



DNSR Newsletter

Introduction

Welcome to the first edition of the Directorate of Nuclear Substance Regulation (DNSR) newsletter, a publication of the Canadian Nuclear Safety Commission (CNSC). As an agency of the Government of Canada, we are committed to being open and accountable, and actively pursue ways to keep you informed about our activities.

With this first issue, we are pleased to introduce a forum for sharing information with our stakeholders — including licensees and non-licensees (such as waste and scrap metal facilities and transport carriers).

The CNSC's DNSR regulates the production, possession, packaging, transport and use of nuclear substances, radiation devices, Class II nuclear facilities, and prescribed equipment. It is also responsible for inspections of about 3,500 licensees across Canada.

DNSR is divided into four sector-specific divisions:

1. Operations Inspection Division
2. Nuclear Substances and Radiation Devices Licensing Division
3. Class II Nuclear Facilities and Equipment Division
4. Transport Licensing and Strategic Support Division

Comments and questions regularly received by DNSR mainly address the interpretation of regulations and compliance issues. We usually reply to each request, outlining CNSC expectations. We have noticed that many of these inquiries address similar issues and that our responses contain similar messages. Recognizing these common, important concerns of DNSR stakeholders, we responded by creating this publication as an avenue to relay this information in a timely, efficient manner.

The *DNSR Newsletter* will be posted on CNSC's Web site. In future, it is expected that readers will be able to request email notifications of when new issues are available. We hope you find this newsletter relevant and useful.

If you have any suggestions on topics or issues for future editions, please

do not hesitate to contact us by email at nuclearsubstances-substancesnucleaires@cnsccsn.gc.ca, or by phone at 1-888-229-2672. We also invite you to visit the CNSC Web site at nuclearsafety.gc.ca

Sincerely,
André Régimbald
Director General, DNSR



André Régimbald, Director General, DNSR

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Radiography Camera Recalled

In December 2008, an incident discovered at the MDS Nordion facility in Kanata, Ontario, resulted in the safety recall of 18 GammaMat M-10 industrial radiography cameras.

The CNSC's investigation revealed that a GammaMat M-10 camera left the servicing company in Edmonton on December 16, 2008, and arrived at Nordion in Kanata on December 22. It had been sent to Nordion to be reloaded with a fresh Iridium-192 source before being returned to the servicing company.



Safety concerns with the GammaMat M-10 industrial radiography camera resulted in the recall of 18 of these exposure devices by MDS Nordion.

Upon arrival at Nordion, removal of the package from the delivery truck set off a radiation monitor alarm. It was found that when the package had been prepared for shipment, the operator had experienced difficulty inserting a brass key lock into one of the M-10 cameras. When the source was removed at Nordion, it was observed that the camera did not have the key lock inserted, causing the source to be in an unshielded position.

The brass key is meant to ensure that the source holder is held in a fully shielded position. Further study of the incident revealed that movement of the M-10 camera without the brass key in place may allow the retaining screw to loosen and the source to become exposed. As a result, Nordion enhanced its loading procedure for the M-10 camera to correct this problem. As of January 12, 2009, all cameras shipped to Nordion had been verified to comply with the revised procedure.

As requested by the CNSC, Nordion sent a safety recall notice on May 15, 2009, to all users of the GammaMat Camera M-6 Crawler with M-10 Head, to ensure all cameras would be checked. Nordion is to notify the CNSC after all devices in use have been verified.

MDS Nordion will also submit a revised application for certification of the GammaMat M-10 to the CNSC to reflect all changes that have occurred since the last application submission and to update the information according to current industry practices. ✍

CNSC Establishes Industrial Radiography Working Group

At the December 11, 2008, meeting of the Commission Tribunal, staff from the CNSC's Directorate of Nuclear Substance Regulation (DNSR) provided an update to the DNSR Regulatory Strategy for Industrial Radiography (CMD 08-M87). Leading up to the presentation, CNSC staff held two September 2008 meetings with industrial radiographers in Ottawa and Nisku, Alberta.

A recommendation from these meetings was to create a working group with representation from the CNSC and industry, which would meet regularly to discuss issues of common interest about industrial radiography.

The first meeting of the Industrial Radiography Working Group was held on May 6, 2009, in Nisku.

