



DNSR Newsletter

International Review Looks at the Canadian Nuclear Safety Commission

Being an effective regulator requires a commitment to continuous improvement. With this in mind, the CNSC underwent a peer review by the Integrated Regulatory Review Service (IRRS) in June 2009. An IRRS review is an examination offered by the International Atomic Energy Agency (IAEA) to member states. It is a unique opportunity for international benchmarking through an assessment by experienced regulators from several different countries. The mission provided many learning opportunities and exchanges of ideas that benefited the CNSC and peer reviewers, as well as the IAEA and its member states.

Based on [IRRS observations and recommendations in 2009](#), the CNSC developed an action plan for improved performance. An IRRS team of ten nuclear and radiation safety experts then returned to Canada for a two-week period in late 2011, to

- evaluate the CNSC's implementation of the action plan developed following the 2009 IRRS peer review report
- assess Canadian regulatory practices related to the packaging and transport of nuclear substances
- assess the Canadian regulatory response to events at Japan's Fukushima Daiichi Nuclear Power Station in the spring of 2011

During this latest IRRS mission, peer reviewers visited locations to observe CNSC inspections on the packaging and transport of nuclear substances.

At the close of the 2011 mission to Canada, the CNSC received international confirmation and recognition that it is doing an effective job. In a presentation to the CNSC, the IRRS Peer Review Team concluded that

- thirty of the 32 commitments made in 2009 have been effectively addressed by the CNSC and are considered closed
 - progress has been made on the remaining

two commitments, namely an update to a 1998 memorandum of understanding with Health Canada, and the establishment of periodic safety reviews for Class I and Class II nuclear facilities; however, all the necessary actions need to be completed before they are considered closed

With respect to the review of the transportation module against IAEA standards, the Review Team concluded that

- the regulatory framework for the transport of radioactive materials is well established, commensurate with the large scope and volume of transport activities in Canada
- procedures and criteria used for the special arrangement shipment of steam generators from Canada to Sweden are in compliance with the IAEA's TS-R-1 *Regulations for the Safe Transport of Radioactive Material*

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- the key area for improvement is the adoption into Canadian regulations of the IAEA 2009 *Regulations for the Safe Transport of Radioactive Material*

As for the CNSC's response to the Fukushima incident, the Review Team commended the CNSC on its immediate

actions following the accident and noted that regulatory actions were proper, prompt, robust and comprehensive.

The [IRRS Peer Review Team's final report](#) is posted on the CNSC Web site, along with the CNSC management's response. 

CNSC Inspectors Verify Compliance

The CNSC regulates the use of nuclear energy and materials to protect the health, safety and security of people and the environment; and implements Canada's international commitments on the peaceful use of nuclear energy.

Nuclear substances and prescribed equipment licensed by the CNSC are used in a wide range of applications. These substances are used day-to-day in areas that include civil engineering, industrial radiography, oil well logging and industrial processes, as well as in teaching, medical and research facilities. Over 2,600 licences fall under the CNSC's oversight.



To verify compliance with the regulatory requirements, the CNSC routinely inspects licensee programs and operations based on requirements in several safety and control areas. The CNSC examines the level of risk of each licensee, to decide upon the level of compliance verification. Inspections are more frequent for licensed activities that present greater risk.

Staff from the Directorate of Nuclear Substance Regulation (DNSR) verify licensee compliance with two types of inspections. A Type I inspection, also known as an audit, consists of a planned, in-depth and on-site review of specific licensee programs. Several CNSC staff members may participate and be on site for several days. This type of inspection includes interviews with licensee staff,

observations of work activities, and comprehensive reviews of procedures and records.

A Type II inspection is an on-site snapshot of a licensee's operations. At the closure of these inspections, any findings are discussed with the licensee and a preliminary written inspection report is left with the licensee. A final report is sent to the licensee later.

DNSR inspectors complete about 1,500 inspections each year, all following an open and transparent process. When potentially unsafe situations are observed during inspections, the inspectors may take immediate action, such as issuing an order, to bring the licensee or operators back under regulatory control. 

Correct Signatures Required

As reported in the last *DNSR Newsletter*, the CNSC has published a new licence application guide and form. RD/GD-371, *Licence Application Guide for Nuclear Substances and Radiation Devices Licences* benefits all stakeholders in the licensing process. With the development of this licence application guide and form, the process is simplified and clarified, thereby facilitating the submission of complete licence applications to the CNSC.

