



Canadian Nuclear
Safety Commission

Commission canadienne
de sûreté nucléaire

Canada

Non-proliferation and Import/Export Controls Program



Commission Meeting, January 21, 2021

CMD 21-M6

nuclearsafety.gc.ca

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Canada



Import/Export Controls Program

What are the main objectives?

- Limit risks to the public, the environment, and national and global security
- Respect international obligations
- Implement and support key aspects of Canadian nuclear non-proliferation policy

What is Nuclear Non-Proliferation?

- Preventing the spread of nuclear weapons/explosive nuclear devices
- Minimizing risk of diversion of nuclear items to non-State actors for malicious use

Ensure exports from Canada are for peaceful uses



Purpose of the Technical Briefing

CNSC's authority & role

International, Domestic and Regulatory Frameworks

Overview of Import/Export Program

- Licensing and compliance

COVID-19 Pandemic Impacts

- Adaptive and responsive measures

Upcoming Activities



Authority under the Nuclear Safety and Control Act

Nuclear Safety and Control Act (NSCA), paragraph 3(b)

“...the implementation in Canada of measures to which Canada has agreed respecting international control of the development, production and use of nuclear energy, including the non-proliferation of nuclear weapons and nuclear explosive devices.”





CNSC's Role

What is CNSC's role?

- Continues to ensure the CNSC's Non-proliferation regulatory framework is robust and responsive
- Provide credible assurances that material in Canada remains in peaceful use: *Safeguards*
- Provide credible assurances that international transfers are solely for peaceful purposes: *Import/Export Controls*

Who delivers on the objectives?

- Team of 12: administrators, technical/policy advisors, inspectors, designated officers



Import/Export Controls Program

How do we deliver on the objectives? By controlling:

- Nuclear Items: especially designed or prepared for nuclear use
- Nuclear-related Dual-use Items: Used in other industries but also used for nuclear related applications
- Risk Significant Radioactive Sealed Sources: Sealed sources used in industrial and medical applications

These items are subject to licensing and compliance activities



International Framework – Key Elements

Treaty on the Non-proliferation
of Nuclear Weapons

—

Zangger Committee

—

Nuclear Suppliers Group

—

International Atomic Energy Agency
(IAEA) Code of Conduct on Safety and
Security of Radioactive Sources



IAEA Headquarters, Vienna, Austria.
(Vienna International Centre)

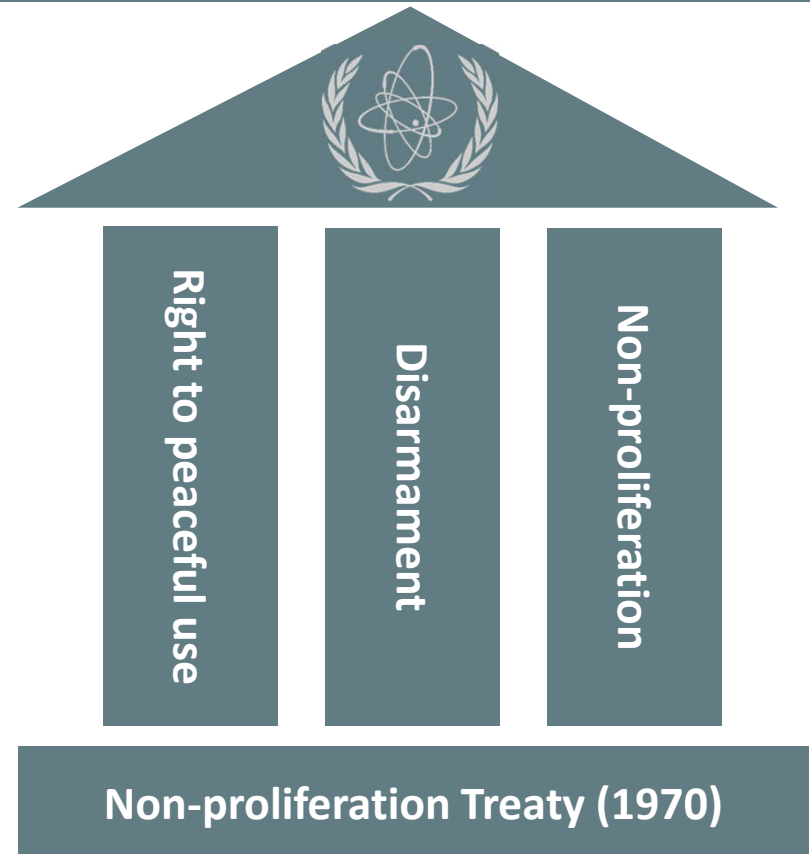


Treaty on the Non-proliferation of Nuclear Weapons

Legally-binding

191 States have joined the Treaty

- Establishes Nuclear Weapons States and Non-Nuclear Weapons States
- Four non-signatories (India, Pakistan, Israel, South Sudan), and one withdrawal (North Korea)





