Safeguards Requirements for Locations in CN2-

1. Purpose
The purpose of this document is to describe the safeguards requirements for specific licensees who have been identified by the Canadian Nuclear Safety Commission (CNSC) as authorized to possess or transfer small quantities of safeguarded nuclear material\(^1\). Due to the low risk nature of the activities conducted, full adherence to the requirements of RD-336 does not apply and only those requirements specified in this document will apply.

2. Background
Canada is a signatory to the Treaty on the Non-Proliferation of Nuclear Weapons, which calls for the application of International Atomic Energy Agency (IAEA) safeguards in all signatory States. ‘Safeguards’ is essentially an international system to verify that nuclear activities in a given State are peaceful in nature; it is based on the tracking and control of nuclear material. Through the Nuclear Safety and Control Act, the CNSC is responsible for managing the implementation of safeguards in Canada\(^2\).

Recognizing that application of a full safeguards regime is not warranted for low risk licensees who are authorized to possess or transfer small quantities of nuclear material but are not involved in nuclear fuel cycle-related research or development, the CNSC and the IAEA have created a modified safeguards scheme for these licensees. This approach allows the CNSC to fulfill Canada’s safeguards obligations to the IAEA in a low-impact, risk-informed manner, avoiding excessive burden on affected licensees.

This modified safeguards approach is administered by the CNSC’s International Safeguards Division (ISD) and is applied on a case-by-case basis in consultation between the affected licensee, the CNSC (ISD and the Nuclear Substance and Radiation Devices Licensing Division, NSRDLD), and the IAEA.

Licensees affected by this approach are, for the purposes of reporting to the IAEA, considered as a single unit designated by the safeguards code “CN2-“.

It is important to note that the safeguards approach described in this document does not grant permission to possess nuclear materials – it only facilitates possession and transfer of safeguarded nuclear materials as permitted by a valid licence.

3. Communications
Communications between the CNSC and licensees on safeguards matters should be sent directly to ISD staff. Further guidance on any of the topics discussed below, or on safeguards in general, is available from ISD on request.

NSRDLD staff remain the primary point of contact for all other licensing questions.

All safeguards reports described below can be submitted to the designated CNSC safeguards email address (safeguards-garanties@cnsc-ccsn.gc.ca) or, from September 2013, via the CNSC’s e-Business website; alternate methods of submission (fax, paper mail) are also acceptable.

4. Requirements
Licensees which are part of CN2- are required:
- to submit nuclear material accountancy information to the CNSC,
- to carry out an annual Physical Inventory Taking, and

\(^1\) ‘Nuclear material’ can be roughly defined as uranium, thorium, and plutonium, excluding ores and other impure forms.

\(^2\) The high level safeguards requirements for Canada are laid out in two documents: the Canada/IAEA Safeguards Agreement and the Protocol Additional to the Canada/IAEA Safeguards Agreement. Both documents are available on the CNSC website.
to **grant access** to CNSC and IAEA safeguards inspectors under specific conditions, described below. These obligations derive from Section 12.1.(i) of the *General Nuclear Safety and Control Regulations*.

### 4.1 Nuclear Material Accountancy

The CNSC is responsible for ensuring that all nuclear material in Canada is accounted for, and reported to the IAEA where appropriate. Nuclear materials accountancy at CN2- is based on **Inventory Change Documents**, a **List of Inventory Items**, and an annual **Physical Inventory Taking**, as described below.

#### 4.1.1 Inventory Change Documents

Inventory Change Documents (ICDs) are material transfer forms which allow the CNSC to track the movement of safeguarded material in Canada. Any shipment or receipt of nuclear material within Canada requires the submission of an ICD, and ICDs must also be used to report ‘internal’ inventory changes, for example where material has been used up during analysis. ICDs are due to be submitted to the CNSC within one (1) business day of a transaction taking place.

CN2- licensees may use the standard ICD template (copy attached), available from the CNSC website, or on request from ISD. Guidance on how to fill out an ICD can be found in RD-336 Section 6.1 and GD-336 Section 4.1.

#### 4.1.2 List of Inventory Items

The List of Inventory Items (LII) is an itemized list of all safeguarded material currently on-site, and it provides the basis for reports that the CNSC must submit to the IAEA. LIIIs should be kept up to date by the licensee and must be submitted to the CNSC within seven (7) business days of the annual Physical Inventory Taking (discussed in the next section).

CN2- licensees may use the standard LII template (copy attached), available from the CNSC website, or on request from ISD. Guidance on how to fill out LIIIs can be found in RD-336 Section 6.4 and GD-336 Section 4.4.

