



Canadian Nuclear
Safety Commission

Commission canadienne
de sûreté nucléaire

Record of Proceedings, Including Reasons for Decision

In the Matter of

Applicant Atomic Energy of Canada Limited

Subject Application to Approve the Decommissioning of
the Plutonium Tower at the Chalk River
Laboratories

Hearing
Date September 25, 2012

RECORD OF PROCEEDINGS

Applicant: Atomic Energy of Canada Limited (AECL)

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

Purpose: Application to Approve the Decommissioning of the Plutonium Tower at the Chalk River Laboratories

Application received: November 22, 2011

Date of hearing: September 24, 2012

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

Members present: M. Binder, Chair

Secretary: M. Leblanc

Recording Secretary: C. Heyendal / S. Gingras

Approval: Granted

Table of Contents

Introduction	1
Decision	2
Issues and Commission Findings	2
<i>Qualifications and Protection Measures</i>	2
Application of the <i>Canadian Environmental Assessment Act</i>	3
Aboriginal Consultation	4
Conclusion	4

Introduction

1. Atomic Energy of Canada Limited (AECL) has notified the Canadian Nuclear Safety Commission¹ (CNSC) of its intention to decommission the Plutonium Tower at Chalk River Laboratories (CRL) located in Chalk River, Ontario.
2. AECL is requesting approval from the Commission to decommission the Plutonium Tower, which consists of a concrete tower structure with five annexes attached to it. Research and operations occurred in this facility from 1948 until 1950, after which time it was maintained but not used. It was shut down permanently in 1954, and has been in a storage-with-surveillance state since then.
3. The project is planned to be undertaken in two phases. The first phase consists of the immediate removal of the wooden and brick annexes. The second phase would be deferred to a later date and involves the removal of the concrete tower and remediation of the soil in the vicinity of the Plutonium Tower structure.
4. AECL is required to obtain the Commission's approval for the proposed decommissioning of the Plutonium Tower and associated annexes according to licence condition 4.4 of the CRL operating licence.

Issue

5. In considering the application, the Commission was required to decide:
 - a) if AECL is qualified to carry on the activity that the approval would authorize; and
 - b) if in carrying on that activity, AECL 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

6. 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 September 24, 2012 in Ottawa, Ontario. During the hearing, the Commission considered written submissions from CNSC staff (CMD 12-H111) and AECL (CMD 12-H111.1). The public was provided with an opportunity to submit written comments on this application, but no submissions were received.

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.

Decision

7. 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 AECL is qualified to carry on the proposed activities and, in doing so, will make adequate provisions 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. Therefore,
8.

the Commission approves the request to decommission the Plutonium Tower at AECL's Chalk River Laboratories.

Issues and Commission Findings

Qualifications and Protection Measures

9. Since the Commission has not delegated authority to approve the decommissioning of a Class I nuclear facility, the Commission must make a decision regarding AECL's request.
10. CNSC staff reported that AECL submitted a detailed Decommissioning Plan for this project in May 2012, which document the selected end-states for the facility, as well as the steps necessary to limit risks to the health and safety of persons and the environment during decommissioning activities to reach the end-state. CNSC staff noted that they reviewed AECL's Decommissioning Plan and found it acceptable.
11. CNSC staff explained that AECL maintains programs for the CRL site to protect the health and safety of workers, the public, and the environment, and that the decommissioning activities would be subject to these existing programs, policies, and procedures.
12. CNSC staff indicated that the central plutonium tower and annexes are essentially empty shells. Process equipment, ventilation equipment, and most building services have been removed. Service water, sanitary drains, floor drains, and the process effluent lines remain, in isolated or abandoned states. The building fire detection system remains in service. CNSC staff further noted that the decommissioning of the facility includes the complete removal of the buildings and site remediation.
13. CNSC staff reported that all nuclear substances and process equipment have been removed from the Plutonium Tower facility. CNSC staff provided information on external radiation fields within the facility. CNSC staff noted that localized areas of elevated fixed contamination levels exist, and also provided information on contamination levels within the facility.

14. CNSC staff explained that the Plutonium Tower facility has been classified into Radiological Safety Zones in accordance with AECL's Radiation Protection Program. Some areas have been classified as Radiological Zone 4 (high hazard) and other as Radiological Safety Zone 3 (moderate hazard). CNSC staff added that, to minimize radiological risks to workers, the assessment, planning and control of the work will be implemented in accordance with AECL policies and procedures, including AECL's Radiation Protection Program and Work Permit System, which require pre-work briefings, hazard characterization, and evaluation of protective measures.
15. CNSC staff noted that standard industrial chemicals and substances have been removed from the facility, and that the remaining non-industrial hazards are limited to small quantities of asbestos and lead-based paints. CNSC staff noted that decommissioning activities in the facility will be undertaken in accordance with the appropriate programs, including AECL's Occupational Health and Safety Program and procedures for controlling asbestos hazards.
16. CNSC staff reported that all waste would be managed according to AECL's waste management and handling plans, which identify quantities and key characteristics of wastes, as well as proposed destinations for those wastes. CNSC staff added that no waste would require significant shielding during handling and transportation.
17. CNSC staff recommends that the Commission approve AECL's request to decommission the Plutonium Tower facility at Chalk River Laboratories. CNSC staff considers that AECL has the processes, qualifications, and experience to perform the decommissioning activities, having been actively decommissioning buildings at the CRL site and other locations for several years. CNSC staff further noted that the liquid and airborne emissions from these activities are expected to be negligible, and the workplace hazards can be managed via AECL's existing programs, policies, and procedures.

Application of the *Canadian Environmental Assessment Act*

18. Before making a licensing decision, the Commission must be satisfied that all applicable requirements of the *Canadian Environmental Assessment Act*² (CEAA) have been fulfilled.
19. An environmental assessment pursuant to the *Canadian Environmental Assessment Act* has been undertaken for these activities. In its decision issued on December 16, 2011, the Commission determined that this project was not likely to cause significant adverse environmental effects, taking into account the mitigation measures identified in the EA Screening Report. A follow-up program was not required as it was determined that AECL had sufficient existing monitoring programs in place.

² S.C. 1992, c. 37.

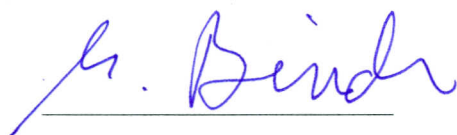
20. Natural Resources Canada, as the other Responsible Authority for the project, issued its EA decision report on January 25, 2012, also determining that the project is not likely to cause significant adverse environmental effects.

Aboriginal Consultation

21. CNSC staff provided a description of the aboriginal consultation activities relating to the proposed project. CNSC staff reported that, based on the information received to date from the identified Aboriginal groups, no concerns have been expressed about the decommissioning of the Plutonium Tower facility. CNSC staff concludes that this project will not have any adverse impacts to any potential or established Aboriginal or treaty rights.

Conclusion

22. The Commission has considered the information and submissions from AECL and CNSC staff and is satisfied that the proposed decommissioning activities will not adversely impact the safety of the CRL operations.
23. The Commission is satisfied that all applicable requirements of the CEAA have been fulfilled.



Michael Binder
President,
Canadian Nuclear Safety Commission

SEP 25 2012

Date