Spring 2015

DNSR Newsletter

Canada's Nuclear Regulator

Update on the New Financial Guarantee Program

In March 2011, the Canadian Nuclear Safety Commission (CNSC) published discussion paper DIS-11-01, *Implementation of Financial Guarantees for Licensees*, on its external website. After extensive and unprecedented outreach by CNSC staff, the comment period for this document closed on November 30, 2011.

The purpose of financial guarantees is to ensure that funds are available for the safe termination of licensed activities. From the outreach sessions and the comments received, it was clear that licensees understood the regulatory obligations and responsibilities. However, it was also clear that the model, as presented in the discussion paper, was not supported by industry. Licensees felt that the model was flawed, the costs associated with such a program would be excessive and that past occurrences did not justify the need for such a program.

Among the comments received through outreach and formal feedback were suggestions on how the CNSC could meet its aim of ensuring that the funds would be available without having a significant financial impact on licensees. A common comment was that the CNSC should look at an insurance model.

Starting in 2012, CNSC staff began examining different financial instruments, including insurance, which would meet the needs of the CNSC yet not have an overriding negative impact on business. As a result of this examination, the insurance model was identified as the best option for the CNSC and licensees.

Under this option, the CNSC would be the policy holder and the sole beneficiary in situations where the licensee would be unable to fund the safe termination of licensed activity.

In the new financial guarantee program, the CNSC would purchase insurance for the estimated liability from licensees, which is based on the discussion paper. The premium for this insurance would be calculated as 0.4437 percent (0.004437) of the assessed liability. The licensee would provide a financial contribution to the CNSC in proportion to their liability with a minimum cost of $25. Small sealed sources, open sources or devices containing less than 50 MBq of a nuclear

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substance, or labs or rooms that use no nuclear substances other than those with a half life of less than three days would not factor in the calculation. In addition to costs identified in the discussion paper, CNSC staff have identified devices such as self-shielded irradiators or teletherapy heads that have an estimated liability of $90,000 per item due to the higher disposal costs of these devices.

Licensees who are backed by some level of federal, provincial or municipal government would meet the financial guarantee requirements in a different way. The applicant authority of public licensees would be required to acknowledge their liability and affirm that funds would be available to safely terminate the licensed activity.

At the August 2014 Commission Meeting, CNSC staff presented the revised financial guarantee program and received direction from the Commission to implement it. As part of this process, a notice of hearing was issued to licensees, giving them an opportunity to be heard by way of written submission. These submissions were considered by the Commission in making the decision to approve the program and amend all licences as requested. All licences issued by the Nuclear Substances and Radiation Devices Licensing Division and the Accelerators and Class II Facilities Division have been amended, under section 25 of the *Nuclear Safety and Control Act*, to include a licence condition requiring that a licensee maintain, as of April 1, 2015, a financial guarantee sufficient for the activities licensed. A communication has been sent, directing licensees to a website where their financial guarantee contribution can be paid.

Further details on the financial guarantee program are available on the CNSC website.

CNSC Invites Comments on Discussion Paper DIS-14-02, *Modernizing the CNSC's Regulations*

The CNSC is asking the public to provide their comments on discussion paper DIS-14-02, *Modernizing the CNSC's Regulations*.

In keeping with best practices for regulators, the CNSC has initiated a review of its body of regulations to verify that they continue to be clear, effective, and structured as efficiently as possible. This document seeks early stakeholder input that the CNSC will consider and that will help inform how the project progresses.

To review and comment on the document, visit the DIS-14-02 Web page.

Discussion paper DIS-14-02 is open for consultation until May 29, 2015. Comments submitted, including names and affiliations, will be made public.

First Meeting of New Working Group

The first meeting of the CNSC Nuclear Substances and Radiation Devices Licensing Division and the Canadian Radiation Protection Association Working Group (CRPA) was held in Winnipeg, Manitoba, on September 9, 2014. The aim of this working group is to further develop the working relationship and communication between the CNSC and members of the CRPA.