Applicants will encounter processing delays if the person who signs sections C.2 and E.6.1 of the [RD/GD-371 form](#) is not the Applicant Authority, as required by these sections. These sections are often signed incorrectly by the radiation safety officer, requiring the resubmission of sections C.2 and E.6.1 with the Applicant Authority's signature.

To avoid delays in the processing of licence applications for nuclear substances and radiation devices (NSRD), please ensure the forms are submitted with all the appropriate signatures. It should also be noted that the form in RD/GD-371 is the only application form for NSRD licences that the CNSC will accept. 



Award for CNSC Compliance and Enforcement Activities

The Community of Federal Regulators (CFR) recently presented several CNSC employees with the Regulatory Excellence Award for Exceptional Performance in Compliance and Enforcement.

The CNSC's response in early 2011 to an incident involving the cargo ship MCP Altona garnered attention from the Awards Task Group of the Community of Federal Regulators. In this incident, a shipment of natural uranium concentrate, also known as "yellowcake," encountered extremely rough seas in the Pacific Ocean while on its way to China. As a result, some of the steel drums containing the yellowcake that were inside sea containers located in one of the cargo holds, broke open – spilling yellowcake in the cargo hold.

From the start, the CNSC response team faced an exceptional situation: a transport incident on a marine vessel at sea. The range of challenges facing the CNSC team became immediately apparent when, in order to perform their initial assessment of the situation, inspectors had to use a tugboat to board the MCP Altona, which was initially at anchor about two nautical miles southeast of Victoria, British Columbia.

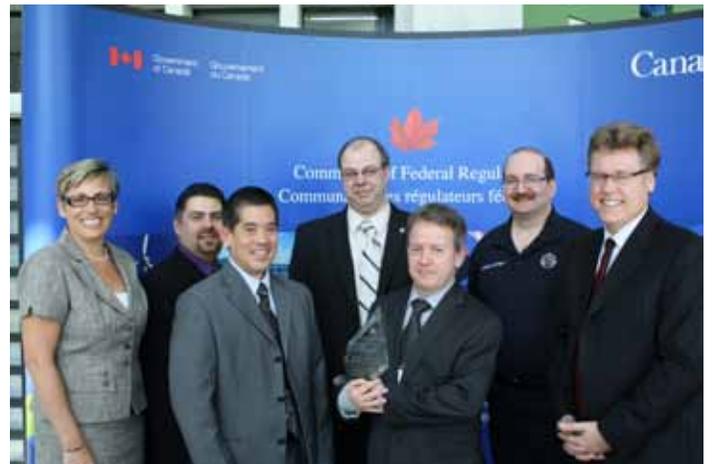
The vessel eventually docked at the Port of Vancouver, and CNSC inspectors from the Operations Inspection Division and Transport Licensing and Strategic Support Division were onsite at all times to ensure the cleanup plan was executed safely by the licensee who owned the yellowcake. Hours of work were at times gruelling and CNSC inspectors worked upwards of 16-hour days, 7 days a week. They were assisted off-site by CNSC staff with a wide range of expertise and knowledge, including employees from the Uranium Mines and Mills Division, Radiation Protection Division, and the invaluable resources of the new CNSC laboratory.

As part of their duties, CNSC inspectors verified radiation monitoring results and conducted their own measurements, including over 500 surface contamination wipes taken on the vessel, workers' equipment and clothing, and transport packages, before releasing the vessel. The information was reported daily to CNSC management in Ottawa, CNSC specialists and other off-site staff who were part of the CNSC team. CNSC inspectors also liaised with other regulatory bodies and local agencies such as Transport Canada's Marine Safety

and Dangerous Goods directorates, WorkSafeBC, the Vancouver Port Authority, and Vancouver HAZMAT.

Throughout the remediation, the team overcame challenges related to regulating activities at a site outside of a nuclear facility and in a unique marine environment, while ensuring the safe handling and transport of uranium yellowcake. Additional pressures came from the incident's high profile, the tight timeline to clean up the vessel, and the legal aspects associated with the possibility of insurance claims from various parties involved in the clean-up.

Through onsite leadership, dedication and commitment to various tasks, the response team was able to demonstrate that the event aboard the MCP Altona presented no risk to the health and safety of persons or the environment. The Regulatory Excellence Award for Exceptional Performance in Compliance and Enforcement was presented to the CNSC on March 20, 2012. 