### 4.2 Annual Physical Inventory Taking

The CNSC requires that each licensee under CN2- carry out an annual Physical Inventory Taking (PIT), to ensure the accuracy of their List of Inventory Items. On the pre-determined PIT date, licensees must physically account for all items on their LII, and verify that no additional potentially safeguardable material is on-site. Upon completion of the PIT, licensees have seven (7) business days in which to submit an updated and signed LII to the CNSC.

The PIT date for CN2- is selected annually by the CNSC, but must be within 14 months of the previous PIT. Commencing with the 2014 PIT licensees will be informed of an upcoming PIT date **90 days in advance**.

### 4.3 Access

The CNSC and IAEA will periodically require access to CN2- licensees for safeguards purposes. Access could take one of several forms, as described below.

#### 4.3.1 IAEA Physical Inventory Verification

Up to one month after the Physical Inventory Taking date, the IAEA may choose to perform a Physical Inventory Verification (PIV) at any given CN2- licensee in order to verify that the nuclear material inventory is as declared. Typically, a given licensee should be subject to an IAEA PIV no more than once every four to five years. The IAEA will notify ISD of which licensee has been selected for PIV one week prior to arrival on-site.

PIV inspection activities may include:
(1) A physical check for the presence of all nuclear material found on the LIIs;
(2) Non-destructive assay measurements to verify the composition of nuclear material; and,
(3) An audit of nuclear material accountancy documents (i.e. ICDs and LIIs).

ISD will immediately notify any licensee selected by the IAEA for PIV; ISD staff will accompany the IAEA during all PIVs at CN2- licensees.

4.3.2 CNSC PIT Evaluation

For those licensees not selected for Physical Inventory Verification by the IAEA in a given year, the CNSC may carry out a Physical Inventory Taking Evaluation (PIT-E) to ensure that the licensee in question has completed its PIT as required and would have been prepared for an IAEA PIV had it been selected.

PIT-E activities may include:

(1) A physical check for the presence of all nuclear material found on the LIIs;
(2) An audit of nuclear material accountancy documents (i.e. ICDs and LIIs); and,
(3) A walk-through of the LOC’s operations.

As with the PIV, the PIT-E can take place up to one month after the annual PIT date. ISD will notify the licensee one week in advance if selected for a PIT-E.

4.3.3 IAEA Complementary Access

Under its safeguards agreements with Canada, the IAEA has the right to access certain types of locations in the country, including licensees under CN2-, on 24-hours notice. This is termed a Complementary Access (CA), and allows the IAEA to verify the absence of undeclared nuclear material and activities. On average, the IAEA carries out 6-7 CAs in Canada per year, mostly at major nuclear facilities. The likelihood of a licensee under CN2- being selected for an IAEA CA is low compared to major nuclear sites.

Complementary Access activities may include:

(1) Visual observation and, with licensee permission, photographs of licensee equipment and/or operations;
(2) Collection of environmental samples (e.g. swipe samples); and,
(3) Utilization of non-destructive radiation detection and measurement devices.

The CNSC attempts to attend all CAs, but because of the short notice involved this can be logistically difficult. If unable to attend, ISD staff will nonetheless prepare and assist the selected licensee to the extent possible via telephone and email.
### INVENTORY CHANGE DOCUMENT (ICD)

#### Report Type:
- [ ] internal
- [ ] Domestic
- [ ] Import
- [ ] Export
- [ ] Retransfer
- [ ] From Holding Account

#### Licensee Reference No:

#### Shipper
- Shipped Date: [472]
- Batch Name: [447]
- Country Code: [376]
- Holding Account Code: [2065]
- LOCa: [407]
- Measurement Basis: [452]

#### Shipper Company
- Company Name:
- Contact Name (First):
- Contact Name (Last):
- Apt. #:
- Civic #: 
- PO Box:
- Dept.:
- Building:
- Street:
- City:
- Province:
- Country:
- Postal Code:

#### Internal/Receiver
- Internal/Received Date: [412]
- Batch Name: [445]
- Country Code: [376]
- Holding Account Code: [2065]
- LOCa: [407]
- Measurement Basis: [452]

#### Internal/Receiver Company
- Company Name:
- Contact Name (First):
- Contact Name (Last):
- Apt. #:
- Civic #: 
- PO Box:
- Dept.:
- Building:
- Street:
- City:
- Province:
- Country:
- Postal Code:

#### Nuclear Material Description

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<th>Units (kg/g)</th>
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<th>Unique Identifier (Batch of Items)</th>
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#### Signature (if required):

#### Date:

Form must be submitted in Excel version 2003 only (CNSC cannot accept .xlsx files)
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