Membership in this working group currently consists of three members from the CNSC Nuclear Substances and Radiation Devices Licensing Division (including the Director) and three members from CRPA. The first meeting was focused on the development of the terms of reference of the group as well as on the expectations of each participant. The proposed mission of the working group is "to be a forum on implementing solutions and resolving issues in order to promote a strong radiation safety culture while respecting and understanding the interests and expectations of stakeholders."

The proposed objectives of the working group will aid in fulfilling the mandate to:

1. improve the radiation safety culture
2. improve communication on key issues and deficiencies
3. initiate change
4. maintain open communication
5. demonstrate cooperation
6. contribute to a safer work environment
7. provide input into regulatory expectations
8. discuss implementation of best practices
9. review effectiveness of regulatory communication
10. reach out to licensees across Canada
11. discuss some proposed regulatory changes

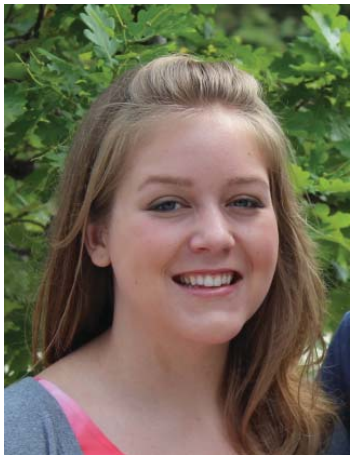
It was proposed that the working group meet twice a year, with the next meeting being held in the spring of 2015, likely in Winnipeg, Manitoba.

Welcoming Lindsay Pozihun to the Operations Inspection Division

In fall 2014, the Directorate of Nuclear Substance Regulation's (DNSR) Operations Inspection Division welcomed a new staff member to its Western Regional Office in Calgary, Alberta, after an extensive recruitment campaign across Canada. Lindsay Pozihun, currently an inspector-in-training, will be completing the CNSC Inspector Training and Qualification Program as she works towards receiving her designation as an inspector, pursuant to the *Nuclear Safety and Control Act*.

Lindsay told the *DNSR Newsletter* a little about herself:

"Originally from Thunder Bay, Ontario, I'm a recent graduate of the Nuclear Medicine Technology program at Michener. I recently made the move to the Western Regional Office in September (2014) of this year. Having been introduced to the CNSC and its mandate through my schooling, I'm proud to begin my career as an inspector. My favourite part of the job so far is seeing how the nuclear industry is used to develop and improve new and existing technologies. The industrial application of nuclear sources and devices is quite new to me, but I'm eager to learn as I go along.



Lindsay Pozihun

"Outside of work, I like to spend my time outdoors. Camping, hiking, cycling and running are all things I enjoy, and I'm very excited to get to do all of them in the beautiful city of Calgary."

A Brief Look at the Operations Inspection Division

With over 2,500 nuclear substances and radiation devices licences issued by the CNSC Directorate of Nuclear Substance Regulation (DNSR), the job of verifying whether licensees are fulfilling their obligations under the *Nuclear Safety and Control Act*¸ its regulations and licence conditions is no small task.

To accomplish this, the Operations Inspection Division (OID) has staff members located in four offices (Ottawa, Mississauga, Laval and Calgary), the majority of whom are designated as inspectors pursuant to the *Nuclear Safety and Control Act*. These staff members' primary function is to inspect licensees who have been issued a nuclear substances and radiation devices licence, and to verify whether applicable regulatory requirements are being met.

By early December 2014, there were 14 OID inspectors located across Canada, with additional staff in training towards obtaining their inspector designation. On average, OID inspectors perform over 1,500 inspections per year. The conduct of an inspection requires the inspector, or a team of inspectors, to visit a licensee at their site to make performance-based observations and to conduct record reviews. In addition to inspecting licensee locations, CNSC inspectors may also inspect any other location where licensed activities may be conducted, such as metal fabrication shops, a hospital or construction sites.

While onsite, the primary role of an OID inspector is to objectively verify licensee compliance against applicable regulatory requirements. While inspectors can provide a licensee with some information during the inspection, such as clarification of regulatory requirements, the inspector will not provide professional advice or instruct a licensee on how to achieve compliance.

It is important that licensees provide reasonable assistance to inspectors during an inspection. This may include providing any information to the inspector about the licensed activities that is requested, ensuring unhindered access to the site, or arranging for an escort as required. Providing an inspector with this level of assistance helps ensure that the inspection is conducted effectively and in a timely fashion.