Present for the Community of Federal Regulators' awards ceremony were, from left to right, Lucie Desforges, CFR Executive Director; Martin Thériault, Transport Officer, CNSC Transport Licensing and Strategic Support Division; Larry Wong, Senior Laboratory Technician, CNSC Environmental Compliance and Laboratory Services Division; Sylvain Faille, Director, CNSC Transport Licensing and Strategic Support Division; John McManus, Radiation Protection Specialist, CNSC Radiation Protection Division; William Stewart, Senior Project Officer, CNSC Uranium Mines and Mills Division; and Michael Presley, Assistant Deputy Minister Co-Champion of the CFR.



Consultation on Financial Guarantees

In November 2011, staff from the Nuclear Substances and Radiation Devices Licensing Division and the Accounting Systems and Controls Division completed a comprehensive, unprecedented outreach program to consult with more than 1,000 CNSC licensees and other stakeholders across Canada. The consultation centered on the proposed program for implementing financial guarantees for Class II nuclear facility operators and users of nuclear substances and prescribed equipment, as outlined in the CNSC's *Discussion Paper Regarding the Implementation of Financial Guarantees for Licensees* (DIS-11-01).

The discussion paper was posted on the CNSC Web site on March 3, 2010, and the comment period ran until November 30, 2011. The CNSC received 87 separate written submissions from licensees representing medical facilities, universities, and industrial users of nuclear substances and prescribed equipment. A [compilation of all written comments](#) received by the deadline is posted on the CNSC Web site.

Consultation sessions began in September 2011, and concluded in November 2011. The schedule for the outreach sessions was posted on the CNSC Web site and notifications of the sessions were sent in specific emails to each affected licensee. In addition, letters were sent to 1,700 affected licensees to ensure they were aware of this

outreach program. A copy of the [CNSC staff presentation](#) is posted on the CNSC Web site.

This outreach effort was unprecedented at the CNSC due to its scope, locations and the number of presentations. More specifically, CNSC staff held outreach sessions in Victoria, Vancouver, Calgary, Edmonton, Fort McMurray, Regina, Saskatoon, Winnipeg, London, Hamilton, Mississauga, Toronto, Ottawa, Montreal, Quebec City, Halifax, Fredericton, Moncton, and St. John's. The number of attendees per session ranged from 2 to 40 people. For those who could not attend any of the sessions, two webinars were delivered in both official languages, one in September 2011, and the other in November 2011.

In response to the concerns raised, the CNSC is reviewing its proposed approach to implementing financial guarantees for Class II nuclear facilities and nuclear substances and radiation devices licensees. In doing so, the CNSC will consider modifications of or alternatives to the approach proposed in DIS-11-01; any changes would still respect the need to ensure that Canadian taxpayers would not be burdened with the costs associated with a licensee's inability to safely terminate their licensed activities, decommission their facility or dispose of their nuclear substances and devices.

Stakeholders are encouraged to monitor the CNSC Web site for developments on this matter. 

Radiation Protection Guide Published

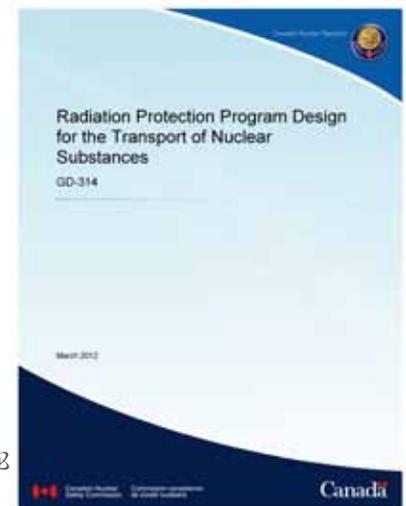
The CNSC has published GD-314, *Radiation Protection Program Design for the Transport of Nuclear Substances*.

GD-314 provides guidance for the implementation of a radiation protection program to transport nuclear substances, in accordance with the *Nuclear Safety and Control Act* and regulations made under the NSCA.

Some carriers, and most consignors and consignees, are licensed by the CNSC and are covered by radiation protection programs implemented through the CNSC's licensing process. While most carriers do not require a licence from the CNSC, they remain subject to the requirement for a radiation protection program pursuant to the *Packaging and Transport of Nuclear Substances*

Regulations. This document is intended to assist carriers that are regulated but not licensed by the CNSC.

