



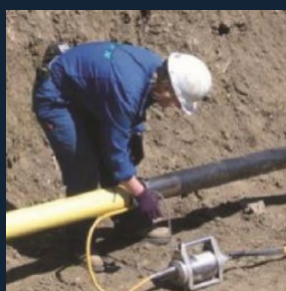
Canadian Nuclear
Safety Commission

Commission canadienne
de sûreté nucléaire

Canada

National Sealed Source Registry and Sealed Source Tracking System

Annual Report 2025



Canadian Nuclear Safety Commission
www.nuclearsafety.gc.ca

Receive/Import Sealed Source

User Name:

Licences:

Licence #	Effective Date
25428-1-11.6	24-Mar-2011
25428-2-11.6	7-Jan-2018

add another licence

Please contact the CNSC if any of the above information is incorrect.

Date Modified: 2010-12-01



May 2026

National Sealed Source Registry and Sealed Source Tracking System Report for 2025

© Canadian Nuclear Safety Commission (CNSC) 2026

Cat. No. CC171-4E-PDF

ISSN 1926-3279

Extracts from this document may be reproduced for individual use without permission provided the source is fully acknowledged.

However, reproduction in whole or in part for purposes of resale or redistribution requires prior written permission from the Canadian Nuclear Safety Commission.

Également publié en français sous le titre : Rapport annuel de 2025 sur le Registre national des sources scellées et le Système de suivi des sources scellées

Document availability

This document can be viewed on the [CNSC website](#). To request a copy of the document in English or French, please contact:

Canadian Nuclear Safety Commission
280 Slater Street
P.O. Box 1046, Station B
Ottawa ON K1P 5S9
CANADA

Tel.: 613-947-7516 or 1-800-668-5284 (toll-free in Canada and the U.S.)

Fax: 613-995-5086

Email: cnscccsn@nsc-ccsn.gc.ca

Website: nuclearsafety.gc.ca

Facebook: facebook.com/CanadianNuclearSafetyCommission

YouTube: youtube.com/cnscccsn

X: [@CNSC CCSN](#)

LinkedIn: linkedin.com/company/cnscccsn

Publishing history

May 2026 Version 1.0

Cover images

From left to right: a screen capture of the Sealed Source Tracking System interface, a transport package, a sealed source next to a ruler to show that the sealed source has a length of 13.5 cm, a certified exposure device operator using an exposure device.

National Sealed Source Registry and Sealed Source Tracking System Report for 2025

Introduction

Sealed sources are radioactive nuclear substances encased in a sealed capsule or in a cover to which the substance is bonded. A source's capsule or cover is strong enough to prevent contact with, or dispersion of, the substance under the conditions for which the capsule or cover is designed. Sealed sources can be used for a variety of activities, including medical, industrial, commercial, and academic and research applications. An inventory of sealed sources within Canada is housed in the National Sealed Source Registry (NSSR), which was established in 2006 to conform to the International Atomic Energy Agency (IAEA) [*Code of Conduct on the Safety and Security of Radioactive Sources*](#). The NSSR is used to maintain an accurate and secure inventory of sealed sources in Canada, with a particular focus on those classified as high risk.

The [*Sealed Source Tracking System \(SSTS\)*](#) is a secure information-management system used in conjunction with the NSSR to track new and existing high-risk sources within Canada. Source transfers done online through the SSTS update and populate the NSSR so that the information is as current as the licence reporting allows. The timelines to report the receipt of a source (following either a domestic transfer or an import) is within 2 days of receipt. An export must be reported 7 days in advance of the export. A domestic transfer must be reported 24 hours prior to the transfer. The CNSC places particular emphasis on capturing data on high-risk sources, with the NSSR housing detailed information such as the source serial number, isotope, activity, and current location. Information on moderate- and low-risk sources is updated annually using the inventory data included in licensees' annual compliance reports (ACRs) and validated by the CNSC for accuracy and consistency.

