will be done to a level that, should the environmental impact of the facility decrease in the future, the level of detailed information required for the assessment will be adjusted accordingly.

Conclusion on the Scope of the Assessment

50. Based on the above information and considerations, the Commission concludes that the *scope of the assessment*, as described in section 9 of the draft EA Guidelines, is appropriate for the purpose of the environmental assessment of the proposed project.

EA Structure and Approach

51. CNSC staff explained that the Screening Report will follow a defined structure and will include: application of the CEAA, scope of the project, scope of the assessment, project description, description of the existing environment, scope of the assessment and methodology, assessment and mitigation of environmental effects, cumulative environmental effects, significance of residual effects, follow-up program, and stakeholder consultation.
52. CNSC staff summarized the methodology of the assessment of the effects caused by the project. CNSC staff stated that this methodology is performed following four steps: identify interactions between the project and the environment, describe the resulting changes that might occur, identify and describe potential mitigation measures, and describe the significance of the environmental effects that will likely occur as a result of the project.
53. Based on the above information and considerations, the Commission is satisfied that the structure, approach, and other instructions for conducting the environmental assessment, as described in the EA Guidelines attached to CMD 07-H147, are acceptable.

Public Concern on the Project

54. CNSC staff reported that no comments from the public were received during the public review period for the draft EA Guidelines.
55. As noted in paragraph 27, the Commission is satisfied that the public received adequate opportunity to identify concerns regarding the draft EA Guidelines.
56. 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.
57. The Commission, noting its comments concerning the overall waste management plan at AECL, requests that AECL delineate its overall waste management plan to the public such that the public and the Commission can become more aware of the project's placement in the overall plan.

Process for Consideration of Environmental Assessment Screening Report

58. The Commission examined CNSC staff's recommendations on the process to be followed for the consideration of the EA Screening Report and the licensing application.
59. CNSC staff suggested options for two different processes. CNSC staff stated that the first suggested process is an integrated and systematic approach (streamlined process), where AECL would provide information in sufficient detail to comply with the requirements of the CEAA and the licensing application under the NSCA. CNSC staff explained that this information could then be reviewed and presented in a public hearing for a decision on the Screening Report and review of the licensing documentation in support of an application for a licence amendment. Then, if the Commission decides that the requirements of the CEAA are met, the Commission could subsequently consider the licence amendment application in the context of a separate hearing, with no further public participation.
60. CNSC staff also proposed the status quo as an alternative process, which involves a hearing on the Screening Report to be followed by a separate, future public hearing on the licence amendment if the EA requirements have been met. CNSC staff, noting that there has not been any public interest for this project, recommended that the Screening Report be considered by the Commission in the context of a hearing with no public participation. CNSC staff stated that it expects that the Screening Report could be presented to the Commission in April 2008.
61. CNSC staff stated that because relevant information is required for both the Screening Report and the licence amendment, the streamlined process would reduce the effort required in CNSC staff's review of the documentation, while maintaining regulatory oversight. CNSC staff expressed the opinion that the streamlined process would provide gains in efficiency while maintaining the same level of regulatory effectiveness.
62. AECL expressed the opinion that the Bulk Materials Landfill project would be appropriate for the streamlined process because the project follows a well-established standard design. AECL also stated that the analysis that will be used in the development of the Screening Report would be useful for the preparation of the licence application.
63. CNSC staff suggested that the Bulk Materials Landfill project EA and licence amendment request be used as a pilot for the proposed streamlined process since AECL has had a number of similar waste management projects at the CRL site that have previously undergone EAs, the baseline environmental characteristics and the environmental effects of CRL are well known and understood.

64. CNSC staff noted that it plans to present the recommendations for the streamlined process in further detail at a Public Meeting of the Commission in the spring of 2008.
65. At the request of the Commission, AECL confirmed that it understands the business-related risks related to the proposed streamlined process, since the CEAA requirements must be fulfilled before the Commission can make a decision on the licence amendment request. If the Commission does not accept the Screening Report, the licence amendment request would not be considered.
66. In response to a question from the Commission on whether the Regulatory Advisory Committees (RACs) of the NSCA were consulted on the proposed streamlining process, CNSC staff explained that a workshop with the non-governmental organization (NGO) RAC was planned for January 2008. CNSC staff plans to include the NGO RAC's considerations of the proposed streamlined process with its recommendations to the Commission at a Public Meeting in the spring of 2008.
67. The Commission acknowledges CNSC staff's efforts in presenting the proposed streamlined process. However, the Commission believes that more information is needed for it to make a decision on the process changes as suggested by CNSC staff. The Commission believes that CNSC staff needs to further elaborate the process and to include in this work the results of a consultation with the CNSC RACs.
68. The Commission wishes to bring this matter to the full Commission at a public meeting for a decision on this request, rather than using a Panel of the Commission for a decision.
69. The Commission decides not to consider the streamlined process until after the streamlined process is presented at a Meeting of the Commission in the spring of 2008. The Commission, noting that the Screening Report for the Bulk Materials Landfill is expected to be presented to the Commission prior to this meeting, decides that it will follow the status quo for the hearing process on this matter.
70. The Commission decides that the Screening Report for this project will be reviewed in the context of a public hearing. The Commission notes that the public will have an opportunity to comment on the project during the public consultation for the Screening Report, and, in the event that there is no further public interest for the project, the Commission may reconsider its decision to hold a public hearing. The Commission requests that CNSC staff provide an updated recommendation based on the level of public interest in the Screening Report.
71. The Commission notes that in the event that there is an unforeseen delay in the project that would result in the Screening Report being presented to the Commission after the Public Meeting of the Commission in the spring of 2008 and if the proposed streamlined process is accepted, the Commission would be willing to reconsider its decision concerning the hearing process. In this event, AECL would have to submit a request for the streamlined approach prior to the hearing on the Screening Report and include with its submission a full project management approach for the project.

Conclusion

72. The Commission has considered the submissions of CNSC staff as presented for reference on the record for the hearing.
73. The Commission, pursuant to sections 15 and 16 of the CEAA, approves the EA Guidelines, presented in CMD 07-H147.
74. The Commission modifies the EA Guidelines attached to CMD 07-H147 as recommended by CNSC staff during the hearing. In Section 8.0 of the proposed EA Guidelines, the following factor will be added to the factors to be considered in the screening: "An assessment of the long-term performance of the waste facility, given that a specific proposal to decommission or abandon the facility is difficult to describe at this time." The Commission also includes the editorial revision recommended by CNSC staff in CMD 07-H147.A.
75. Pursuant to subsection 17(1) of the CEAA, the Commission decides that it will delegate the conduct of technical support studies to the proponent, AECL.
76. The Commission concludes that, at this time, it will not refer the project to the federal Minister of the Environment for referral to a mediator or review panel in accordance with the provisions of the CEAA.
77. Furthermore, the Commission decides that the completed Screening Report will come before the Commission for consideration at a public hearing.
78. The Commission requests CNSC staff to report to the Commission on any issues arising during the conduct of the EA that could warrant the Commission giving further consideration to the above scope and process decisions.

Linda J. Keen,
President
Canadian Nuclear Safety Commission

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