To request paper copies of GD-314, *Radiation Protection Program Design for the Transport of Nuclear Substances*, in either official language, contact info@cnsccsn.gc.ca. 





New Policy on Low-Energy Accelerators

Following a recent review of the *Class II Nuclear Facilities and Prescribed Equipment Regulations* and the regulatory oversight of accelerators in Canada, the CNSC is changing its policy concerning the regulation of particle accelerators.

The CNSC will now begin to exercise its regulatory authority with respect to all particle accelerators operating at a beam energy of 1 mega electron volt (MeV) or greater. Particle accelerator facilities operating above 1 MeV are expected to be compliant with the CNSC's regulatory requirements by December 31, 2013.

Accelerators operating at or above 1.5 MeV beam energy are capable of producing nuclear energy and therefore subject to the *Nuclear Safety and Control Act* (NSCA) and its regulations. Accordingly, facilities where these accelerators are used must meet the requirements of the NSCA and the applicable regulations, and must operate under an appropriate Class I or Class II nuclear facility licence. Furthermore, in accordance with section 10 of the *Class II Nuclear Facilities and Prescribed Equipment Regulations*, particle accelerators that meet the definition of Class II prescribed equipment must be certified by the CNSC. For ease of application, the CNSC will use 1 MeV, rather than 1.5 MeV as the cut-off beam energy.

The CNSC currently licenses and inspects particle accelerators capable of operating at or above 10 MeV. The decision to include low-energy particle accelerators (i.e., those operating at or above 1 MeV) will ensure adequate, uniform and consistent regulatory oversight for all Class II accelerators. To ensure the safety of the public and workers, CNSC staff will take regulatory action where necessary to address immediate safety concerns at facilities with accelerators at or above 1 MeV.

The CNSC will be posting additional documentation on its Web site with detailed information to further explain this change to its regulatory oversight regarding low-energy accelerators, including details on the implementation plan. The information will also provide details on the regulatory requirements for this equipment and guidance on how to comply.

Any organization currently operating one or more accelerators at or above 1 MeV, which are not currently under a CNSC licence, is required to contact the

CNSC at this email address: Electronaccelerator-Accelerateurdelectron@cnsccsn.gc.ca. Questions or concerns may also be sent to this email address. Alternatively, Ms. Kavita Murthy, Director of the Accelerators and Class II Facilities Division, may be contacted for information by regular mail at the following address, or by telephone at 613-993-7853.

Canadian Nuclear Safety Commission
Attn: Kavita Murthy
Accelerators and Class II Facilities Division
PO Box 1046, Station B
Ottawa, ON, K1P 5S9
Fax: 613-995-5086

Industrial Radiography Working Group Update

The Industrial Radiography Working Group is made up of members from the Canadian radiography industry and the CNSC. The group meets regularly to discuss safety and performance issues related to industrial radiography.

Following recent announcements to step down by François Rodier, of Labcan Ltée., and Joel Kish, of Inspectrum Testing Inc., the working group would like to thank these individuals for their contributions in establishing the group in 2009 and for their participation in the group's activities to improve industrial radiography safety.

The group is pleased to announce that two new members have joined the Industrial Radiography Working Group. Doug Hanna, from SGS Canada Inc., in Montreal, and Patricia MacNeil from A-Tech N.D.T. Limited, in Whitecourt, Alberta, bring their considerable knowledge and experience to the table.

The CNSC held annual meetings of the working group this spring. The first was in Nisku, Alberta, on May 9, 2012, and the second in Ottawa, Ontario, on May 23, 2012. Building on last year's successful meetings, safety and performance topics related to industrial radiography were on the agenda. An update was also provided on progress to date in replacing the CNSC Guidance Document G-229, *Certification of Exposure Device Operators*, with a standard being developed by the Canadian Standards Association.



Orders

These regulatory actions were taken by the CNSC between October 1, 2011, and March 26, 2012.

On October 5, 2011, the CNSC issued an order to **Stasuk Testing and Inspection Ltd.** of Burnaby, British Columbia. The company provides non-destructive testing services to various industries and holds a CNSC licence to possess nuclear substances contained in industrial radiography exposure devices for the purpose of materials testing.