Categories of sealed sources

Sealed sources are classified by the IAEA into five different categories:

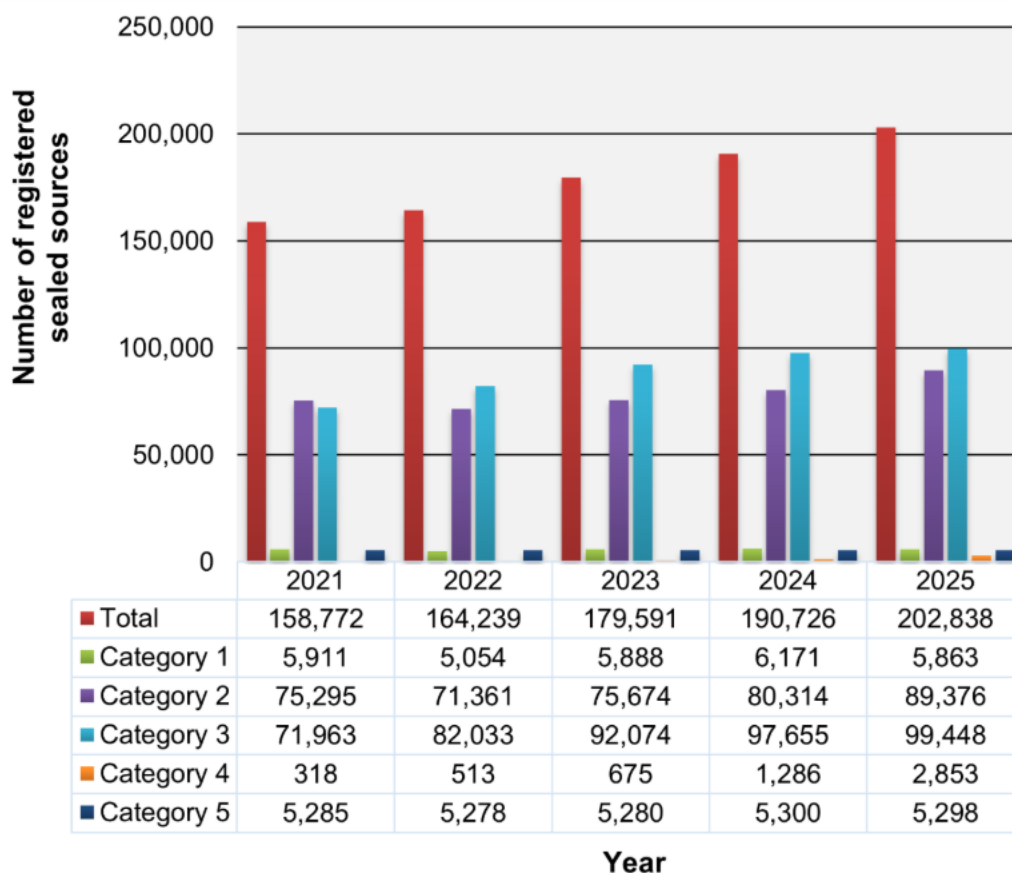
- Category 1: Very high risk (personally extremely dangerous)
- Category 2: High risk (personally very dangerous)
- Category 3: Moderate risk (personally dangerous)
- Category 4: Low risk (unlikely to be personally dangerous)
- Category 5: Very low risk (most unlikely to be personally dangerous)

For more information on how sealed sources are categorized, consult the [CNSC website](#).

Summary of Sealed Source Inventory

By the end of 2025, the NSSR contained information on **202,838** radioactive sealed sources in Canada. The SSTS actively tracks Category 1 and 2 sources. In 2025, **5,863** Category 1 and **89,376** Category 2 sources were tracked. The remaining **107,599** sealed sources in the NSSR were Category 3, 4 or 5, which are not subject to mandatory tracking for every movement. Figure 1 shows the total number of sealed sources, as well as the number of sealed sources in each category, that were accounted for in Canada on December 31, 2025.

Figure 1. Breakdown of sealed sources in Canada on December 31, 2025



Performance measures and verification

To gauge the effectiveness of the SSTS and verify the accuracy of the data in the system, CNSC inspectors physically cross-reference SSTS data against licensees' actual inventory of sealed sources. Routine CNSC compliance inspections include the verification of sealed source tracking information. Inconsistencies are immediately addressed to ensure accuracy in the data.

In 2025, CNSC inspectors verified licensees' compliance with sealed source tracking requirements during 72 inspections. Of these, licensees were compliant in 92% of cases (66 inspections). Four of the non-compliances were related to a reporting period issue, one non-compliance was related to improper tracking of source movements, and one non-compliance involved incomplete receipt and transfer records, which prevented full verification of compliance with licence requirements. In all six cases, the licensees adequately addressed the issues.

For more information on inspection results of Canadian licensees using nuclear substances relative to doses to workers, radiation protection, operating performance and sealed source security, refer to the annual [Regulatory Oversight Report on the Use of Nuclear Substances in Canada](#).