Zangger Committee

Political Commitment

- Formed to help reach a common understanding of what special fissionable and source material and equipment is covered by **Article III.2** of NPT
- Created and maintains the “**Trigger List**” for exports
- Consists of **39 members**, including Canada and all nuclear weapon states



ZANGGER COMMITTEE
Formed in 1971

CNSC leads the Canadian delegation



Nuclear Suppliers Group

Political Commitment

- Export controls regime with the aim of preventing nuclear proliferation
- Publishes export control guidelines and lists of **proliferation significant** nuclear substances, equipment and technologies
- Consists of **48 members**, including Canada and all nuclear weapon states



Formed in 1974

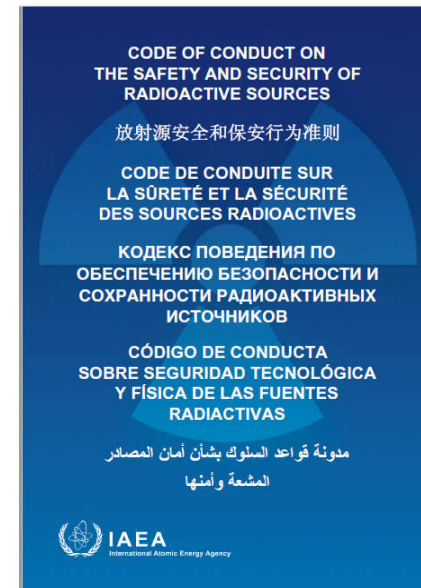
CNSC provides technical advice to the Canadian delegation



IAEA Code of Conduct

Political Commitment

- IAEA Code of Conduct on the Safety and Security of Radioactive Sources, and supplementary Guidance on the Import and Export of Radioactive Sources
- Enhanced import and export controls program implemented April 1, 2007



CNSC leads the Canadian delegation



Domestic Framework – Key Elements

Canada's Nuclear Non-proliferation Policy



Nuclear Cooperation Agreements (NCA)
and Administrative Arrangements (AA)



CNSC Regulatory Framework





Canada's Nuclear Non-proliferation Policy

- Assure Canadians and the international community that Canada's nuclear exports are solely for **peaceful purposes, non-explosive purposes**
- Promote a more effective and comprehensive international nuclear non-proliferation regime
- Significant nuclear trade can only occur
 - Subject to an **IAEA safeguards** agreement
 - Must be pursuant to a bilateral **Nuclear Cooperation Agreement**



Nuclear Cooperation Agreements

Legally-binding

- Peaceful, non-explosive end-use assurances
- Control over retransfer to 3rd parties of Canadian items
- Control over the high enrichment of Canadian uranium
- Fallback Safeguards in the event the IAEA is not able to inspect
- Adequate physical protection and security measures
- Control over reprocessing of any Canadian spent fuel
- Exchange of annual inventory reports

Negotiated by Global Affairs Canada with CNSC technical advice



Administrative Arrangements for NCAs

- Exchange of information on transfers
- Tracking and accounting of items
- Exchange annual inventory reports
- Consultations