In addition to the regular inspections performed over the past years, OID has also been increasing the number of investigations in response to events reported by both licensees and members of the public. These investigations assist in providing the CNSC with assurance that corrective actions being implemented by licensees are effective, as well as gathering more specifics regarding the cause of the event.

For more information on the CNSC licensing and compliance program, consult the CNSC website.

New DNSR Email Account

The Directorate of Nuclear Substance Regulation will soon be using a dedicated email account to send timely information to licensees and other stakeholders, such as:

- Special announcements on upcoming Commission Meetings or items of interest
- Directorate of Nuclear Substance Regulation newsletters
- Annual compliance report due date reminders

Note that this account will not be used to solicit information. You may have to adjust your junk folder settings.

Keep an eye out for emails from:
CNSC.DNSR-Info-DRSN.CCSN@cnsc-ccsn.gc.ca

Successful Workshop on Portable Gauge Users

Since 2010, the CNSC has observed an increase in non-compliances in the portable gauge industry, with the majority of inspection orders issued to this industry sector.

As a result, the DNSR developed a plan to reach out to portable gauge licensees in order to promote a positive safety culture with the objectives of:

- improving the communication between the CNSC and portable gauge licensees
- improving licensee's compliance with regulatory requirements
- encouraging the safe use of portable gauges in the field

In June 2014, the CNSC piloted a workshop to a group of portable gauge licensees in Mississauga, Ontario. The workshop consisted in presentations delivered by CNSC staff followed by a questions and answers session as well as general discussions. The topics of the presentations specifically targeted the areas where the majority of non-compliances were observed in this industry, mainly:

- radiation protection and determination of doses to workers
- compliance expectations
- training requirements
- transport of nuclear substances
- event reporting and emergency response
- number of CNSC orders

The workshop was intended for radiation safety officers (RSOs) and operators of portable gauges. Positive feedback from this workshop was received from the participants; all felt that it was a perfect refresher for RSOs and that operators of portable gauges would also benefit from it. Based on the feedback received, the CNSC intends to organize similar workshops across Canada from February to June 2015. The CNSC will send invitations to licensees to register for those upcoming workshops.

Reported Events Presented to the Commission

The events described below were reported by CNSC staff at Commission public meetings in 2014.

Radiation Exposure of Workers at Cliffs Quebec Iron Mining Limited

At the March 2014 Commission meeting, CNSC staff reported to the Commission that in the same month, a group of workers at Cliffs Quebec Iron Mining Limited in Fermont, Quebec, received radiation doses above the public regulatory dose limit of 1 mSv. The event involved fixed gauges not being locked in the closed position, consequently resulting in workers unknowingly receiving radiation in excess of the public dose limit while working in proximity of the gauges.

Further information can be found in the March 2014 and August 2014 Commission meeting minutes.

Two disused brachytherapy sources found in a machine shop at the Cross Cancer Institute

At the May 2014 Commission meeting, CNSC staff reported to the Commission that in April 2014, two radioactive sealed sources (cesium-137) had been found in a machine shop of the Cross Cancer Institute, a branch of Alberta Health Services, in Edmonton, Alberta. Licensee investigation revealed that the sources had been removed from storage without authorization and left in an unauthorized location.

Further information can be found in the May 2014 and August 2014 Commission meeting minutes.

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Reported Events Presented to the Commission ...continued from p.5

Contamination of a Flexitron High Dose Rate (HDR) brachytherapy unit

At the May 2014 Commission meeting, CNSC staff reported to the Commission that in April 2014, a Flexitron High Dose Rate brachytherapy unit was found to have contamination during a routine source replacement.

Following this event, CNSC staff sent emergency notification to all licensees who operate similar equipment in Canada by e-mail as well as a regulatory notice to all licensees who use this equipment and other similar equipment also manufactured by Elekta. These notices informed licensees of the event and required them to perform contamination checks on their units, and if found discontinue use immediately and inform the CNSC. In May 2014, Elekta issued a notice to all their North American customers with the affected units to inform them of potential contamination problems with the units and provide them with instructions on how to deal with the problem if they encounter it.

