



Canadian Nuclear
Safety Commission

Commission canadienne
de sûreté nucléaire

Record of Proceedings, Including Reasons for Decision

In the Matter of

Applicant Shield Source Incorporated

Subject Application for the Revocation of Shield Source
Incorporated Operating Licence

Hearing Date March 28, 2014

RECORD OF PROCEEDINGS

Applicant: Shield Source Incorporated

Address/Location: 925 Airport Road, Unit 211C, Cavan Monaghan, Ontario

Purpose: Application for the Revocation of Shield Source Incorporated Operating Licence

Application received: March 21, 2014

Date of hearing: March 28, 2014

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

Members present: M. Binder, Chair

Secretary: M. Leblanc

Recording Secretary: S. Dimitrijevic / S. Gingras

Licence: Replaced

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1.0 INTRODUCTION

1. Shield Source Incorporated (SSI) has requested from the Canadian Nuclear Safety Commission¹ (CNSC) to revoke its Nuclear Substance Processing Facility Operating Licence, NSPFOL-12.00/2014, issued by the Commission to SSI for its Airport Road facility located in Peterborough, Ontario.
2. SSI had used this facility to process tritium gas for the production of gas tritium light sources (GTLS) and manufacturing of radiation devices containing GTLS. In 2013, SSI discontinued the manufacture of gaseous tritium light sources, and notified the CNSC of its intention to cease operations and apply for the Commission's approval to release the facility from regulatory control once it has been cleaned up. In November 2013, SSI requested an extension of its licence by a period of two months in order to complete the clean-up and decontamination activities and to provide their final report to CNSC staff.
3. In December 2013, in order to allow time for SSI to complete the requested activities, the Commission renewed the licence on its own motion, pursuant to section 25 of the *Nuclear Safety and Control Act*² (NSCA), for a period of three months. The renewed licence, NSPFOL-12.00/2014, is valid from January 31, 2014 until March 31, 2014³.
4. All bulk tritium and sealed tritium light sources have been shipped to licensed facilities (AECL Chalk River Laboratories) and SSI has completed the cleanup and decontamination of the tritium fill room.

Issue

5. Pursuant to section 25 of the NSCA, the Commission may, on its own motion, renew, suspend in whole or in part, amend, revoke or replace a licence under the prescribed conditions. The conditions under which it may do so are outlined in subsection 8(2) of the *General Nuclear Safety and Control Regulations*⁴.

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 28, 2014 in Ottawa, Ontario. During the hearing, the Commission considered written submissions from SSI (CMD 14-H104.1) and CNSC staff (CMD 14-H104).

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

³ *Record of Proceedings, Including Reasons for Decision*, CNSC, December 23, 2013.

⁴ Statutory Orders and Regulations (SOR)/2000-202.

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, pursuant to section 25 of the *Nuclear Safety and Control Act*, replaces the Nuclear Substance Processing Facility Operating Licence NSPFOL-12.00/2014 with a Licence to Abandon the Shield Source Incorporated Nuclear Substance Processing Facility located in Peterborough, Ontario. The new licence, NSPFAL-12.00/2014, is valid from April 1, 2014 until April 30, 2014.

8. The Commission includes in the licence the conditions as recommended by CNSC staff in CMD 14-H104.

3.0 ISSUES AND COMMISSION FINDINGS

9. SSI informed the Commission that it has ceased all operations at the Airport Road facility covered under the current licence. Cleanup and decontamination activities are completed and all radioactive material has been removed or is scheduled to be shipped from the facility before March 31, 2014. SSI stated that, based on the results of the conducted contamination tests, acceptance criteria have been met and the facility is cleared for unrestricted commercial use as per the Final Status Survey Plan approved by the CNSC.
10. SSI further stated that all additional details regarding the removal of the tritium fill machines and related equipment, facility modifications as well as decontamination and clearance activities will be provided with the Annual Compliance Report that will be submitted to the CNSC before March 31, 2014. CNSC staff confirmed that a final report describing the end state of the facility and compiling the results of the cleanup will be submitted as part of this Report, and that nevertheless, SSI had provided samples demonstrating that the cleanup criteria were met.
11. CNSC staff described the conducted clean-up activities and explained the clean-up criteria presented in SSI's Preliminary Decommissioning Plan and in the Final Status Survey Plan. CNSC staff stated that the limit for removable surface contamination was set at 0.34 Bq/cm² (Becquerels per centimetre square), compared to the generally accepted value of 30 Bq/cm², representing a limit that is about 100 times lower than the norm when releasing a laboratory or workspace from regulatory control. In addition, limits of 100 Bq/g, for building materials, and 150 Bq/m³, for ambient air were used as additional clean-up criteria, as per section 5.1 (1) of the *Nuclear Substances and Regulation Devices Regulations*⁵.

⁵ SOR/2000-207.

12. CNSC staff reported that it had conducted compliance verification activities at the SSI facility throughout the entire cleanup process. The analysis of random samples collected in the facility during cleanup demonstrated that the cleanup of the facility meets all of the regulatory requirements and criteria set by CNSC staff.
13. With respect to the current status of the environment around the facility, CNSC staff reported that there are 10 groundwater monitoring wells around the SSI facility and on the airport property, used to monitor tritium concentration in groundwater. Overall, tritium concentrations are decreasing with time. CNSC staff added that the resident's well located across the road from SSI is not contaminated with tritium as results are currently below a rigorous detection limit of 7 Bq/L. Further monitoring of this well will be coordinated between the CNSC and the Ontario Ministry of the Environment (OMOE). Tritium level in the pond located across the road from the SSI facility is 10 times lower than the Ontario Drinking Water Standard. In 2013, SSI's monitoring of tritium in air has shown that results are either below detection limits or extremely low. Independent CNSC sampling of soils near the SSI building have demonstrated that there is no risk due to the presence of tritium in soil, given the industrial setting of the facility.
14. CNSC staff noted that the landlord of the facility has no concerns regarding the cleanup of the facility. CNSC staff added that a meeting with the landlord, the Peterborough Airport Authority and the OMOE is scheduled for the first week of April 2014 to discuss the final state of the facility and future environmental monitoring. CNSC staff added that it plans to continue taking quarterly samples of groundwater, surface water and air around SSI, along with annual samples of vegetation and water from the Otonabee River, to ensure that tritium concentrations in the environment continue to decrease as expected.
15. CNSC staff reported that, in October 2013, it met with representatives from the OMOE to discuss cleanup activities at SSI. At the request of the OMOE, CNSC staff will share monitoring data and have provided to the OMOE a draft plan for future environmental monitoring around SSI.
16. CNSC staff indicated that SSI's escrow account fund was sufficient to cover all activities associated with the cleanup of the facility.
17. CNSC staff also noted that, in cases such as SSI where a company submits evidence that all required cleanup is complete and that there is no longer any need for regulatory control, the Commission typically issues a licence to abandon, consistent with section 26 of the NSCA. CNSC staff therefore recommended to the Commission to replace the existing operating licence with a licence to abandon instead of simply revoking the operating licence.

4.0 CONCLUSION

18. The Commission has considered the information and submissions from SSI and CNSC staff and is satisfied that the requirements for issuing a licence to abandon have been met.

19. The Commission is also satisfied that the site is now suitable for industrial purposes and that, by issuing this abandonment licence, SSI is no longer subject to regulatory control by the CNSC.



Michael Binder

Michael Binder
President,
Canadian Nuclear Safety Commission

2014-03-28

Date