CNSC Implementation of the NCAs



Administrative Arrangements for Risk-Significant Radioactive Sealed Sources

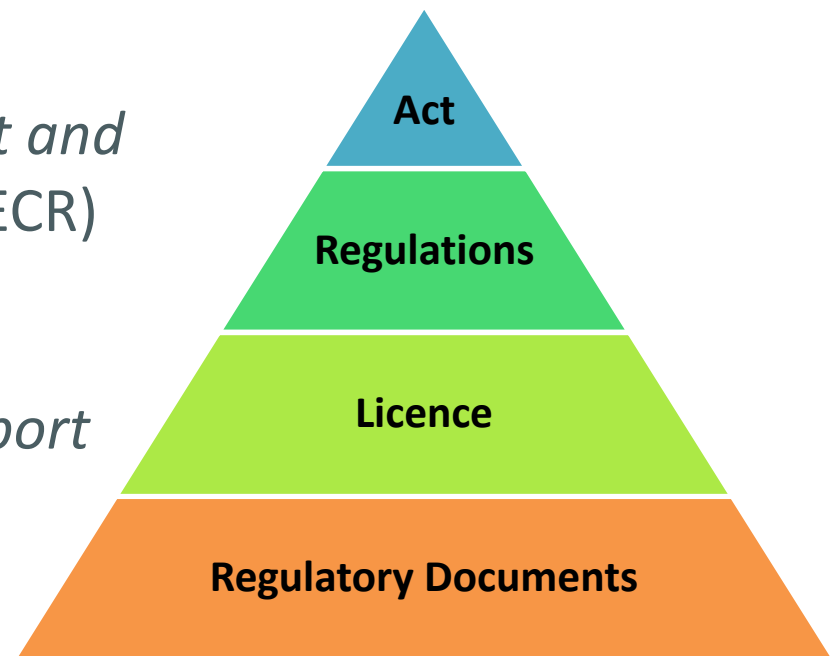
- Helps ensure that exports and imports of radioactive sealed sources are consistent with the Code
- Facilitates the sharing of information related to imports and exports of radioactive sealed sources
- Promotes harmonized regulatory approaches in authorizing imports and exports of radioactive sealed sources

AAs support implementation of the IAEA Code of Conduct



Regulatory Framework

- *Nuclear Safety and Control Act*
- *Nuclear Non-proliferation Import and Export Control Regulations (NNIECR)*
- Import & Export Licences
- REGDOC-2.13.2 – *Import and Export*





Nuclear Safety and Control Act

The *Nuclear Safety and Control Act* paragraph 26(a)

“Subject to the regulations, no person shall, except in accordance with a licence,

*(a) possess, transfer, **import, export**, use or abandon a nuclear substance, prescribed equipment or prescribed information;...”*



Nuclear Non-proliferation Import and Export Control Regulations (NNIECR)

The Schedule to the NNIECR is comprised of:

- Part A – Nuclear Items
 - Substances, Equipment, Parts, Information
- Part B – Nuclear related dual-use items
 - Substances, Equipment, Information
- The items in the NNIECR are based on the Zangger Committee and Nuclear Suppliers Group Lists

The NNIECR is aligned with internationally-recognized expert guidance



Examples of Substances

Part A.1 - Controlled nuclear substances

Plutonium, uranium, thorium, heavy water, tritium

Part B.1 - Controlled nuclear-related dual-use substances

Aluminum alloys, beryllium, bismuth, boron, nickel powder, zirconium, etc.





Examples of Equipment

Part A.2 & A.3 - Controlled nuclear equipment and parts

Nuclear reactors, fuel fabrication, conversion, enrichment, reprocessing, heavy water production plants, and associated parts.

Part B.2 - Controlled nuclear-related dual-use equipment

CNC machine tools, mass spectrometers, pulse generators tritium plants and equipment, etc.





Examples of Information

Part A.4 - Controlled nuclear Information

Technology for the design, production, construction, operation or maintenance of any item in the list of nuclear items.

Part B.3 - Controlled nuclear-related dual-use information

Technology for the design, production, construction, operation or maintenance of any item in the list of nuclear-related dual-use items.





End-Use Controls

- Captures items not listed in the NNIECR
- Intended for less sensitive items
- Help the CNSC ensure that Canadian exporters do not contribute knowingly or unwittingly to a nuclear weapons program

Provide flexibility and readiness to help ensure that Canadian exports do not contribute to a nuclear weapons program



REGDOC-2.13.2 – Import and Export

- **Part I** - provides guidance related to items controlled under the NNIECR
- **Part II** – provides guidance related to risk significant sealed sources





Risk-Significant Radioactive Sealed Sources

- Correspond to Category 1 and 2 radioactive sealed sources of the IAEA categorization of radioactive sealed sources
- Used in radiography, industrial irradiation, and medical applications
- Cobalt-60, Cesium-137, Iridium-192



Canada is the largest exporter of Cobalt-60



Import/Export Controls Program – Key Elements

Import and Export Licensing

—

Compliance and Enforcement

—

Collaboration and Partnerships

—

Case Study





Import and Export Licensing

- **Designated Officers** have the authority to make import and export licensing decisions
- On average **1000** Import and Export Licences are issued each year

