



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 for Approval to Operate the Fuel
Packaging and Storage Facility

Hearing Date

March 18, 2014

RECORD OF PROCEEDINGS

Applicant: Atomic Energy of Canada Limited

Address/Location: Chalk River Laboratories
Chalk River, ON K0J1J0

Purpose: Application for approval to operate the Fuel Packaging
and Storage (FPS) Facility

Application received: December 17, 2013

Date of hearing: March 18, 2014

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

Members present: M. Binder, Chair

Assistant Secretary: K. McGee
Recording Secretary: S. Dimitrijevic

Approval: Granted

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1.0 INTRODUCTION

1. Atomic Energy of Canada Limited (AECL) has submitted a request to the Canadian Nuclear Safety Commission¹ for approval to operate the Fuel Packaging and Storage (FPS) facility, as part of the modification to the waste management areas at the Chalk River Laboratories (CRL) located in Chalk River, Ontario. AECL's application does not trigger an amendment of the current CRL operating licence. However, condition 4.2 of the current operating licence precludes AECL from operating any new Class I nuclear facility at CRL without the prior approval of the Commission.
2. AECL has developed the FPS project as part of a remediation initiative to address degradation signs noted on some of the tile holes containing historic storage containers (HSC) with radioactive material. The purpose of the FPS project is to retrieve the HSCs from the degrading tile holes located in Waste Management Area B and store them in a better controlled and monitored facility, built to current standards. The storage block of the FPS facility is designed to last at least 50 years and will provide for safe interim storage of the packaged fuel until a disposal or long-term storage facility is available.
3. An environmental assessment for this project was completed under the *Canadian Environmental Assessment Act, 1992*². After a public hearing held in May 2008, the Commission concluded that the project, taking into account mitigation measures identified in the environmental assessment report, is not likely to cause significant adverse environmental effects.
4. The Commission approved the construction of the FPS facility in 2009. The construction and major equipment installation are complete and the facility inactive commissioning is underway. The completion of these activities is projected for March 31, 2014. AECL is now applying for an approval to operate the facility. AECL proposes a three-phase active commissioning approach.

Issue

5. In considering the application for approval, the Commission was required to decide:
 - a) if AECL is qualified to carry on the activity that the amended licence 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.

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. 1992, c.37

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 March 18, 2014 in Ottawa, Ontario. During the hearing, the Commission considered written submissions from AECL (CMD 14-H100.1) and CNSC staff (CMD 14-H100).

2.0 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 approves AECL's request to operate the FPS facility in accordance with licence condition 4.2 of the CRL operating licence NRTEOL-01.00/2016.

8. With this decision, the Commission agrees with the introduction of a regulatory hold point as defined in CMD 14-H100. The Commission also agrees with the delegation to CNSC staff of the authority to release this hold point when all conditions for release are fulfilled to the satisfaction of CNSC staff.

3.0 ISSUES AND COMMISSION FINDINGS

9. CNSC staff informed the Commission about its review of the Final Safety Analysis Report (FSAR) and commissioning activities conducted by AECL. CNSC staff concluded that the FSAR demonstrates the adequacy of the FPS design in support of the application for a licence to operate a new Class I nuclear facility. The FSAR also demonstrates that the overall risk from the operation of the FPS facility is low and justifies the provided overall limits and conditions. CNSC staff noted that the FSAR will be revised once active commissioning activities are complete in order to incorporate facility specific information gathered during this phase, as well as to incorporate CNSC staff's comments.
10. CNSC staff further informed the Commission that active commissioning will follow completion of the inactive commissioning; AECL intends to start the active commissioning activities in July 2014. CNSC staff is reviewing the detailed active commissioning plan, which consists of three phases. The first two phases consist of the completion of operational sequences from the tile hole array to the storage block and shielding integrity tests. These phases would serve as a training refresher for waste management area operations staff, as a validation of the operating procedures, and to verify that adequate radiation protection is provided during the activities planned for phase 3.

11. Phase 3, considered to be the most critical by CNSC staff, consists of retrieval, packaging, transfer, drying and storage of irradiated fuel elements. This phase will serve to verify confinement of contamination during transfers, and to verify the performance of the vacuum process skid to dry the retrieved HSCs. CNSC staff noted that they intend to monitor the first two phases in order to confirm readiness for this phase.
12. CNSC staff plans to include in the Licence Conditions Handbook (LCH) a regulatory hold point effective at the completion of phase 2. In order to release this regulatory hold point, AECL will have to demonstrate that the facility is ready for operation and that facility personnel is well trained to start with the active fuel retrieval. Once the regulatory hold point is released, AECL will be allowed to proceed with phase 3 active commissioning to retrieve the first active fuel from the specified tile hole and pursue with the subsequent activities.
13. In its submission, CNSC staff described the requirements and criteria for the release of the regulatory hold point, and defined the documentation that AECL has to provide in support of the request to release the hold point.
14. CNSC staff stated that, if the Commission approves the operation of the FPS with the proposed regulatory hold point, the regulatory hold point would be added as a new criterion 4.2(8) to subsection 4.2 "Operation of New Nuclear Facilities" of the LCH, and would be applicable to the FPS facility. CNSC staff intends to use the existing delegation of authority as defined in the CRL LCH for the release of this regulatory hold point.
15. CNSC staff stated that it would monitor phase 3 activities and following operations of the facility as part of the compliance inspections and oversight.

4.0 CONCLUSION

16. The Commission has considered the information and submissions from AECL and CNSC staff and is satisfied that the proposed activities will not adversely impact the safety of the FPS facility and CRL operations.
17. The Commission notes that CNSC staff intends to provide an update on the operation of the FPS facility in the Annual Report on the performance of AECL's Nuclear Sites and Projects.



Michael Binder
President,
Canadian Nuclear Safety Commission

MAR 18 2014

Date