Event mitigation

Licensees must immediately report lost or stolen nuclear substances to the CNSC and must also submit descriptions of any actions taken or proposed to recover missing nuclear substances. The CNSC investigates every such event and informs local, national, and international stakeholders who may assist with recovery. A list of events involving sealed sources can be found in the [Lost, Stolen and Found Sealed Sources and Radiation Devices Report](#).

A total of 8 sealed sources were involved in 6 events in 2025. Four Category 4 sources contained in 2 portable gauges were stolen but were not recovered and four Category 5 sources were lost and not recovered.

The [International Nuclear and Radiation Events Scale](#) (INES) is a tool for communicating the safety significance of nuclear and radiological events to technical communities and the public. Every event reported from the commercial, academic and research, industrial, and medical sectors is classified in accordance with the INES, based on its safety significance rating. An event classified as level 0 (or “below scale”) has no safety significance, level 1 is an anomaly, level 2 is an incident, level 3 is a serious incident, level 4 is an accident with local consequences, level 5 is an accident with wider consequences, level 6 is a serious accident, and level 7 is a major accident. The levels, excluding level 0, are broken into 2 sections; levels 1, 2, and 3 are incidents while levels 4 through 7 are accidents. Two events involving lost, stolen, or found sources in 2025 were rated as INES Level 1. Four events were rated as Level 0, which are considered below scale and have no safety significance.

Figures 2 and 3 present data on lost and stolen sources in Canada from 2021 to 2025.

Figure 2. Number of reported events involving lost, stolen and found sealed sources from 2021 to 2025

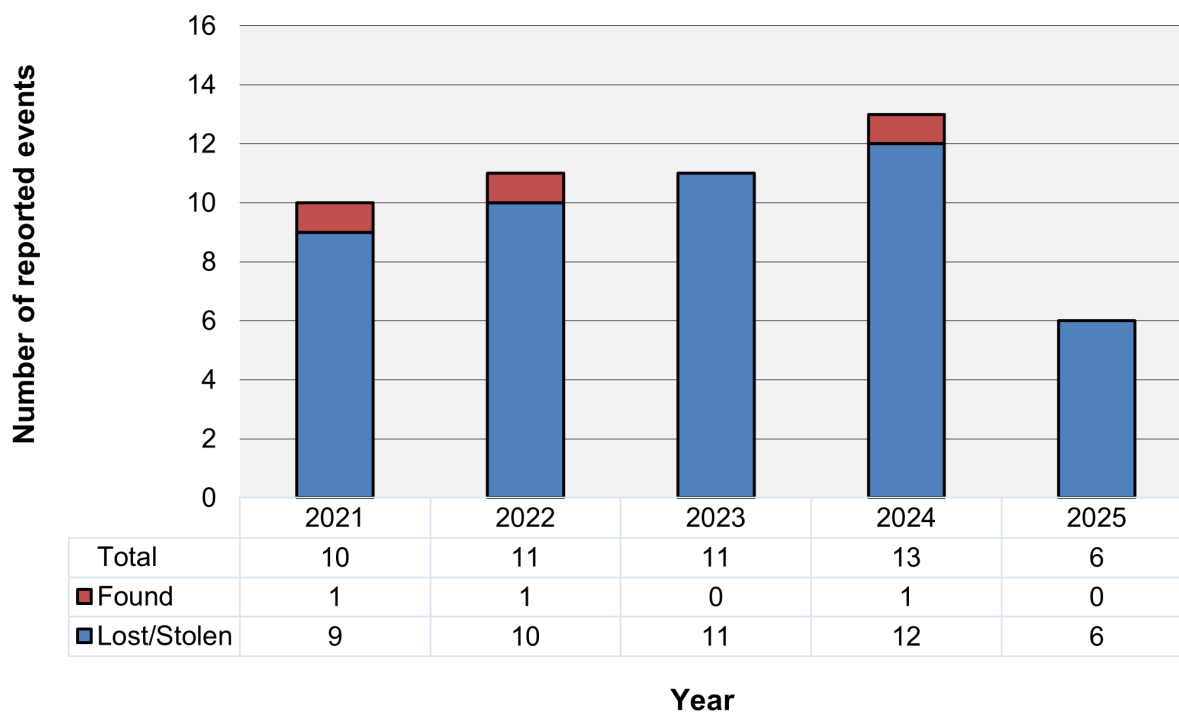
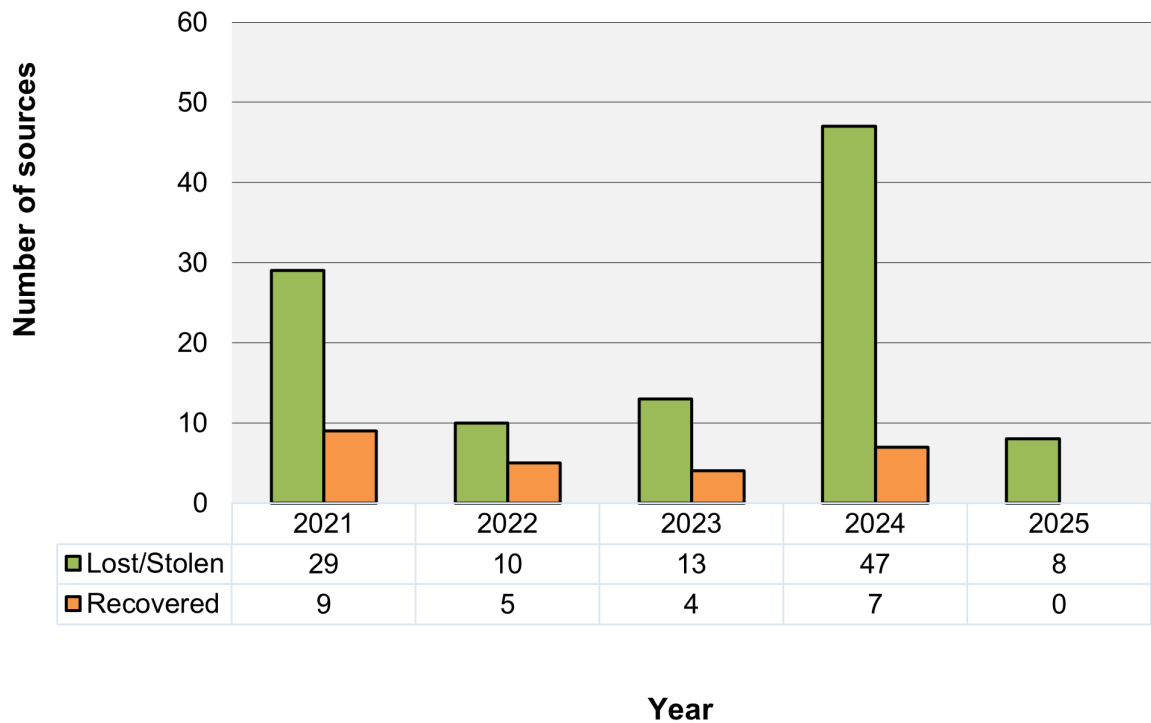


