



# DNSR Newsletter

## Financial Guarantees Coming for DNSR Licensees

In May 2000, when the *Nuclear Safety and Control Act* (NSCA) came into force, the CNSC was given discretionary authority to require financial guarantees for any licence. Under the NSCA, the Commission Tribunal or a designated officer may require a financial guarantee as a condition or term of a licence.

When a licensee ceases to carry on the activity or activities authorized by the licence, there are often costs associated with decommissioning the facility, cleaning up the site and disposing of nuclear substances. A financial guarantee is a licensee's tangible commitment that funds will be available to safely terminate activities and to leave a licensed site or activity in a safe state, whether the termination is planned or unplanned.

Since 2000, financial guarantees have been implemented for Class I nuclear facilities and uranium mines and mills, based on preliminary decommissioning plans. In most cases, guarantees have consisted of a letter of credit or financial backing by the federal or a provincial government.

The CNSC is currently designing a financial guarantee regime for all licences for nuclear substances, radiation devices and Class II facilities. CNSC staff completed developing an approach to apply financial guarantees to the majority of approximately 2,700 licences issued by the CNSC's Directorate of Nuclear Substances Regulation (DNSR). The CNSC will also begin developing its business processes and infrastructure to implement this regime.

CNSC staff tailored financial guarantee requirements based on an evaluation of the operational, commercial and financial risks posed by different licensed activities. From this evaluation, licensees were grouped into three tiers:

- Tier 1: This tier represents licensees with the highest overall risk that require financial guarantees. These are predominantly private industrial companies that use nuclear substances, radiation devices and prescribed equipment. For the most part, these licensees use fixed and portable gauges and industrial radiography cameras, and perform servicing operations. Over the past few years, there have been repeated instances of corporate bankruptcy and business failure within this

group, which has about 1,150 licences and represents approximately 43% of DNSR licensees.

- Tier 2: This group is made up of licensees that present an overall medium risk for financial guarantees, mainly due to their status as public institutions. These organizations are rated at a lower risk level than those in Tier 1, because they are likely supported by government and are therefore also likely to be more financially stable. Examples include hospitals, universities and government departments. Tier 2 comprises about 900 licences and represents about 33% of DNSR licensees.
- Tier 3: This group, with the lowest overall risk for financial guarantees, is composed of users of low-risk nuclear substances and equipment such as X-ray analyzers that contain small amounts of a nuclear substance. This group includes about 700 licences, or around 24% of DNSR licensees.

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**Note:** Financial guarantees may not be necessary for certain regulated activities, such as transport, dosimetry services, and import and export operations.

The CNSC plans to share information about the new financial guarantee requirements through its Web site, newsletters, email messages, information sessions and meetings with licensees. This communication will give licensees an overview of the proposed financial guarantee regime. The CNSC has also recently published [DIS-11-01, Discussion Paper Regarding the Implementation of Financial Guarantees for Licensees](#), and posted it for comment on the CNSC Web site. Licensees are invited to review it and provide their feedback via the online submission form.

After these outreach and communication activities are completed, the Commission Tribunal will be asked to amend, on its own motion, all licences for nuclear substances, radiation devices and Class II facilities to include a condition requiring financial guarantees where necessary.

Licence amendments will require licensees to provide their financial guarantees within 24 months from the date of licence amendment. This period will give licensees time to prepare for the financial guarantee regime and to ensure funds are available as required. When the 24-month period is up, CNSC staff will be in a position to begin verifying compliance with the financial guarantee requirements. 

## Poster and Brochure Published

Radiation portal monitors are used at Canada–US border crossings, municipal waste transfer stations, and metal recycling companies to scan shipments of scrap metal and other wastes for radioactive contamination. These radiation portal monitors are not licensed by the CNSC, as they do not contain a nuclear substance.

These monitors are designed to detect radioactive contamination in the form of:

1. outpatient waste from individuals who have received a nuclear medicine treatment with a nuclear substance
2. items containing naturally occurring nuclear substances
3. other radioactive nuclear substances for which a CNSC licence is not required, such as radium dials
4. orphan sources, which are nuclear substances no longer under the control of a licensee (depending on the physical half-life and the radioactivity of the source, the source may pose a radiation hazard)

The CNSC recently published a [new poster and associated brochure](#) about how to respond to portal monitor alarms, and also posted these to its Web site.

