



# DNSR Newsletter

## New director in Accelerator and Class II Facilities Division

First things first ... it is our pleasure to announce the appointment of Mark Broeders to the role of Director, Accelerators and Class II Facilities Division (ACFD), effective August 1, 2016.

Mark joined the CNSC on September 8, 2008 as a Project Officer in ACFD and was promoted to Program Officer in 2011. Before coming to the CNSC, Mark was Managing Director at Nucletron Canada Inc. and Director, Business Development at Resonant Medical Inc. for several years, gaining valuable experience and building his leadership competencies. He also has extensive experience in radiotherapy applications. Combined with his management and regulatory background, this provides him with an excellent perspective on licensing and compliance of Class II nuclear facilities.

Mark replaces Kavita Murthy, who was the driving force behind the evolution of the ACFD over the past decade. Kavita took on a new challenge within the CNSC when she was appointed to the position of Director, Nuclear Processing Facilities Division in the Directorate of Nuclear Cycle and Facilities Regulation in March 2016. Kavita's innovation, technical expertise and strong collaborative leadership style with team members and other stakeholders helped to build effective relationships with both national and international organizations, including the Canadian Organization of Medical Physicists, during her tenure as ACFD Director. Some of Kavita's key contributions to the

CNSC over recent years included bringing low-energy accelerators under CNSC regulatory control and implementing improvement initiatives such as electronic licensing. We'll miss her, but are also looking forward to working with Mark in the future.

In addition, the Directorate of Nuclear Substances is pleased to welcome Rachel Timmins in the Accelerator and Class II Facilities Division, as well as Simon Martel, Rob Martin and Lacey Wallace in the Operations Inspection Division, who are based in the Laval, Mississauga and Calgary offices respectively.

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## Supporting first responders during the Fort McMurray fires in May 2016

On May 11, 2016, the CNSC received a request from the Alberta Regional Emergency Operations Centre for assistance in determining the status and risk of radiation devices that might have been affected by the wildfire in Fort McMurray, AB. In response to this request, the CNSC sent a Chemical, Biological, Radiological and Nuclear program officer and an inspector from the Operations Inspection Division.

In preparation for the deployment in Fort McMurray, a wide array of instruments were requested from the CNSC laboratory, including gamma and neutron survey meters, contamination meters, spectrometers, direct-read dosimeters, a teletector (its purpose is to measure dose rates in areas that are inaccessible for some safety issue or areas that have particularly high dose rates), and sample collection materials. With the equipment and supplies loaded into a vehicle, the CNSC staff arrived in Fort McMurray on the morning of May 12, 2016.

The first stop was the Emergency Operations Centre, where they met with the safety officer and developed an action plan for surveying the city. The primary concern from the Emergency Operations Centre was if there had been any radiation devices in the neighborhoods that had burned down, and if they had been damaged or stored inappropriately.



CNSC staff loading a truck with emergency gear

In total, 23 locations where portable gauges or radiography cameras were stored were identified and scheduled for inspection. Radiation surveys were also performed at the Emergency Operations Centre's request to determine if there were any radiation levels above background in the fire-affected areas. All areas identified were monitored by CNSC staff and by the end of the day on May 13, the Emergency Operations Centre safety officer was debriefed by CNSC staff. From a radiological perspective, it was confirmed by CNSC staff that all radiation devices located in the identified areas were safely stored and unaffected and that radiation surveys of these neighborhoods did not reveal radiation measurements above natural background levels.

Ultimately, the CNSC was able to provide support to the community, allowing it to focus on fighting the fires and protecting the community during this challenging time.