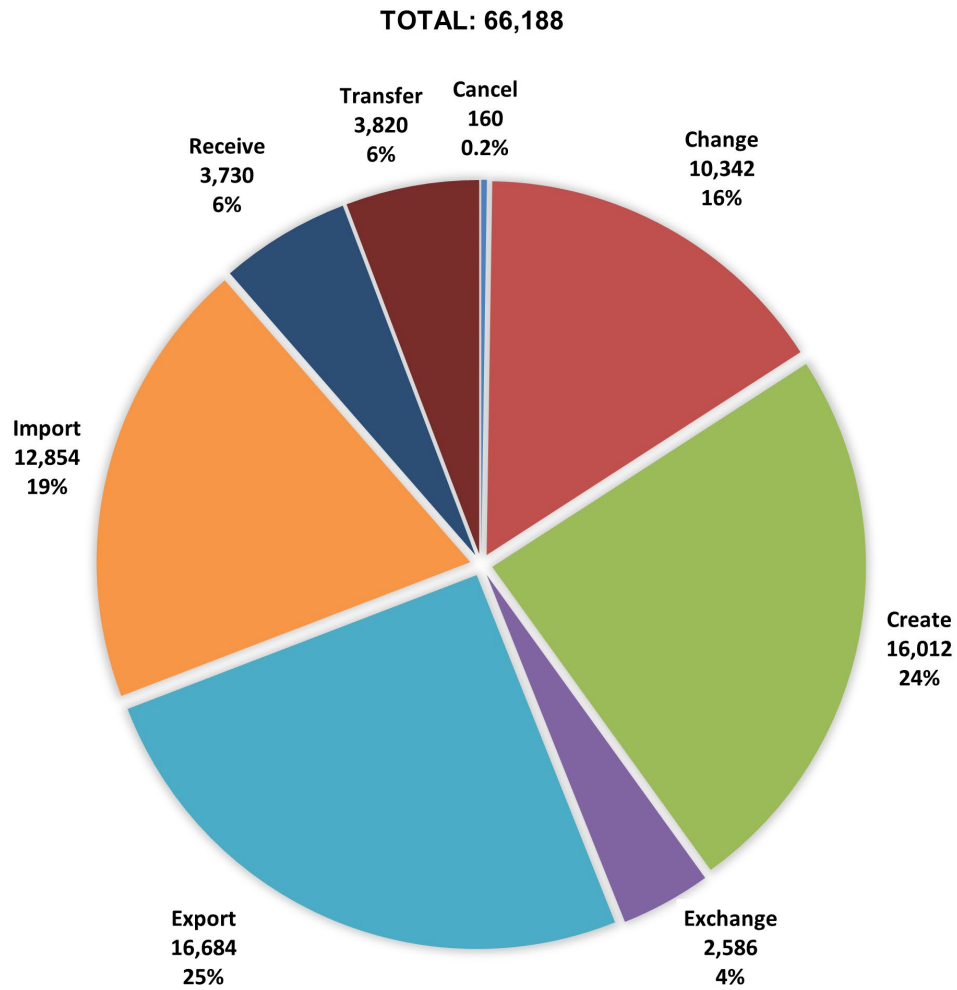
Figure 3: Number of lost or stolen and found or recovered sealed sources from 2021 to 2025