## Orders

The [Nuclear Safety and Control Act](#) authorizes the Commission Tribunal of the CNSC, its designated officers and inspectors to issue orders to CNSC licensees. They may order a licensee to take any measure considered necessary to protect the environment, the health or safety of persons, or to maintain national security or compliance with international obligations to which Canada has agreed.

As a result of a CNSC inspection conducted on December 15, 2010, an order was issued to **Core Laboratories Canada Ltd.** of Red Deer, Alberta, a geotechnical and environmental materials consulting company.

The order required the company to cease using CNSC-licensed radiation devices, and to immediately put the equipment into storage. The company was also required to quarantine all contaminated equipment until it could be decontaminated or disposed of in accordance with regulatory requirements. In addition, several deficiencies such as the company's radiation protection program and record keeping associated with the use of nuclear substances needed to be corrected, to ensure the safe use of nuclear substances to protect workers, the public and the environment.

On January 12, 2011, the CNSC confirmed that the company had complied with the order. 

It is important to educate workers in the recycling industry, at landfill sites and in other sectors about how to safely manage and handle these nuclear substances if they are detected. The CNSC's new poster and brochure contain the following information:

1. guidance and response actions to be taken when a radiation portal monitor alarm is activated
2. safety considerations for dealing with unidentified radioactive nuclear substances
3. hazards and risks associated with nuclear substances and radiation devices
4. information related to the detection of nuclear substances and radiation devices

Managing nuclear substances correctly can prevent or reduce hazards to workers, the public and the environment. Workers and persons who are likely to encounter these sources are encouraged to follow the CNSC's guidelines and to implement appropriate monitoring programs to detect these sources.

For more information or to view the poster and brochure, please visit the [CNSC Web site](#). 



## Overview: Transport Licensing and Strategic Support Division

The CNSC's Transport Licensing and Strategic Support Division (TLSSD) regulates several nuclear-related activities that fall under the regulatory oversight of the Directorate of Nuclear Substances Regulation (DNSR). Under the direction of Mr. Sylvain Faille, the division has 17 staff members who oversee three regulatory areas:

- certification of transport packages and radiation devices
- regulatory information systems
- program development and support

### Certification of Transport Packages and Radiation Devices

The TLSSD issues transport licences and certifies transport packages and special form radioactive material, pursuant to the [Packaging and Transport of Nuclear Substances Regulations](#) (PTNSR). There are currently over 100 transport certificates valid in Canada. They are normally issued for a five-year period. In addition, approximately 150 transport licences are issued each year. Most of these licences are for specific shipments and are only valid for a limited period of time (three months on average) over which the shipment is expected to occur.



*Radiation devices and transport packages similar to the above are certified by the Transport Licensing and Strategic Support Division.*

The TLSSD is also responsible for certifying radiation devices pursuant to the [Nuclear Substances and Radiation Devices Regulations](#). These certificates are normally issued for a 15-year period. There are currently over 1,100 radiation device certificates in Canada.

Applications for the certification of transport packages and radiation devices are assessed by professional engineers. They review submitted information to ensure that the package design or radiation device complies fully with regulatory requirements.

TLSSD staff also conduct inspections to verify if facilities and transport carriers of nuclear substances (Class 7 Dangerous Goods) comply with the requirements of the PTNSR. In case of non-compliance, the CNSC uses a

graduated enforcement approach, whereby the selected enforcement actions are commensurate with the risk of the non-compliance.

### Regulatory Information System

TLSSD employees coordinate the mandatory tracking by licensees of radioactive sealed sources within Canada. All high-risk sealed sources are tracked in the CNSC Sealed Source Tracking System and registered in the National Sealed Source Registry to ensure the safety and security of sealed sources.

### Program Development and Support

Through planning, consulting and communication, TLSSD employees develop and manage regulatory programs, processes, procedures and guides in support of the DNSR and CNSC mission and mandates.

The TLSSD also produces reports and documents intended for licensees and members of the public. [Reports on lost and stolen sealed sources and radiation devices](#), along with annual reports on the [Sealed Source Tracking System](#) and [National Sealed Source Registry](#) are posted on the CNSC Web site. More recently, a poster and pamphlet, [Alarm Response Guidelines – Radiation Portal Monitoring Systems](#) — prepared by TLSSD staff in collaboration with the CNSC Strategic Communications Directorate — was also posted on the CNSC site. The division also produces the *DNSR Newsletter*. 