Applications are assessed on a case-by-case basis



Import and Export Licensing of Nuclear and Nuclear-Related Dual-Use Items

CNSC considers a range of information:

- Party to the Nuclear Non-proliferation Treaty
- The applicability of bilateral NCAs
- Risk of diversion
- Nuclear weapons/explosive-related activities in the end-user country
- Utility of the item(s) to a nuclear weapon or nuclear explosive device
- End-use and end-user are legitimate
- Quantity and risk-significance of item



Export Licensing and Import Controls of Risk-Significant Radioactive Sealed Sources

CNSC considers a range of information for export licensing:

- risk associated with the end-user and consignees
- regulatory capability of the Importing State to provide assurances that the sources will be managed safely and securely
- import consent from the Importing State Authority

Import controls:

- risk-significant radioactive sealed sources are authorized for import under existing possession and facility licences
- review of prior import notifications submitted by foreign exporters



Compliance and Enforcement

- Verify compliance with import and export regulatory requirements through:
 - Desktop reviews of reports submitted pursuant to licence conditions, including pre and post shipment notifications
 - Inspections
- Use of enforcement measures in cases of non-compliance

Over 1000 desktop reviews per year



Compliance and Enforcement

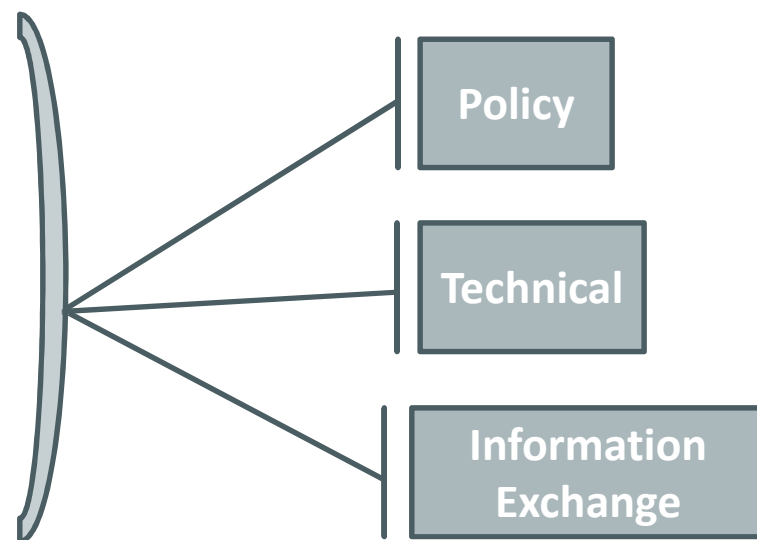
- Importers and exporters of CNSC regulated items are required to present a CNSC licence to a Border Service Officer, pursuant to Section 18 of the *General Nuclear Safety Control Regulations (GNSCR)*
- The Canada Border Services Agency (CBSA) assists the CNSC with verifying compliance with section 18 of GNSCR
- In cases where licence is not provided, CBSA could detain the items and request the CNSC to assess if a licence could be required

Regulated items will not be released without a CNSC licence



External Collaboration & Partnerships

- Global Affairs Canada
- Canada Border Services Agency
- Other Government Departments
- Foreign counterparts



Strength in Collaboration



Case study: Refusal to issue an export licence



Application:

- Item: Technology related to parts for nuclear equipment
- End-User: Located in a non-NPT state



Assessment:

- Concern: Risk of diversion
- Staff recommendation: Refuse the issuance of the licence



Opportunity to be heard:

- Designated Officer (DO) provided an opportunity to be heard under paragraph 39(1)(a) of the NSCA

DO Decision to refuse the licence based on:

- Consultations with Global Affairs Canada on application of policy
- Thorough review of all the information



Case study: Refusal to issue an export licence

Reasons for DO decision:

- Not meeting Canada's Nuclear Non-Proliferation Policy and Canada's international obligations
- Applicant informed of the decision and advised they can appeal the decision as per paragraph 43(1)(a) of the NSCA

Record of Decision:

- Report of DO decision submitted to the Commission as per paragraph 37(5)(a) of the NSCA