Transaction statistics

The NSSR is populated by licensees reporting their transactions via the online SSTS interface or by other means such as fax or email. Figures 4, 5, and 6 show transactions entered in the SSTS in 2025, statistics for import and export of sealed sources, and the percentage of online SSTS transactions from 2021 to 2025, respectively. The CNSC publishes [SSTS transaction data](#) as part of the Government of Canada’s Open Data initiative.

Figure 4. SSTS transactions in 2025

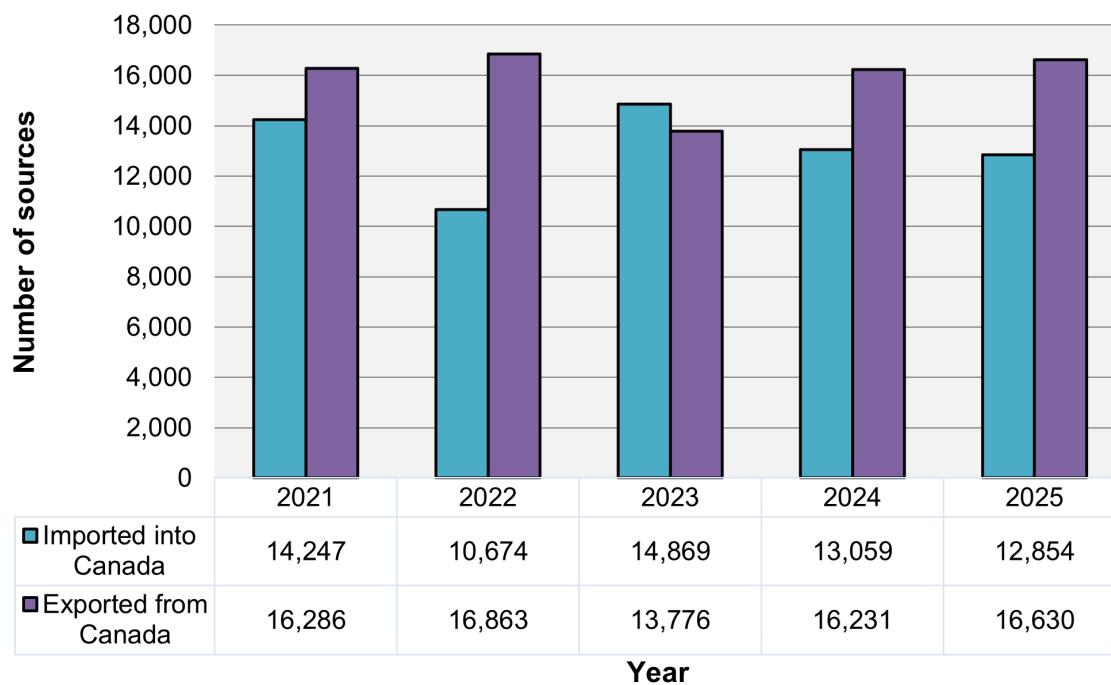


Create	Exchange	Export	Import
Creation of a new source manufactured in Canada	Replacement of one source with another in a radiation device or Class II prescribed equipment at a licensed location	Transfer of a sealed source from Canada to a foreign destination	Transfer of a sealed source into Canada from a foreign location
Receive	Transfer	Change	Cancel
Reception of sources by licensees at licensed locations	A change in possession of a sealed source, from one licensee to another where both licensees are located within	Transaction date change or correction	Cancellation of transaction due to unforeseen circumstances (e.g., export and shipment)