## Recall of Teleflex Cables

In November 2010, the CNSC was informed that a small number of flexible drive cable assemblies were recalled in Canada. These cable assemblies are manufactured by Nordion Inc. and used with various industrial radiography exposure devices.

Nordion Inc. issued the voluntary recall on Teleflex cables with a D-898B male connector crimped to one end. The recall was issued after 11 of these cable assemblies, which were manufactured in Belgium, were not fully verified before they were shipped to Canada.

There have been no reported issues or incidents associated with these cables; however, for precautionary reasons, Nordion is requiring their return so they can be inspected.

For further information, contact Nordion at 613-592-2790. 

## Canadian Standards Association to Develop Certification Standard

The CNSC has asked the [Canadian Standards Association \(CSA\)](#), under an existing Contribution Agreement between the two parties, to develop a new standard for certified of exposure device operators (CEDOs) in Canada.

Recent annual reports on occupational radiation exposure published by [Health Canada's National Dose Registry](#) indicate that exposure device operators (EDOs), also known as industrial radiographers, typically receive some of the highest occupational radiation doses in the Canadian nuclear industry.

To address this issue, the CNSC implemented a regulatory strategy to improve this sector's safety performance and established a joint CNSC/Industrial Radiography Working Group (see [DNSR Newsletter, fall 2010](#)), made up of representatives from the CNSC, industrial radiography licensees (some of which are members of the [Canadian Industrial Radiography Safety Association \(CIRSA\)](#)), and radiography equipment manufacturers. The working group identified safety as a top priority and also concluded that the current EDO certification process needed to be reviewed and modernized. The working group therefore agreed that information in CNSC guidance document [G-229, Certification of Exposure Device Operators](#) be revised into an appropriate CSA standard. The proposed standard would take information currently found in G-229 and present requirements for the radiography industry with respect to training, certification and recertification of EDOs.

Industrial radiography devices are principally used to conduct non-destructive testing to confirm the integrity of various steel components and materials — such as welds, metal castings, and civil structures like bridges, pipeline construction, and high-rise buildings. The technology replaces other conventional diagnostic techniques when work must be performed *in situ* or where no source of power is available. The CNSC categorizes industrial radiography as a “high-risk” activity based on several inherent risk factors including device source strength, radiation protection, emergency preparedness, personal protection, security and international obligations. The CNSC expects industrial radiography to be controlled with a high level of safety and security.

The CSA has over 90 years of experience in publishing standards for the Canadian marketplace. Through the CSA's process, the new CEDO standard will be developed by a joint committee made up of representatives from the federal government, radiography industry and manufacturing sector, as well as other stakeholders.

The CSA successfully develops standards using a consensus-based approach, to ensure that no single group dominates the process.

A CSA standard specific to the certification of exposure device operators will enhance the current CNSC certification process by relating it directly to the occupational health, safety and security requirements of Canadian EDOs and EDO trainees. The new standard will also incorporate Canada's first consensus based workplace health and safety management standard, CSA Z-1000-06, *Occupational Health and Safety Management*.

After the new standard is published, the CSA will establish a permanent committee to regularly review, update and refine it. This will ensure the standard continues to reflect developments in safety and technology, as well as current marketplace realities. 

## CNSC Inspectors Participate in Emergency Exercise

In late September 2010, the CNSC was invited to take part in an emergency exercise at an Edmonton Transit System garage in Edmonton, Alberta. Inspectors from the CNSC's Calgary Regional Office represented the CNSC during the event. Other emergency personnel involved in the exercise included responders from Edmonton police and fire services, paramedics, Edmonton transit staff, the City of Edmonton Office of Emergency Preparedness, and the Department of National Defence.

The exercise scenario consisted of a simulated transport incident involving radioactive material. The emergency exercise provided an excellent opportunity for different responding agencies to work together and coordinate their responses and activities. CNSC inspectors were able to provide input during the event and make recommendations that were useful in mitigating the impact of the hypothetical incident. 