The order was issued following a CNSC inspection that revealed the company was in possession of an X-ray fluorescence analyzer, a radiation device that the company was not authorized to possess. The order required the company to put the device in storage, and either dispose of the device through an authorized CNSC licensee or immediately take measures to obtain a valid CNSC licence.

The storage of the device did not pose any immediate risk to the health and safety of workers, the public or the environment. On December 20, 2011, the CNSC confirmed that Stasuk Testing and Inspection Ltd. had complied with all the terms and conditions of the order.

On October 21, 2011, the CNSC issued another order to **Stasuk Testing and Inspection Ltd.** This order was issued following a CNSC inspection that revealed an inadequate level of access control to a particle accelerator area, and high radiation levels outside the external doors of the accelerator area. The order required the company to immediately limit the usage of the accelerator and take measures to restrict access to the facility when the accelerator is in operation.

On November 29, 2011, the CNSC confirmed that Stasuk Testing and Inspection Ltd. had complied with all the terms and conditions of this order.

On October 19, 2011, the CNSC issued an order to **Recon Petrotechnologies Ltd.**, a company based in Calgary, Alberta, that provides oil well logging services to the oil and gas industry in Western Canada.

The order was issued following a CNSC inspection conducted at the company's location in Lloydminster, Alberta, that revealed that the company's radiation survey meters in use at this location had not been calibrated in accordance with CNSC requirements. The order prohibited

the company from using all nuclear sources until their survey meters were calibrated and made available for operations in accordance with CNSC requirements.

On October 28, 2011, the CNSC confirmed that Recon Petrotechnologies Ltd. had complied with all the terms and conditions of the order.

On December 6, 2011, the CNSC issued an order to **Mistras Canada Inc.**, a company based in Olds, Alberta, that provides non-destructive testing and inspection for the oil and gas industry in Western Canada.

The order required the company to remove a certified exposure device operator (CEDO) from supervisory duties. Mistras Canada Inc. had to ensure that the CEDO in question would not supervise trainees until the company could demonstrate, to the satisfaction of the CNSC, that the operator would follow CNSC requirements in supervising trainees.

The order was issued during the course of an unannounced inspection where the CNSC inspector observed an exposure device operator trainee performing radiography without direct supervision of the CEDO. The trainee's unsupervised actions did not pose an immediate risk to the health and safety of persons or the environment.

On December 19, 2011, the CNSC provided Mistras Canada Inc. with an opportunity to be heard and on January 11, 2012, based on information presented by Mistras, the Designated Officer amended the order to require the licensee to perform the following measures:

- Mistras Canada Inc. shall prohibit the CEDO from supervising any exposure device operator trainee until such time as Mistras Canada Inc. provides evidence satisfactory to the Director of the CNSC's Operations Inspection Division that the CEDO understands his duties and responsibilities as a Certified Exposure Device Operator when acting as a supervisor of an exposure device trainee pursuant to the *Nuclear Substances and Radiation Devices Regulations*.

This amended order was still in effect at the time of publication of this newsletter.

On January 12, 2012, the CNSC issued an order to **Western Inspection Ltd.**, located in Surrey, British Columbia, which provides non-destructive testing services to various industries.

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Orders... *continued from p.6*

The order was issued following CNSC inspections that revealed that the company did not have adequate measures in place to protect workers against radiation exposure. The order required Western Inspection Ltd. to immediately cease the usage of exposure devices at its Surrey location until it could demonstrate that it had implemented adequate procedures to control radiation exposure, to protect the health and safety of workers, the public and the environment.

On February 17, 2012, the CNSC confirmed that Western Inspection Ltd. had complied with all the terms and conditions of the order.

On January 19, 2012, the CNSC issued an order to **Mr. Dylan Fermaniuk**, a CEDO employed by Echo NDE Inc., an industrial radiography company based in Red Deer, Alberta.

The order was issued during the course of a CNSC inspection where the inspector observed an exposure device operator trainee performing radiography work without the direct supervision of the CEDO, Mr. Fermaniuk.

Mr. Fermaniuk was prohibited from supervising any trainee in the operation of an exposure device until Echo NDE Inc. provided evidence satisfactory to the CNSC that he understands his duties and responsibilities as a CEDO when acting as a trainee supervisor.

This did not prohibit Mr. Fermaniuk, in his capacity as a CEDO, from operating an exposure device that uses nuclear substances.