	Canada, or the movement of a sealed source from one licensee's location to another, where both places are located within Canada.		cancellations, delayed transfers)
--	--	--	-----------------------------------

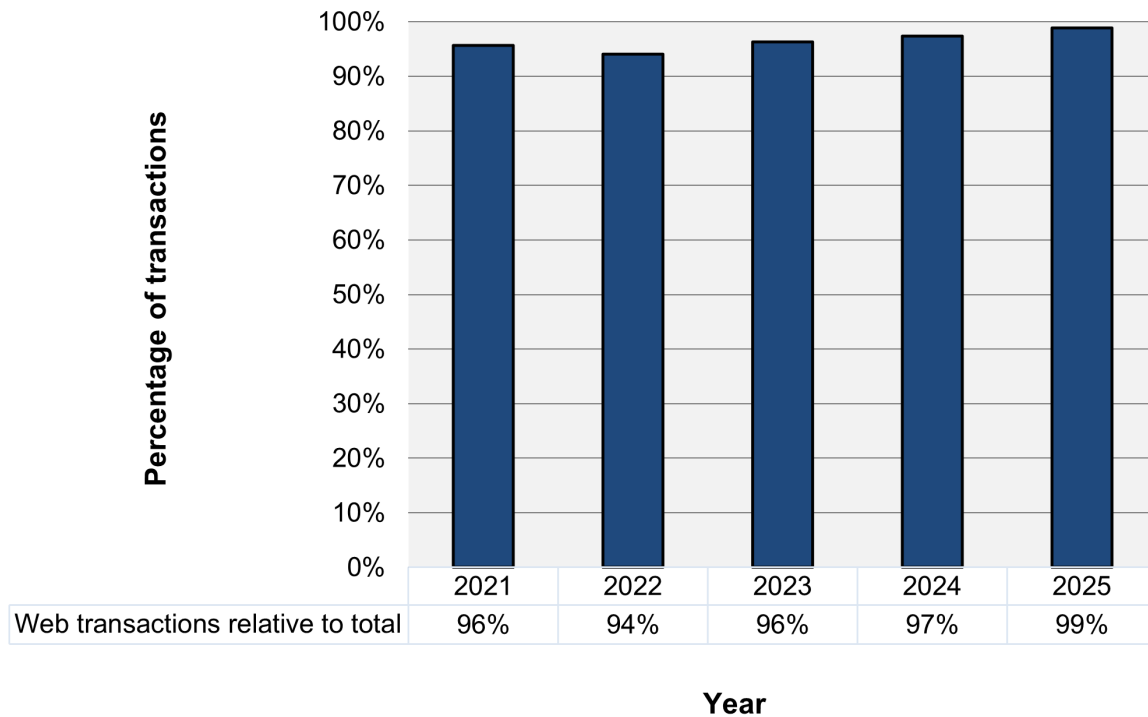
Users of nuclear substances in Canada routinely import and export sealed sources in accordance with their licences.

Figure 5. Number of sealed source imports and exports from 2021 to 2025



Licensees report transactions online (through the SSTS Web portal) or via email or fax to the CNSC. Transactions reported to the CNSC via email or fax are entered into the system by CNSC staff on behalf of the licensee.

Figure 6. Percentage of SSTS transactions completed online from 2021 to 2025



Conclusion

The licensees' continued use of the SSTS indicate that its implementation, as well as that of the NSSR, has been effective, and that Canada is maintaining its commitment to the *Code of Conduct on the Safety and Security of Radioactive Sources*.

Additional resources

- [Reports on Lost, Stolen and Found Sealed Sources and Radiation Devices](#)
- [Sealed Source Tracking System](#)
- [Class II Nuclear Facilities and Prescribed Equipment Regulations](#)
- [Nuclear Substances and Radiation Devices Regulations](#)
- [Sealed Source Tracking System Open Data](#)