As a direct consequence of the change in procedure and its application, a second contamination event was discovered in late May 2014 at another radiation therapy center in Canada. However, as contamination was detected before the source was to be installed in the machine, it did not cause contamination of the equipment. The defective source was repackaged and returned by the service engineer to the manufacturer Elekta.

Further information can be found in the May 2014 Commission meeting minutes.

Loss of 25 low-risk sealed sources at Sunnybrook

At the August 2014 Commission meeting, CNSC staff reported to the Commission that Sunnybrook health centre, in Toronto, Ontario, had transferred 25 low-risk sealed sources to locations not authorized by a CNSC licence, resulting in the loss of the sources. These unauthorized transfers indicated that Sunnybrook had failed to maintain management control over work practices, as required by the *Radiation Protection Regulations*, and had not taken all reasonable precautions to protect the environment, health and safety of persons, and to maintain security of nuclear substances, as required by the *General Nuclear Safety and Control Regulations*.

Further information can be found in the August 2014 Commission meeting minutes.

Shipping of contaminated packages by Isologic

At the November 2014 Commission meeting, CNSC staff reported to the Commission that in August 2014, Isologic Innovative Radiopharmaceuticals Ltd., in Montreal, Quebec, delivered a number of packages to various hospitals that were contaminated above the CNSC regulatory limit. Contaminated packages were delivered over three days, as a result of Isologic not following basic radiation protection and contamination control measures as well as procedures under their licence.

Further information can be found in the November 2014 and December 2014 Commission meeting minutes.

Use of Annual Compliance Reports Information by the CNSC

Every nuclear substance, radiation device and Class II prescribed equipment licence holder is required to submit an Annual Compliance Report (ACR) to the CNSC in accordance with their licence. In total, approximately 2,500 ACRs from about 1,700 licensees are received and reviewed by CNSC staff.

An ACR contains information related to the licensed activity for the previous 12 months of the licensee's operations and is one of the methods used by the CNSC to verify compliance with regulatory requirements. Some personal information is requested to be included in the ACR as part of the information submitted in support of the activities authorized under the licence and is protected under the *Privacy Act*. Licensees must provide accurate information to all questions and submit the report to the CNSC by the date specified in their licence. The information provided in the ACR is used by the CNSC to monitor the licensee's compliance with regulatory requirements. This is done by comparing the ACR information during desktop reviews and compliance inspections.

The CNSC sends a reminder to the licensee approximately three months before an ACR is due. Licensees who do not submit their ACRs will be in non-compliance with their licence, and may be subject to enforcement actions such as increased regulatory scrutiny and administrative monetary penalties.

Fillable PDFs

All ACRs are now available as fillable PDFs on the CNSC Web site. ACR forms are grouped by category and customized for the activity authorized by the licence. The licensed activity name and number (e.g. "industrial radiography (812)"), can be found on each licence. These forms may be updated from time-to-time, so please ensure that you always use the most current version available on the Web site.

Note that ACR-Online system is no longer available. The CNSC has decided to put on-hold further development of the ACR-Online system while it evaluates other options for conducting e-business. This will ensure that we make best use of our resources and bring licensees a solution that will be cost effective and practical.

CNSC reports

Some ACR information, for example the occupational doses to workers data, is used to establish data trends in the nuclear sectors regulated by DNSR and to communicate the risks associated with various licensed activities. This information is disseminated to the public through a nuclear substances annual report published by the CNSC, the *Nuclear Substances in Canada: A Safety Performance Report*.

Similarly, the CNSC produces the *National Sealed Source Registry and Sealed Source Tracking System Report*, an annual report on the implementation of the International Atomic Energy Agency's *Code of Conduct on the Safety and Security of Radioactive Sources*. This report is based on the information provided by the licensees via the Sealed Source Tracking System for categories 1 and 2 sealed sources and provides an overview of the CNSC's inventory management approach for categories 3, 4 and 5 sealed source information obtained via the ACRs.