On April 17, 2012, the CNSC confirmed that Mr. Fermaniuk has complied with all the terms and conditions of the order issued to him. Corrective measures implemented by Mr. Fermaniuk were reviewed and found to be satisfactory by CNSC staff and he is authorized to return to supervisory responsibilities.

On March 26, 2012, the CNSC issued an order to **Ernst & Young Inc.**

In December 2011, Ernst & Young Inc. became the court-appointed receiver of St. Marys Paper, a pulp and paper manufacturer located in Sault Ste. Marie, Ontario. St. Marys Paper holds a CNSC licence to possess, use, store, transfer and import nuclear substances and prescribed equipment.

Ernst & Young Inc. is currently in the process of selling ownership of St. Marys. The order was issued by Designated Officer following receipt of information indicating that terms of the purchase would not ensure the presence of sufficient qualified personnel at the site. The order required Ernst & Young Inc. to immediately conduct an inventory of all nuclear substances and radiation devices at the site, and arrange for the transfer of the substances and devices to another person licensed by the CNSC.

Ernst & Young Inc. has since complied with the order. 

Two Guidance Documents Published

The CNSC recently published two guidance documents:

- RD/GD-289, *Licence Application Guide – Class II Isotope Production Accelerators*
- RD/GD-352, *Design, Testing and Performance of Exposure Devices*

RD/GD-289 explains how to complete and submit an application for a Class II isotope production accelerator licence in accordance with the *Nuclear Safety and Control Act* (NSCA) and its regulations. While this guide and its [related application form](#) have been in use for many years, they were updated and finalized to reflect current requirements and practices.

RD/GD-352 provides guidance in the design, testing and performance of exposure devices, in order to apply for the certification of the radiation device under section 12 of the *Nuclear Substances and Radiation Devices Regulations*. Persons applying for certification of such devices must thoroughly demonstrate that the exposure device and related accessories are designed to operate in a safe manner.

Before issuing a licence or certificate, the CNSC reviews applications to ensure the applicant is qualified, has made adequate provisions to protect the environment and the health and safety of persons, and otherwise meets the requirements of the provisions of the NSCA and its regulations.

Paper copies of these documents in either official language are available upon request from info@cnsccsn.gc.ca. 



Contaminated Sea Containers Enter Canadian Ports

The CNSC regulates the transport of nuclear substances in accordance with the *Packaging and Transport of Nuclear Substances Regulations* and the *Transport of Dangerous Goods Regulations*, in cooperation with Transport Canada.



The Canada Border Services Agency performs the initial verification of containers and merchandise.

Since October 2011, 18 sea containers carrying goods originating from China have been intercepted by the Canada Border Services Agency (CBSA) at various British Columbia ports as a result of the containers triggering the CBSA's radiation portal monitoring systems. The goods consisted of a variety of metallic components contaminated by cobalt 60, which is commonly used in radiation therapy instruments, irradiation and other industrial applications. The radiation contamination may have been caused by a sealed source containing cobalt 60, which was accidentally melted with large quantities of recycled metals abroad and used in the manufacturing of consumer products.

None of the contaminated products were allowed entry into Canada. At no time was there a risk to the health, safety and security of the Canadian public or the environment, and all of the containers have been returned to their point of origin. In all cases where sea containers trigger alarms at

Canadian ports, the CBSA immediately notifies the CNSC. The CBSA performs the initial verification of the containers and merchandise and contacts the CNSC for assistance as per established protocols.

Contact the CNSC at 1-888-229-2672 or at info@cnsccsn.gc.ca for further information on the packaging and transport of nuclear substances.

Information on Source Assemblies

CNSC-issued design certificates list specific model numbers and manufacturers for each radiation device and accessory.

Some exposure device users have recently had difficulty obtaining certain types of source assemblies. As a result, some have asked the CNSC to clarify its requirements for using a QSA Global source assembly with Agiris remote control equipment. This configuration is not currently authorized by the CNSC.

This would be permitted if the following conditions are met:

- An application for certification is submitted to and approved by the CNSC.
- The control cable male connector is the same brand as the source assembly.
- A person authorized by the CNSC has installed the male connector in accordance with CNSC-approved procedures. A person holding a CNSC servicing licence must carry out this type of servicing work.

For further information on these exposure devices, source assemblies and remote controls, contact info@cnsccsn.gc.ca.

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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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