The group's participants include:

- Alan Brady, TISI Inspection Services Inc.
- Chris Spencer, Spencer Manufacturing Ltd.
- François Rodier, Labcan Ltée.
- Joel Kish, Inspectrum Testing Inc./Canadian Industrial Radiography Safety Association (CIRSA) Executive Member
- Rick DeBruyn, Aztec Inspection Inc./CIRSA Vice-President
- Tom Levey, Acuren Group Inc./CIRSA Communications Officer

DNSR staff:

- André Régimbald
- Sylvain Faille
- Peter Fundarek
- Rajesh Garg
- Karen Mayer
- Peter Larkin
- Eric Fortier ✍



DNSR on the Move


In mid-April 2009, most of the staff in the CNSC's Directorate of Nuclear Substance Regulation (DNSR) relocated to offices in Ottawa's east end. The remainder of DNSR staff moved on September 18. Employees' direct telephone numbers have changed, but their fax numbers, email and mailing addresses have not.

To ensure uninterrupted access to your Licensing Specialist or Project Officer, we invite you to use DNSR's automated toll-free number, which will connect you to DNSR sections such as compliance, licensing, transportation, certifications and cost recovery. Immediate assistance may also be obtained by pressing 0.

**DNSR's toll-free number is:
1-888-229-2672**

Important dialing information for licensees

When you call the 1-888 line, instructions will guide you to the person you wish to reach. When the system prompts you to enter your licence number, input the number's first seven digits. These digits are the first five digits before the first hyphen (-) and the two digits after it.

Note: If your licence number has only one digit after the first hyphen, you must input a 0 before that digit (e.g., 01, 02 or 03 instead of 1, 2 or 3). 

Exposure Device Operator Decertified


The CNSC was informed of an incident that occurred on December 17, 2008, whereby a radiation exposure device was operated in contravention of several sections of the *Nuclear Substances and Radiation Devices Regulations* (NSRD Regulations) and the *General Nuclear Safety and Control Regulations*. Subsequent investigations resulted in the decertification of Mr. Clay Anderson, of Edson, Alberta.

It was determined that Mr. Anderson knowingly operated an exposure device when his alarming dosimeter was not functioning. After completing the exposure, he did not return the source into the shielded position in the exposure device, nor did he use a survey meter to verify that the source had been returned to the shielded position. Mr. Anderson was only alerted to the exposed source by a co-worker, who had a survey meter.

It was concluded that the underlying causes of this incident were the improper use of radiation detection equipment,

failed batteries, inattention and complacency. It was determined that the incident's root cause was the failure to return the source to the fully shielded position before the worker approached and handled the exposure device.

On June 8, 2009, the CNSC informed Mr. Anderson by registered mail of its proposed decision to decertify him, pursuant to subsection 27(1) of the NSRD Regulations. By this letter, Mr. Anderson was given the opportunity to be heard in accordance with subsection 27(2) of the NSRD Regulations. Mr. Anderson did not request an opportunity to be heard.

Following completion of this process, the CNSC proceeded to decertify Mr. Anderson as a Qualified Operator of Exposure Devices, effective September 4, 2009. 

Licences Revoked

On March 6, 2009, the CNSC announced the revocation of three licences issued to 588972 Alberta Limited, operated as Enviropac Inc.

588972 Alberta Ltd. provides services to the oil and gas industry and the portable gauge industry. In proceedings before the Commission Tribunal, the Tribunal concluded that the company remained unqualified to carry out the activities authorized by its licences. Therefore, pursuant to Section 25 of the *Nuclear Safety and Control Act* (NSCA), the Tribunal revoked the following licences:

1. Licence 12127-2-09.1, for the storage of nuclear substances and prescribed equipment;
2. Licence 12127-3-09.0, for the processing of unsealed nuclear substances; and
3. Licence 12127-4-09.0, for calibration.

This means that 588972 Alberta Ltd (operating as Enviropac Inc. or under any other name) is no longer licensed by the CNSC and is therefore, pursuant to Section 26 of the NSCA, not authorized to carry out any CNSC-licensed activities.

Licensees are reminded that the use, possession, transfer, import, export and servicing of nuclear substances and radiation devices may only be carried out by persons who are licensed by the CNSC to carry out those activities.

For further information, please contact P. Fundarek, Director, Nuclear Substances and Radiation Devices Licensing Division, at 613-993-7715 or 1-888-229-2672 or at peter.fundarek@cnsccsn.gc.ca. 



Orders Issued

The *Nuclear Safety and Control Act* authorizes the Commission tribunal of the Canadian Nuclear Safety Commission (CNSC), its designated officers and inspectors to issue orders to CNSC licensees. They may order that a licensee 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.