CNSC Enforcement Actions

As part of its mandate to protect the health and safety of workers, the public and the environment, the CNSC uses a graduated approach to compliance as part of its regulatory oversight. When serious non-compliances are identified, the CNSC assesses the non-compliance and determines the appropriate enforcement action, based on the CNSC's graduated approach to enforcement. Such actions include orders, Administrative Monetary Penalties (AMPs) and requests under *General Nuclear Safety and Control Regulations* subsection 12(2). Orders are issued when there is an immediate unreasonable risk to health and safety while AMPs may be used for any violations of regulatory requirements. A 12(2) request consists of a letter issued by the CNSC or a person authorized by the Commission requesting certain information or directing the person to take a specific action, with a response required within a specified time. The following regulatory actions were taken by the CNSC between July 1 and January 31, 2015.

Order to Mistras Canada Inc.
On July 29, 2014, the CNSC announced that it had issued an order to Mistras Canada Inc., a company based in Olds, Alberta, providing testing services to the industrial sector. The company currently holds a CNSC licence authorizing the possession and use of nuclear substances contained in industrial radiography exposure devices, for the purpose of materials testing.

The order was issued on July 22, 2014, following a CNSC inspection near Grande Prairie, Alberta, where workers were conducting radiography operations in an unsafe manner. Among other things, an inspector observed an exposure device operator trainee performing radiography work without supervision, along with workers not performing the required exposure device safety checks and not using the required safety equipment.

The order required Mistras Canada Inc. to remove one of their workers from duties related to the use of nuclear substances – including the supervision of exposure device operator trainees – until the worker no longer posed a risk to the health and safety of persons.

On September 12, 2014, the CNSC confirmed that Mistras Canada Inc. had complied with all the terms and conditions of the order; CNSC staff reviewed the corrective measures implemented by the company and found them acceptable.

Order to Parkland Geotechnical Consulting Ltd.
On August 6, 2014, the CNSC announced it had issued an order to Parkland Geotechnical Consulting Ltd., a company based in Medicine Hat, Alberta, offering geotechnical, civil and materials engineering services. The company currently holds a CNSC licence that authorizes the possession, transfer, use and storage of portable nuclear gauges.

The order was issued on July 29, 2014, following a CNSC inspection at a location in Medicine Hat. The inspection identified a number of non-compliances related to the requirements for transport of the portable nuclear gauges. The inspection also revealed that not all workers were adequately trained to safely conduct the activities authorized under the licence.

The order required Parkland Geotechnical Consulting Ltd. to cease the use of the portable nuclear gauges at its Medicine

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Hat location until such time that corrective measures were satisfactorily implemented to address all non-compliances.

On August 14, 2014, the CNSC confirmed that Parkland Geotechnical Consulting Ltd. had complied with all the terms and conditions of the order; CNSC staff reviewed the corrective measures implemented by the company and found them acceptable.

Administrative monetary penalty issued to the Canadian Air Transport Security Authority
On September 4, 2014, the CNSC announced it had issued an administrative monetary penalty (AMP) in the amount of $4,900 to the Canadian Air Transport Security Authority as a result of their failure to comply with section 26 of the *Nuclear Safety and Control Act* (carrying on a prescribed activity without or contrary to a licence). Following a review by the Commission, the AMP amount was revised to $2,170.

Order to Marsh Instrumentation Inc.
On September 18, 2014, the CNSC announced that it had issued an order to Marsh Instrumentation Inc., a company based in Burlington, Ontario, specializing in instrumentation servicing.

The order was issued on September 11, 2014, following an onsite inspection which revealed that Marsh Instrumentation was in possession of a radiation device without a CNSC licence.

The order required Marsh Instrumentation Inc. to immediately place the radiation device in secure storage to prevent its unauthorized access, to arrange for the transfer of the device to a person authorized by the CNSC to possess such a device, and to provide the CNSC with documentary evidence of the transfer by September 22, 2014.

On September 29, 2014, the CNSC confirmed that Marsh Instrumentation Inc. had complied with all the terms and conditions of the order; the radiation device was transferred to a company authorized to possess such device on September 16, 2014.