Rigorous and transparent process



COVID-19 Pandemic Impacts

- Full capacity to work remotely, with robust procedures and digital licensing processes
- Effective and efficient remote inspections
- Ability to respond to demand for Co-60
 - Used for sterilization of medical supplies including personal protective equipment and test swabs
- Postponed international activities

No Compromise to the Safety, Security and Safe Transport of Items



Upcoming Activities

- Proposed amendment of the NNIECR, primarily to update lists of controlled items, following major NSG review
- Revision of *REGDOC-2.13.2 Version 2, Import and Export*
- NPT Review Conference – late 2021
- 2022 International Conference on the Safety and Security of Radioactive Sources



Conclusions

- Robust and responsive import/export licensing and compliance processes
- In-house expertise and ongoing collaboration with domestic and international partners
- Well-established international and domestic framework
- Assurances that Canada's international obligations are respected and Canadians are safe

Effective and Efficient CNSC Import/Export Controls Program

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Annex – Zangger Committe Members

Argentina, Australia, Austria, Belarus, Belgium, Bulgaria, Canada, China, Croatia, Czech Republic, Denmark, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Japan, Kazakhstan, Republic of Korea, Luxemburg, The Netherlands, New Zealand, Norway, Poland, Portugal, Romania, Russian Federation, Slovakia, Slovenia, South Africa, Spain, Sweden, Switzerland, Turkey, Ukraine, United Kingdom and United States of America.



Annex – Nuclear Suppliers Group Participants

There are currently 48 Participating Governments (PGs) of the NSG. The year of participation is in brackets.

| | | | | |
|------------------|------------------------|--------------------|----------------------|---------------------|
| Argentina (1994) | Cyprus (2000) | Ireland (1984) | New Zealand (1994) | South Africa (1995) |
| Australia (1978) | Czech Republic (1978*) | Italy (1978) | Norway (1989) | Spain (1988) |
| Austria (1991) | Denmark (1984) | Japan (1974) | Poland (1978) | Sweden (1978) |
| Belarus (2000) | Estonia (2004) | Kazakhstan (2002) | Portugal (1986) | Switzerland (1978) |
| Belgium (1978) | Finland (1980) | Latvia (1997) | Romania (1990) | Turkey (2000) |
| Brazil (1996) | France (1974) | Lithuania (2004) | Rep. of Korea (1995) | Ukraine (1996) |
| Bulgaria (1984) | Germany (1974) | Luxembourg (1984) | Russia (1974) | U.K. (1974) |
| Canada (1974) | Greece (1984) | Malta (2004) | Serbia (2013) | U.S. (1974) |
| China (2004) | Hungary (1985) | Mexico (2012) | Slovakia (1978*) | |
| Croatia (2005) | Iceland (2009) | Netherlands (1978) | Slovenia (2000) | |

(* Czechoslovakia separated into the Czech Republic and Slovakia – participation date 5 Mar 1993)



Annex – Parties to Nuclear Cooperation Agreements with Canada

Canada has NCAs in place with 31 Countries*:

Argentina, Australia, Brazil, China, Columbia, Czech Republic, Egypt, Euratom, Finland, Germany, Hungary, India, Indonesia, Japan, Jordan, Kazakhstan, Mexico, Philippines, Republic of Korea, Romania, Russian Federation, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey, Ukraine, United Arab Emirates, United Kingdom, United States of America

* Canada-Euratom NCA includes all countries of the European Union. NCAs with the European Union member States cover controlled information (technology).



Annex – Administrative Arrangements with CNSC pursuant to Nuclear Cooperation Agreements

The CNSC has AAs in place with 26 Countries*:

Argentina, Australia, Brazil, China, Columbia, Czech Republic, Egypt, Euratom, Finland, Hungary, India, Jordan, Kazakhstan, Mexico, Republic of Korea, Romania, Russian Federation, Slovakia, Slovenia, Spain, Sweden, Switzerland, Ukraine, United Arab Emirates, United Kingdom, United States of America

* Canada-Euratom AA includes all countries of the European Union. AAs in place with states members of the European Union are in place to cover controlled information (technology).



Annex – Administrative Arrangements with CNSC pursuant to IAEA Code of Conduct

The CNSC has AAs on the import and export of risk-significant sealed radioactive sources in place with 12 Countries:

Argentina, Australia, Brazil, Chile, Columbia, Ireland, Italy, Japan, Mexico, Peru, Thailand, United States of America