*First responders involved in the emergency exercise included Edmonton police, fire fighters and paramedics.*



## Outreach Activities

The Nuclear Substances and Radiation Devices Licensing Division (NSRDLD) oversees approximately 2,500 licences issued for the use of nuclear substances in the industrial, medical, academic and commercial fields. The NSRDLD has the most diverse licensee base within the CNSC, ranging from small businesses up to large multinational corporations.



*Outreach events help the CNSC to strengthen contacts with licensees and to obtain and provide licensee feedback in an informal setting.*

and to obtain and provide feedback in a venue that is much less formal than an inspection or licence renewal.

Under this program, NSRDLD staff, accompanied by members of the Operation Inspections Division, travel to licensee locations across Canada to present topics

Over the last four years, the NSRDLD has operated a successful and well-received licensee outreach program, to support the CNSC's mandate and to regulate in a transparent fashion. Outreach events are an important way for the CNSC to strengthen contact with the licensee community

of interest to the overall licensee community. Topics are chosen based on suggestions from licensees or are selected to help reinforce licensees' understanding of their obligations under the *Nuclear Safety and Control Act* and related regulations. All presentations include a question-and-answer period related to the topic at hand or any subject linked to the licensed operations. Past events have dealt with a wide range of subjects, including the CNSC's role, updates on compliance activities, licensee reporting requirements, the licensing process, and amendments to regulations.

Since 2007, the NSRDLD has participated in many outreach activities from coast to coast. These events are usually short (about three hours long) and attract local and nearby licensees. The size of these meetings has varied from 10 to more than 75 people.

In organizing outreach events, the CNSC looks to a local licensee to host and provide logistical support, such as a room with audiovisual equipment and, if possible, light refreshments. The CNSC handles all other aspects, including speakers and invitations to licensees in the area.

If you are interested in hosting a CNSC licensee outreach presentation or would like to suggest a topic for discussion, please contact the NSRDLD at [info@cnsccsn.gc.ca](mailto:info@cnsccsn.gc.ca).

## Notice to Licensees

The CNSC would like to remind all licensees authorized to possess americium-241/beryllium (Am-241/Be) and californium-252 (Cf-252) neutron sources that they are required to make adequate provisions for the health and safety of workers and the public, in respect of dose control and security of these source types. This notification is being issued as a result of an inspection performed by the CNSC in 2010, during which Am-241/Be sources were found to be inappropriately stored within the licensed location. The improper storage resulted in a neutron dose rate above the regulatory limit in a publicly accessible area (adjacent to the licensed location).

Every licensee whose licence authorizes the possession of such Am-241/Be or Cf-252 sources is required to implement a radiation protection program (covering all types of radiation, including neutrons) to ensure that occupational and public exposure will not exceed regulatory limits and will be kept as low as reasonably achievable.

If you have any questions about this notification, please contact any of the following CNSC regional offices:

CNSC Regional Offices	Telephone	Fax
Western Regional Office – Calgary	403-292-5181	403-292-6985
Southern Ontario Regional Office – Mississauga	905-821-9366	905-821-3566
Central Regional Office – Ottawa	888-229-2672	613-995-5086
Eastern Regional Office – Laval	450-973-5766	450-973-5779



## Safety Recall of GammaMat Camera

In late January 2011, Nordion Inc. issued a safety recall of all GammaMat M10-1 exposure devices used in the Canadian market. Nordion reported that some of these radiography cameras may have had an incorrectly sized O-ring installed under the retaining screw that secures the radioactive source in a source holder.

The following issues could arise as a result of an improper O-ring:

1. The device may not be able to move the radioactive source to its exposure position.
2. Although the device is able to move the radioactive source to its exposure position (driven by an electric motor), the return spring may not have adequate force to return the source to its shielded position.
3. The radioactive source retaining screw may gradually back out (unscrew) from its normal position. The first indication of this would be the operator's inability to install a key lock to secure the source in its shielded position. If gradual backing out of the retaining screw

is not detected early and is allowed to continue, the screw could eventually fall out, freeing the source from its safe and secure location inside the source holder.

Nordion is asking all GammaMat M10-1 camera users to remove these devices from service and ensure that the brass key lock can be fully inserted and locked in the device. With the key lock properly installed, they are asked to prepare the device for shipment as per the transport requirements in section 6 of Nordion's GammaMat M6/M10 User Manual.

