



Canadian Nuclear
Safety Commission

Commission canadienne
de sûreté nucléaire

Record of Decision

In the Matter of

Applicant University of Alberta

Subject Application from the University of Alberta to
Authorize the Decommissioning of the
SLOWPOKE-2 Reactor Facility

Date of
Decision September 22, 2017

RECORD OF DECISION

Applicant: University of Alberta

Address/Location: 2-51 South Academic Building, Edmonton, Alberta,
T6G 2G7

Purpose: Application from the University of Alberta to Authorize
the Decommissioning of the SLOWPOKE-2 Reactor
Facility

Application received: December 19, 2016

Date of decision: September 22, 2017

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

Member present: M. Binder, Chair

Licence: Amended

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1.0 INTRODUCTION

1. The University of Alberta (U of A) has submitted an application to the Canadian Nuclear Safety Commission¹ (CNSC), under subsection 24(2) of the *Nuclear Safety and Control Act*² (NSCA), to request authorization for the decommissioning of its SLOWPOKE-2 reactor facility located on the U of A campus in Edmonton, Alberta.
2. The U of A's SLOWPOKE-2 reactor is a 20-kW thermal sealed-container-in-pool type research reactor that has been in operation since 1977 and is located in a concrete well below the Dentistry-Pharmacy Building. The reactor is used in support of research and teaching at the U of A, as well as for neutron activation and isotope production.
3. The U of A's current licence, NPROL-18.00/2023, authorizes only the operation of the SLOWPOKE-2 facility and expires on June 30, 2023. In December 2016, the U of A applied for authorization to decommission the SLOWPOKE-2 reactor facility with the goal of restoring the facility to an end state that would enable the U of A to apply for a licence to abandon the facility and regain its unrestricted use. Under the NSCA, abandonment of a Class I nuclear facility must be authorized by the Commission prior to unrestricted use of this facility.

Issue

4. In considering the application, the Commission was required to decide:
 - a) what environmental assessment review process to apply in relation to this application
 - b) if the U of A is qualified to carry on the activity that the licence would authorize
 - c) if, in carrying on that activity, the U of A 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

5. 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 conducting a public hearing based on written materials, considered written submissions from the U of A (CMD 17-H106.1) and CNSC staff (CMD 17-H106). The Commission provided the opportunity for members of the public to submit written interventions, but none 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.

² Statutes of Canada (S.C.) 1997, chapter (c.) 9.

2.0 DECISION

6. Based on its consideration of the matter, as described in more detail in the following sections of this *Record of Decision*, the Commission concludes that the U of A satisfies the conditions of subsection 24(4) of the NSCA. Therefore,

the Commission, pursuant to section 24 of the *Nuclear Safety and Control Act*, amends the Non-Nuclear Power Reactor Licence NPROL-18.00/2023 issued to the University of Alberta for its SLOWPOKE-2 reactor facility located in Edmonton, Alberta to authorize its decommissioning. The amended licence, NPROL-18.01/2023, is valid until June 30, 2023.

7. The Commission considers the environmental review that was conducted by CNSC staff to be acceptable and thorough.
8. The Commission amends Part IV of the U of A's licence as recommended by CNSC staff in CMD 17-H106.

3.0 ISSUES AND COMMISSION FINDINGS

3.1 Application of the *Canadian Environmental Assessment Act, 2012*

9. In coming to its decision, the Commission was first required to determine whether an Environmental Assessment (EA) under the *Canadian Environmental Assessment Act, 2012*³ (CEAA 2012), was required.
10. In its application, the U of A submitted a request to decommission the SLOWPOKE-2 reactor facility. The Commission notes that the proposed decommissioning is not a designated project under CEAA 2012.
11. The Commission also considered the completeness and adequacy of the EA that CNSC staff conducted under the NSCA for this licence amendment. CNSC staff findings included, but were not limited to:
- The U of A has and will continue to maintain adequate environmental protection programs that meet CNSC requirements.
 - The U of A's Detailed Decommissioning Plan and Environmental Impact Statement prepared for the decommissioning of the SLOWPOKE-2 reactor facility were satisfactory and met CNSC requirements.

³ Statutes of Canada (S.C.) 2012, chapter (c.) 19.

12. Based on the information examined and provided on the record for this hearing, the Commission concludes that an EA conducted under the NSCA and its regulations was appropriate for the U of A's application. The Commission is satisfied that an EA under CEAA 2012 was not required in this matter. Further, the Commission is satisfied that the U of A has made, and will continue to make, adequate provision for the protection of the environment and the health of persons throughout the proposed licence period.