Order to Fort McMurray Inspection and Testing Inc.
On October 22, 2014, the CNSC announced it had issued an order to Fort McMurray Inspection and Testing Inc., a company based in Fort McMurray, Alberta, offering geotechnical, environmental, civil and materials engineering services. The company currently holds a CNSC licence that authorizes the possession, transfer, use and storage of portable nuclear gauges.

The order was issued on October 14, 2014, following a CNSC inspection at the company's location in Fort McMurray. The inspection identified a number of non-compliances related to the company's radiation protection program for portable nuclear gauges. The inspection also revealed that not all workers were adequately trained to conduct the activities authorized under the licence.

The order required the licensee to return all its portable nuclear gauges to secure storage at its Fort McMurray location, until such time that an effective radiation protection program is implemented, and all non-compliances observed during the inspection have been satisfactorily addressed.

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On October 17, 2014, the CNSC confirmed that Fort McMurray Inspection and Testing Inc. had complied with all the terms and conditions of the order; CNSC staff reviewed the corrective measures implemented by the company and found them acceptable.

Administrative monetary penalty issued to Westcoast Energy Inc.
On November 4, 2014, the CNSC announced it had issued an administrative monetary penalty in the amount of $4,900 to Westcoast Energy Inc., as a result of their failure to comply with section 26 of the *Nuclear Safety and Control Act* (carrying on a prescribed activity without or contrary to a licence).

Administrative monetary penalty issued to RSB Logistic Inc.
On December 8, 2014, the CNSC announced it had issued an administrative monetary penalty in the amount of $3,730 to RSB Logistic Inc., as a result of their failure to comply with section 26 of the *Nuclear Safety and Control Act* (carrying on a prescribed activity without or contrary to a licence).

Order to Nine Energy Canada Inc.
On December 23, 2014, the CNSC announced that it had issued an order to Nine Energy Canada Inc., a company based in Calgary, Alberta, which services the oil and gas industry. The company currently holds a CNSC licence authorizing the possession and use of sealed nuclear substances used to identify geological formations in drilled oil wells.

The order was issued on December 16, 2014, following a CNSC inspection at the company's location in Red Deer, Alberta. The inspection identified a number of non-compliances with regulatory requirements, including the failure by Nine Energy Canada Inc. to adequately implement the company's radiation safety program.

The order required Nine Energy Canada Inc. to place all of its nuclear substances into secure storage until the company fully implements its radiation safety program and corrects all items of non-compliance identified during the inspection.

On January 15, 2015, the CNSC confirmed that Nine Energy Canada Inc. had complied with all the terms and conditions of the order; CNSC staff reviewed the corrective measures implemented by the company and found them acceptable.

Order and Administrative Monetary Penalty issued to Babcock & Wilcox Canada Ltd.
On January 28, 2015, the CNSC announced that it had issued an order to Babcock & Wilcox Canada Ltd., a company based in Cambridge, Ontario, providing testing services to the industrial sector. The company currently holds a CNSC licence authorizing the possession and use of nuclear substances contained in industrial radiography exposure devices, for the purpose of materials testing.

The order was issued on December 15, 2014, following a CNSC inspection at the company's location in Melville, Saskatchewan. The CNSC inspector observed that the company was unable to demonstrate that the exposure devices in use at this location were being maintained in accordance with the devices' manufacturer's specifications and the CNSC licence

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conditions. The order prohibited Babcock & Wilcox Canada Ltd. from using two of its exposure devices until the company performed the required maintenance on the devices, including their various accessories.

On December 31, 2014, the CNSC confirmed that Babcock & Wilcox Canada Ltd. has since complied with all the terms and conditions of the order; CNSC staff reviewed the corrective measures implemented by the company and found them acceptable.

The licensee was also issued an Administrative Monetary Penalty in the amount of $7,930, as a result of their failure to comply with paragraph 48(f) of the *Nuclear Safety and Control Act* (failure to assist or give information requested by an inspector).

Administrative monetary penalty issued to the University of Western Ontario

On January 29, 2015, the CNSC announced it had issued an administrative monetary penalty (AMP) in the amount of $1,000 to the University of Western Ontario, as a result of failure to comply with section 13 of the *General Nuclear Safety and Control Regulations* (transfer to a person without a licence).

Additional information on regulatory actions can be found on the CNSC website.

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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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