Since January 2009, staff in the Directorate of Nuclear Substance Regulation (DNSR) have issued orders to four DNSR licensees:

- PricewaterhouseCoopers Inc.
- United Pacific Geotechnical Engineering Ltd.
- Trow Associates Inc.
- All Test International Inc. located in Alberta

In the case of PricewaterhouseCoopers Inc., the British Columbia Environment Minister declared on January 25, 2009, that an environmental emergency existed at a pulp and paper mill licensed to PricewaterhouseCoopers Inc. in Mackenzie, B.C. Shortly after, a CNSC Designated Officer concluded there was the potential for an unreasonable risk to the health and safety of persons, and to the security of nuclear substances and prescribed equipment.

The Designated Officer ordered PricewaterhouseCoopers Inc. to immediately carry out a number of activities to protect the health and safety of persons, and to ensure the security of nuclear substances and prescribed equipment. The order also required PricewaterhouseCoopers Inc. to transfer the nuclear substances and prescribed equipment in its possession at the mill to another person who was licensed by the CNSC to possess these items.

On April 22, 2009, a CNSC inspector was concerned about the potential risk to the health and safety of persons and issued an order to United Pacific Geotechnical Engineering Ltd. The company in Surrey, B.C. was ordered to immediately cease using a portable gauge or to transfer the gauge to a CNSC licensee authorized to possess this type of radiation device. The company was also required to place the device in secure storage until it could demonstrate it had made adequate provisions for the management's control over work practices and personnel qualification and training. The portable gauge was subsequently safely transferred to the care and custody of the manufacturer in Calgary, Alberta.

On April 30, 2009, a CNSC inspector discovered that All Test International Inc. possessed two unauthorized sealed sources. The inspector ordered the Brooks, Alberta,

company to transfer the two sources to an authorized CNSC licensee. The company complied.

On June 18, 2009, Trow Associates Inc. in Kamloops, B.C., was ordered by a CNSC inspector to immediately relocate its stored portable nuclear gauges to another secured location in the same building. The gauges had been found to be against a wall adjacent to the business next door, presenting a potentially unsafe condition to these tenants. During a follow-up visit the next day, the company had complied with the order and moved the gauges away from the wall. The cabinet containing the gauges had been moved across the shop floor to an external wall, where it no longer presented a danger to other building occupants.

Trow also committed to voluntarily shut down gauge operations until workers operating the portable gauges had received sufficient training on how to transport the gauges, which are classified as dangerous goods. On June 22, 2009, the licensee showed two portable gauge operators had received appropriate Transportation of Dangerous Goods training. The CNSC then authorized Trow to allow the two newly trained workers to return to work with the portable gauges. ☺

Radioactive Materials Found in Waste Recycling

The CNSC regulates the possession and use of nuclear substances in Canada. It applies regulatory requirements through licensing and by verifying and enforcing compliance with these requirements. Devices containing very small quantities of nuclear substances — for example, smoke detectors — are exempted from CNSC licensing. The possession of residential smoke detectors does not require a licence, but the design, manufacture and distribution of smoke detectors are subject to CNSC regulatory requirements, including licensing. Other exempted material includes naturally occurring nuclear substances (NONS) that are not associated with the production or use of nuclear energy. Although these materials may be exempt from licensing requirements, they are not exempt from transport, import or export regulations.

There are currently an estimated 30,000 radioactive sealed sources under the CNSC's regulatory control in Canada. Industrial devices containing radioactive sources may fall out of regulatory control through theft, loss during transport, and inadvertent or intentional abandonment. When out of regulatory control, the devices may enter the public domain with the potential to expose the public to harmful radiation. On average, one of these materials of such a type is discovered every year and reported to the



CNSC. These substances also sometimes inadvertently end up in waste recycling facilities, where they set off portal monitor alarms as they enter the facilities.

The CNSC has a response program to control radiation sources that pose a risk for members of the public or industry workers. The CNSC responds to requests for assistance for unregulated material or NONS by providing advice for their safe handling and the return of these types of waste to the originator. Orphaned radioactive sources may also be traced back to their former owners.

Canadian recyclers process between 16 and 18 million tons of scrap metal each year. It is important that the metal be as free from radioactive contamination as possible. Canadian steel manufacturers and steel processing facilities have installed radiation detection equipment to monitor incoming material, because of the threat of inadvertent radioactive materials entering their facilities. Many waste site operators have also installed vehicle radiation detection monitors to screen waste before committing it to landfills or before compacting it for transport to landfills. The CNSC's regulations do not require waste or scrap metal site operators to install vehicle radiation monitors.

CNSC experience shows that at waste sites, most alarms are caused by low-level medical waste containing residual radioactivity from patients that have undergone diagnostic and therapeutic procedures. Almost all of this low-level medical waste has a short radioactive half-life and may be safely disposed of to decay. At scrap metal recycling facilities, most alarms are triggered by NONS. Old radium dials cause occasional alarms at both types of facilities.