3.2 Decommissioning of the University of Alberta's SLOWPOKE-2 Reactor Facility

13. The Commission considered the sufficiency of the information submitted by the U of A in support of its application to decommission its SLOWPOKE-2 reactor facility, including an emergency response plan, environmental survey, radiation waste management plan, training plan and on-going communication activities. The Commission notes that the U of A has carried out several consultation processes in regard to this project and that the level of public concern was very low.
14. The U of A submitted to the Commission that the operations at the SLOWPOKE-2 reactor facility remained the same throughout the current and previous licence periods and were supported by comprehensive programs and procedures. CNSC staff confirmed this information and submitted that annual inspections and compliance verification activities showed that the U of A maintained satisfactory performance for the SLOWPOKE-2 reactor facility throughout the current licence period. CNSC staff reported that, on this basis, it was of the opinion that the potential risks and hazards of the decommissioning project were low.
15. The Commission notes that the cessation of operations and achieving a safe shutdown state is authorized under the current operating licence and that these activities include reactor defueling and the packaging and shipment of the reactor fuel and activated components to a licensed facility. The Commission agrees with CNSC staff's assessment that the completion of these activities is authorized under the existing licence and that, once completed, will remove the majority of the risks associated with the SLOWPOKE-2 reactor facility.
16. CNSC staff submitted that the U of A's application to decommission the SLOWPOKE-2 reactor facility included information about:
 - the final dismantling of the reactor
 - the packaging and shipment of decommissioning wastes
 - the clean-up and restoration of the facility to an end state suitable for future unrestricted use
17. The U of A submitted that the proposed decommissioning approach implemented lessons learned from the decommissioning of the Dalhousie University SLOWPOKE-2 reactor in Nova Scotia and that only proven and tested technology would be used for the project.

18. CNSC staff confirmed the information provided about the U of A's decommissioning plans and informed the Commission that the project was planned to be completed in approximately 4 to 6 months after being initiated. The Commission agrees with CNSC staff's assessment that the proposed decommissioning activities are of limited complexity.
19. The Commission considered the information submitted by the U of A and CNSC staff in regard to the decommissioning of the SLOWPOKE-2 reactor facility. Based on the information submitted, the Commission is satisfied that the information is complete and fulfills the requirements of section 7 of the *Class I Nuclear Facilities Regulations*.⁴
20. The U of A reported to the Commission that financial guarantees and security for the SLOWPOKE-2 reactor facility would remain unchanged throughout the decommissioning project. The Commission is satisfied with the information submitted in this regard.
21. Based on the information provided for this hearing, the Commission is satisfied that the U of A's approach and plans for the decommissioning of its SLOWPOKE-2 reactor facility meet regulatory requirements and that the U of A is qualified to carry out the proposed decommissioning project.

4.0 CONCLUSION

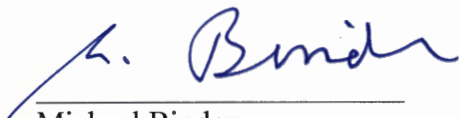
22. The Commission has considered the information and submissions from the U of A and CNSC staff.
23. The Commission notes that an EA conducted under the NSCA and its regulations was appropriate for this licensing matter. The Commission further notes that the NSCA and its regulations provide for the protection of the environment and the health and safety of persons, and is satisfied that the U of A will continue to make adequate provision in this regard.
24. The Commission is satisfied that the U of A is qualified to carry out the proposed activities. Therefore, the Commission, pursuant to section 24 of the NSCA, amends the licence to authorize the decommissioning of its SLOWPOKE-2 reactor facility.
25. On the basis of the Commission's conclusions, the Commission amends Part IV (i) of the Non-Power Reactor Licence NPROL-18.00/2023 as recommended by CNSC staff in CMD 17-H106 to read

*“(i) operate **and decommission** the University of Alberta SLOWPOKE-2 reactor and associated facilities (hereinafter “the facility”), located in the basement of the Dentistry/Pharmacy Building on the University of Alberta campus in Edmonton, Alberta;”*

⁴ SOR/2000-204.

26. The Commission notes that the U of A intends to achieve an end state of unrestricted use for the space housing its SLOWPOKE-2 reactor facility following its decommissioning. The Commission wishes to make it clear that this licence amendment authorizes only the decommissioning of the SLOWPOKE-2 reactor facility. In accordance with the NSCA, for the U of A to be granted unrestricted use of the space, the U of A will be required to submit to the CNSC an application for a licence to abandon in accordance with the *Class I Nuclear Facilities Regulations*. Unrestricted use of the space shall only be allowed following a Commission decision to grant abandon.
27. The Commission notes that, in its application, the U of A requested
- a licence to decommission the SLOWPOKE-2 reactor facility
 - that the Commission revoke the U of A's current NPROL

In its consideration of the information submitted for this hearing, the Commission also notes that CNSC staff recommended the amendment of the current licence to include decommissioning in the licensed activities. Based on its consideration of the information provided for this hearing, the Commission is satisfied that amending the U of A's licence to include both operation and decommissioning, rather than issuing a decommissioning licence, will achieve the same objective of allowing the U of A to decommission its SLOWPOKE-2 reactor facility and to meet the regulatory requirements for decommissioning. The Commission makes this decision in accordance with the power afforded to it in subsection 20(3) of the NSCA, requiring it to deal with all proceedings before it as "...*informally and expeditiously as the circumstances and considerations of fairness permit.*"



Michael Binder
President,
Canadian Nuclear Safety Commission

SEP 22 2017

Date