## Revision to classes of nuclear substances table for contamination control

Licensees who use unsealed nuclear substances typically have the following licence condition incorporated into their licence:

*The licensee shall ensure that for nuclear substances listed in the Appendix: Classes of Nuclear Substances, attached to this licence:*

- (a) *non-fixed contamination in all areas, rooms or enclosures where unsealed nuclear substances are used or stored does not exceed:*
  - (i) *3 becquerels per square centimetre for all Class A radionuclides;*
  - (ii) *30 becquerels per square centimetre for all Class B radionuclides; or*
  - (iii) *300 becquerels per square centimetre for all Class C radionuclides; averaged over an area not exceeding 100 square centimetres; and*
- (b) *non-fixed contamination in all other areas does not exceed:*
  - (i) *0.3 becquerels per square centimetre for all Class A radionuclides;*
  - (ii) *3 becquerels per square centimetre for all Class B radionuclides; or*
  - (iii) *30 becquerels per square centimetre for all Class C radionuclides; averaged over an area not exceeding 100 square centimetres.*



This condition references the appendix, *Classes of Nuclear Substances* which classifies radionuclides into three classes – Class A, Class B, or Class C – on the basis of common radiological characteristics.

This table is also included as appendix Y in [REGDOC-1.6.1, Licence Application Guide: Nuclear Substances and Radiation Devices](#).

REGDOC-1.6.1 is currently under revision and the revisions to the classes of nuclear substances will be incorporated in the new version.

This information is also included in the [REGDOC-1.4.1, Licence Application Guide: Class II Nuclear Facilities and Prescribed Equipment](#) that is undergoing public consultation.

Recently, the CNSC revised the approach used to classify nuclear substances for contamination control purposes. The new methodology better accounts for the impact of half-life on radiological hazard, in particular the lower risk generally associated with short lived isotopes. The most significant impact of this change is for medical isotopes used for positron emission tomography, which are now generally Class C isotopes (with the exception of I-124, which remains Class A).

The existing appendix, *Classes of Nuclear Substances*, in all existing licences will be updated accordingly as part of future licence amendments. The revised table is shown below. If you have any questions or concerns, please contact your licensing officer or project officer.

**Revised Table of Classes of Nuclear Substances**

CLASS	RADIONUCLIDE				
<b>CLASS A</b>	all alpha emitters and their daughter isotopes				
	Ag-110m	Bi-210	Co-56	Co-60	Cs-134
	Cs-137	I-124	Lu-177m	Mn-52	Na-22
	Po-210	Pu-238	Pu-239	Pu-240	Sb-124
	Sc-46	Sr-82	U-234	U-235	U-238
	V-48	Zn-65			
<b>CLASS B</b>	Au-198	Ba-133	Br-82	Ce-143	Co-58
	Cu-67	Fe-59	Hg-194	Hg-203	I-131
	Ir-192	La-140	Mo-99	Nb-95	Pa-233
	Ra-223	Re-186	Re-188	Ru-103	Sb-122
	Sm-153	Sr-90	Xe-127	Y-86	Y-90
	Yb-169	Zr-89	Zr-95		
<b>CLASS C</b>	C-11	C-14	Ca-45	Cd-109	Ce-141
	Cl-36	Co-57	Cr-51	Cu-60	Cu-61
	Cu-64	F-18	Fe-55	Ga-67	Ga-68
	Ge-68	H-3	I-123	I-125	In-111
	In-113m	In-114	K-42	Kr-85	Lu-177
	Mn-52m	Mn-56	N-13	Na-24	Nb-98
	Ni-63	O-15	P-32	P-33	Pd-103
	Pr-144	Pu-241	Rh-106	S-35	Sc-44
	Sn-113	Sr-89	Tc-94m	Tc-99	Tc-99m
	Te-127	Tl-201	V-49	W-181	W-188
	Xe-133	Zn-63			

## Retention of records for servicing activities for Nuclear Substances and Radiation Devices Licensees

The CNSC would like to clarify an issue with retention of records for servicing that has arisen during an inspection. Record keeping plays an important role in the CNSC’s ability to verify that licensees are complying with the *Nuclear Safety and Control Act* and its regulations, and following their internal procedures. There are many different records that must be maintained by licensees, and the specific type depends on the activities performed. A comprehensive list of those records can be found in [REGDOC-1.6.1, Licence Application Guide: Nuclear Substances and Radiation Devices](#).