Users of the GammaMat M10-1 camera are asked to return these cameras to Nordion at the following address, where the correct O-ring will be installed free of charge:

Nordion  
Attn: Darlene Spence  
447 March Road  
Ottawa, ON K2K 1X8

For further information, please contact Nordion Service at 1-800-257-6211 (toll free in North America). 

## Medical Accelerators Subject to Regulations

The Accelerators and Class II Facilities Division of the Canadian Nuclear Safety Commission (CNSC) is responsible for regulating accelerators and Class II nuclear facilities and prescribed equipment in Canada. The division recently sent a letter to all licensees of medical accelerators certified by the CNSC as Class II prescribed equipment.



Medical linear accelerators are subject to CNSC licensing as Class II nuclear facilities.

These licensees were notified that, regardless of the maximum operating photon beam energy, a medical accelerator which is certified as Class II prescribed equipment under the [Class II Nuclear Facilities and Prescribed Equipment Regulations](#)

(CNFPE Regulations) is subject to the CNSC licensing as a Class II nuclear facility. One example is the Varian TrueBeam medical linear accelerator. Even if the maximum energy has been limited to 6 megavolts (MV)

via the control software, this linear accelerator is certified by the CNSC as Class II prescribed equipment, as it is designed to produce photon beam energies of up to 15 MV.

The CNSC contacted licensees in order to clarify the application of the [Nuclear Safety and Control Act](#) and the CNFPE Regulations. These regulations define a Class II nuclear facility as "a facility that includes Class II prescribed equipment". Consequently, if the equipment used in a given facility has been certified as Class II prescribed equipment, it follows that the facility must also be operated in accordance with these regulations.

A complete [list of certified Class II prescribed equipment](#) is available on the CNSC Web site. If your institution owns or operates equipment that is included on this list, but is not currently under a CNSC licence, be advised that this equipment is subject to CNSC regulations and must be operated under a CNSC licence.

Further information can be obtained by contacting the CNSC as indicated on the next page. 



## Application Guide and Form Published

In December 2010, the CNSC published RD/GD-254, [Application Guide – Certification of Radiation Devices or Class II Prescribed Equipment](#) and its related [application form](#).

RD/GD-254 provides interested applicants with information on how to complete and submit an application for the certification of radiation devices and Class II prescribed equipment, in accordance with the NSCA and its Regulations.

This certification is not to be construed as a licence for use or servicing. Radiation devices and equipment used in Class II nuclear facilities must be certified by the CNSC before they can be licensed by the CNSC for use in Canada.

Certification is required to ensure that radiation devices and equipment are designed to acceptable quality standards and will be able to perform their intended function in a manner that meets all safety measures.

Once a CNSC certificate has been issued for a radiation device or Class II prescribed equipment, it applies to a specific model design and to particular operating conditions only, as indicated on the certificate. Any changes to the design or the use of the prescribed equipment or radiation device may require a new certificate to be issued.

A paper copy of RD/GD-254, in either official language, may be obtained by contacting the CNSC at the coordinates below. 

## Industrial Radiography Working Group Update

The Industrial Radiography Working Group, which comprises members from the radiography industry and the CNSC, held a teleconference meeting on January 13, 2011. Minutes of previous meetings can be found on the [CNSC Web site](#) under the [Industrial Radiography Working Group](#) link. The Working Group continues to implement the regulatory strategy for industrial radiography, an update of which was presented to the Commission Tribunal in September 2010 (see [DNSR Newsletter, fall 2010](#)).

The CNSC also organized meetings in Ottawa, Ontario, on May 12, 2011, and in Leduc, Alberta, on May 25, 2011. Building on last year's successful meetings, safety and performance topics related to industrial radiography were presented. An update was also offered on the joint CNSC and Industry initiative to replace the CNSC Guidance Document [G-229, Certification of Exposure Device Operators](#), with a CSA standard on the same topic (see article on page 4 of this [DNSR Newsletter](#)).

For more information on these meetings, contact [Tammy Madsen](#) at 403-292-4802. 

### DNSR Newsletter

The *DNSR Newsletter* is a CNSC publication. If you have any suggestions on topics or issues that you would like to see covered, please do not hesitate to contact us.

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