The CNSC is examining options to improve awareness of the likelihood that nuclear substances may be found in waste and metal recycling processes. It is also working to improve how the detection and recovery of orphan sources are reported, such that they do not pose a risk to health, safety, security and the environment.

In the case of an actual nuclear emergency, the CNSC Duty Officer must be contacted at 613-995-0479. ☎

Signage Requirements for Licensees

Federal legislation is relevant to every Canadian. For CNSC licensees, it is essential to comply with the *Nuclear Safety and Control Act* (NSCA), its regulations, and their licences. Regulations are often amended to keep up with changes in the nuclear industry, to clarify misinterpretations or to correct weaknesses.

The *Nuclear Substances and Radiation Devices Regulations* were revised in 2008. One of the amendments, to Section 23, clarified CNSC expectations related to posting warning signs around radiation areas. Although the above section goes into more detail, the amendment requires licensees — including industrial radiographers — to post durable and legible radiation warning signs in a visible location to indicate that nuclear substances are being used or stored. These signs must also indicate the name or job title and the telephone number of the person who can initiate any required emergency procedure and who can be contacted 24 hours a day.

The CNSC expects that:

- emergency contact information will be available to non-licensees or the public without having to enter the radiation area
- the information on emergency contacts will be available at all points of access to the area, room or enclosure where the nuclear substance is used or stored
- the required emergency contact information will be up to date and remain legible

Radiation warning signs with information that is faded, peeling off or otherwise illegible will not meet regulatory requirements. ☎

Tracking and Registering Sealed Sources

The CNSC is implementing a program to register all sealed radioactive sources and radiation devices in Canada.

In 2005, in response to a commitment to apply the International Atomic Energy Agency (IAEA) *Code of Conduct on the Safety and Security of Radioactive Sources* in Canada, the CNSC created a Sealed Source Tracking System (SSTS) and a National Sealed Source Registry (NSSR).

The SSTS was developed to track the location of all *Category 1 and 2 sealed sources in Canada* (high-risk), while the NSSR was created to register all sealed sources in Canada (*Categories 1, 2, 3, 4 and 5*). There are currently approximately 30,000 radioactive sealed sources of all categories in Canada.

Information on sources in Categories 1 and 2 is complete. The CNSC's Directorate of Nuclear Substance Regulation is now populating the NSSR with sealed source inventory information on sources in Categories 3, 4 and 5, via



licensees' Annual Compliance Reports (ACRs) submitted to the CNSC.

In their ACRs, licensees are required to submit detailed and accurate information about their inventories according to the format described in section 8 of the report. As a guide, the following table shows the type of data required for sealed sources and radiation devices. Information submitted in this format greatly facilitates the transfer of data in the N SSR.

Notes

- Serial numbers can be found in the documentation provided by the device or the sealed source manufacturer.
- If the serial number for the sealed source is not known, a licensee is expected to assign a unique identifier to that source so it can be readily identified.
- The "Reference Date" field in the table refers to the date that the activity of the sealed source was measured or calibrated when it was installed in the device.

Examples of Inventory Information

Device			Sealed Source or Sealed Source Assembly						
Manufacturer	Model	Serial Number	Manufacturer	Model	Serial Number	Nuclear Substance	Nominal Activity Bq	Reference Date (mm-dd-yyyy)	Authorized Location
Troxler	3430	24877			75-7013	Cs137	300 MBq	03-07-1995	2
Troxler	3430	24877			42-21066	Am-241/Be	1480 MBq	01-17-1995	2
TN Technologies	5204	B415	QSA - Amersham		GK-7628	Cs-137	148 GBq		1
IDC	FT-50	110126			2844	Am-241	3.7 GBq	03-05-1979	1
Niton	XLP703A	204442	IPL	XFB-3	TR0148	Cd-109	1480 MBq	09-01-2008	1
Ronan	SA-1	1729GK			1729GK	Cs-137	185 MBq	01-26-2006	1
			Isotope Products Labs	NES8430	1253-181	Co-57	555 MBq	10-01-2007	1
Filtec	FT-50	113795	Amersham	06110	2157	Am-241	3.7 GBq	03-09-1977	1

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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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Canadian Nuclear Safety Commission
P.O. Box 1046, Station B
Ottawa, Ontario K1P 5S9
Telephone: 1-800-668-5284 (in Canada)
or 613-995-5894 (outside Canada)
Fax: 613-995-5086
Email: info@cnsccsn.gc.ca
Web site: nuclearsafety.gc.ca