The servicing of radiation devices and prescribed equipment is an example of an activity where record keeping is critical to ensuring work is done safely. This type of activity involves the manipulation of a radiation device and/or prescribed equipment for the purposes of maintenance or repairing the device or the equipment. The regulations specify that the records must be maintained by the servicing company that performs the work. The servicing company must maintain the proper records to confirm that approved procedures were followed and the work was done safely. CNSC inspectors will verify these records when performing inspections at a servicing company. CNSC inspectors do this to confirm that approved procedures were followed and that the work was done safely by the servicing company.

Although the regulations do not specifically require the licensee to retain the servicing records, the owner of the device or equipment should also maintain servicing records to ensure that any work performed on the device or equipment is serviced as per the manufacturers design and the CNSC’s certification of the design. This provides assurance to the owner of the device that the device or prescribed equipment has not been altered outside of the manufacturers design certified by the CNSC. Any alteration of the safety features of the device/equipment outside of the original design may invalidate this specific device from the certification and prevent its use until it fully complies with the original approved design or that the modification is approved by the CNSC following an application for its certification.

## Regulatory Oversight Report on the use of Nuclear Substances in Canada: 2015

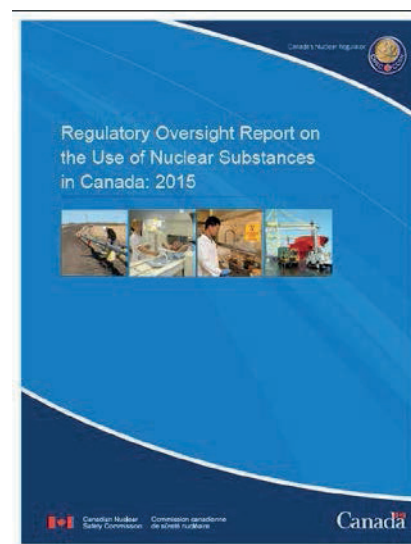
On September 22, 2016, the Directorate of Nuclear Substances Regulations staff presented its findings on the CNSC’s *Regulatory Oversight Report on the Use of Nuclear Substances in Canada: 2015* to

the Commission at a public meeting. This report described the safety performance of licensees using nuclear substances in medical, industrial, commercial, academic and research applications. Safety performance is measured in terms of licensees’ regulatory compliance and occupational doses. The report also includes a summary of reported events and orders issued by the CNSC.

The overall performance highlights in the 2015 report include:

- Licensees continued to maintain appropriate safety programs to protect the health and safety of Canadians and the environment.
- Occupational exposure to radiation continued to be low, with over 88.7 percent of workers receiving doses below their respective regulatory dose limits.
- CNSC staff performed more than 1,568 inspections.
- Generally satisfactory compliance ratings for the safety and control areas of Management Systems, Operating Performance, Radiation Protection, and Security.
- 21 enforcement actions were taken against licensees to protect the health and safety of workers, the Canadian public and the environment; satisfactory corrective measures implemented by all licensees.
- CNSC staff assessed 155 reported events.

The final report may be viewed [here](#)



## CNSC regulatory actions

As part of its regulatory oversight – and to protect the health and safety of workers, the public and the environment – the CNSC issues regulatory actions to non-compliant licensees. The CNSC took the following regulatory actions between September 1, 2015 and July 31, 2016.

### **Order issued to GEM Testing Ltd.**

On December 15, 2015, the CNSC announced that it had issued an order to GEM Testing Ltd., a company based in Dunmore, AB, that offers geotechnical, environmental, civil and materials engineering services.

The CNSC confirmed that GEM Testing Ltd. had complied with all the terms and conditions of the order issued. CNSC staff reviewed the corrective measures implemented by the company and found them satisfactory.

### **Order issued to Englobe Corp.**

On December 15, 2015, the CNSC announced it had issued an order to Englobe Corp., a company based in Laval, QC, that offers geotechnical, environmental, civil and materials engineering services.

The CNSC confirmed that Englobe Corp. had complied with all the terms and conditions of the order. CNSC staff reviewed the corrective measures implemented by the company and found them satisfactory.

### **Order issued to the Ontario Ministry of Northern Development and Mines**

On December 16, 2015, the CNSC announced it had issued an order to the Ontario Ministry of Northern Development and Mines. This provincial government agency is currently directing activities related to the implementation of an environmental remediation plan for First Nickel Inc.'s Lockerby Mine site, located near Sudbury, ON.

The CNSC confirmed that the Ontario Ministry of Northern Development and Mines had complied with all the terms and conditions of the order. CNSC staff reviewed the corrective measures implemented by the licensee and found them satisfactory.

### **Order and administrative monetary penalty issued to Elekta, Inc.**

On December 21, 2015 the CNSC announced it had issued an order to Elekta, Inc., a company based in Atlanta, Georgia, USA that manufacture Class II Prescribed Equipments.

The CNSC confirmed that Elekta Inc. had complied with all the terms and conditions of the order. CNSC staff reviewed the corrective measures implemented by the licensee and found them satisfactory. The CNSC also confirmed that the administrative monetary penalty issued to Elekta, Inc. has been paid and is now considered closed.

### **Order issued to Porocel of Canada, Ltd**

On December 24, 2015, the CNSC announced it had issued an order to Porocel of Canada, Ltd, a company based in Medicine Hat, AB that provides products and services to the refining and petrochemical industries.

The CNSC confirmed that Porocel of Canada, 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 satisfactory.

### **Order issued to Rock Tech Lithium Inc.**

On November 30, 2015, the CNSC issued an order to Rock Tech Lithium Inc., a mineral exploration company based in Vancouver, BC.

### **Order and administrative monetary penalty issued to Nasiruddin Engineering Ltd.**

On February 11, 2016, the CNSC announced that it had issued an order and an administrative monetary penalty to Nasiruddin Engineering Ltd., a company based in Mississauga, ON, that offers geotechnical, environmental, civil and materials engineering services.

The CNSC confirmed that Nasiruddin Engineering 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 satisfactory. The CNSC also confirmed that the administrative monetary penalty has been paid and is now considered closed

### **Administrative monetary penalty issued to the City of Ottawa**

On March 2, 2016, the CNSC announced it had issued an administrative monetary penalty to the City of Ottawa.

The CNSC confirmed that this administrative monetary penalty has been paid and is now considered closed.

### **Order issued to PML Inspection Services Ltd.**

On March 17 2016, the CNSC announced it had issued an order to PML Inspection Services Ltd., a company based in Fort Saskatchewan, AB that provides testing services to the industrial sector.

The CNSC confirmed that PML Inspection Services 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 satisfactory.

### **Order issued to Tomlinson Enterprises Ltd.**

On March 18, 2016, the CNSC announced it issued an order to Tomlinson Enterprises Ltd., a company based in Sarnia, ON, that provides testing services to the industrial sector.

The CNSC confirmed that Tomlinson Enterprises Ltd. had complied with all the terms and conditions of the order issued on March 11, 2016. CNSC staff reviewed the corrective measures implemented by the company and found them satisfactory.

**Order and administrative monetary penalty issued to Nuclear Services Canada Inc.**

On April 4, 2016, the CNSC announced it issued an order to Nuclear Services Canada Inc., a company based in Merlin, ON that provides calibration services to licensees that possess nuclear substances.

On May 10 2016, the CNSC announced it had issued an administrative monetary penalty to Nuclear Services Canada Inc.

The CNSC confirmed that Nuclear Services 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 satisfactory. The CNSC confirmed that the administrative monetary penalty has been paid and is now considered closed.

**Order to Canadian Tower Scanning Inc.**

On April 27 2016, the CNSC announced it had issued an order to Canadian Tower Scanning Inc., a company based in Sarnia, ON that provides well logging services to the oil and gas sector.

The CNSC confirmed that Canadian Tower Scanning 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 satisfactory.

**Order issued to Groupe ABS Inc.**

On June 27, 2016, the CNSC announced it had issued an order to Groupe ABS Inc., a company based in St-Rémi, QC that offers geotechnical, environmental, civil and materials engineering services.

The CNSC confirmed that Groupe ABS 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 satisfactory.

DNSR staff welcomes any questions on the above articles or any other regulatory matters. If you have any suggestions or would like to see articles on other topics in future editions of the newsletter, contact us at [cnscc.information.ccsn@canada.ca](mailto:cnscc.information.ccsn@canada.ca)