



# DNSR Newsletter

## Reminder of Certified Exposure Device Operator Card Exchange Program

In February 2013, all licensees, industry and vocational training institutions were informed that, effective immediately, the certified exposure device operator (CEDO) certification card will have a validity period of five years.

For current qualified operators (QOs) and CEDOs, the CNSC will swap the existing card for a new CEDO card with an expiry date. The expiry date was determined using an algorithm based on the person's NRCAN number, and ranges from two to seven years. For individuals who were certified as EDOs prior to February 20, 2013, the expiry date of their certification card was established by taking the last digit of the CEDO's NRCAN # to determine the year of expiry and the second to last digit to determine the month of expiry. For those who were certified as EDOs on or after February 20, 2013, the expiry date of their certification card was determined to be five years after the date of initial certification. This will ensure that expiration dates are distributed evenly during the calendar year, as well as over the five-year period.

Until October 1, 2013, all QOs and CEDOs who surrender their existing card (or their original letter of certification) will be issued a new certification card.

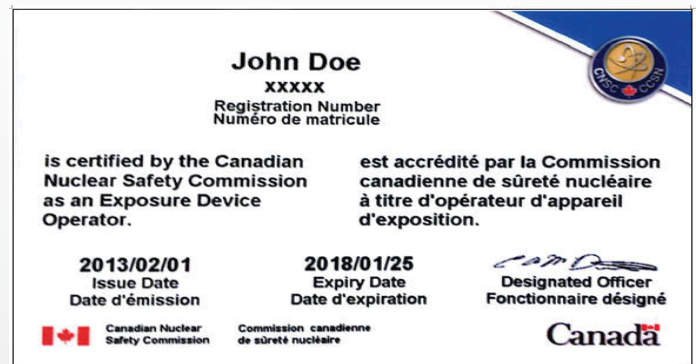
To receive your new card, simply return your current card to the CNSC, at the following address:

Canadian Nuclear Safety Commission  
Attn: Personnel Certification Division  
P.O. Box 1046, Station B  
280 Slater Street  
Ottawa, Ontario K1P 5S9

CNSC inspectors are aware that during this period, as a result of the exchange program, QOs and CEDOs may not have their cards with them. Therefore, inspectors will verify certification status by other means.

Effective October 1, 2013, CNSC inspectors will continue to accept a QO or CEDO card without an expiry date as proof of certification. They will, however, ask to have the card back, and a replacement card will be sent to the CEDO as soon as possible. The inspectors can still verify certification status by other means.

**Exchange your card today!**



### In this issue

Reminder of Certified Exposure Device Operator (CEDO) Card Exchange Program.....	1
BETA Testing of New CEDO Exam.....	2
Comment Period for the New CEDO Certification Guide .....	2
Expectations for Source Recovery Incidents .....	3
Posting Warning Signs and Barriers During Radiography Operations.....	4





## BETA Testing of the New CEDO Exam

As part of the new Certified Exposure Device Operator (CEDO) program, the EDO Personnel Certification Scheme Committee – which includes Canadian Standards Association (CSA) staff, Canadian Nuclear Safety Commission (CNSC) staff and industry personnel – developed a bank of questions for the new CEDO exam. These questions will be used as part of the final certification process, as per the proposed draft CSA document [CSA PCP-09, Certified Exposure Device Operator \(CEDO\) Certification Guide](#).

The CNSC and the CSA are seeking 100 CEDOs to participate in a beta test, which will be available until December 20, 2013. BETA testing would involve current CEDOs writing an exam made up of multiple-choice questions. The CNSC and the CSA encourage participation in the BETA testing as this would be critical to validate the exam questions. Following registration by the CEDOs, the exam can be taken online at any of the [Kryterion test centres](#) used by the CSA for testing purposes. Individual exam results will be kept confidential.

To participate in this BETA test, please complete the CEDO BETA exam application form found at the [CSA Communities of Interest](#). You can also send an

email to [training@csagroup.org](mailto:training@csagroup.org) to request a copy of the application form. If you have any questions or issues with scheduling the exam, please contact Kelly Adamovich or Michelle Williams, from CSA, at 1-877-235-9791 or send an email to [training@csagroup.org](mailto:training@csagroup.org)

BETA testing is a method used to guide the selection of questions for the final version of the exam by:

- gathering psychometric information to evaluate each new exam question and answer
- discovering any prospective flaws or issues with the questions or any additional features for inclusion in the exam
- benchmarking the examination to establish a passing grade
- testing the adequacy of the instructions and the materials
- ensuring a legally defensible examination for certification
- increasing client satisfaction with the quality of the results

## Comment Period for the New Certified Exposure Device Operator Certification Guide

The draft Canadian Standards Association (CSA) document [CSA PCP-09, Certified Exposure Device Operator \(CEDO\) Certification Guide](#), provides guidance to qualified individuals on the recommended procedures to achieve and maintain CEDO certification. The CNSC has proposed to replace its regulatory guide [G-229, Certification of Exposure Device Operators](#), published in 2004, with CSA PCP-09. Compliance with these procedures will provide evidence that the person seeking qualification meets the minimum requirements to be designated as a CEDO.

The CSA Group is a not-for-profit organization that develops standards in the areas of public safety and

health. This document has been developed through the participation of professionals from CSA Group, the radiography industry, as well as government departments and regulators (through membership in the primary committee and various sub-committees), and through surveys of the stakeholder population.

CSA PCP-09 was posted on the [CSA Web site](#) for a period of more than 90 days so that the public could provide comments on the proposed certification guide.

The CSA scheme committee will review all comments prior to finalizing the document.



## CNSC Expectations for Source Recovery Incidents

Industrial radiography is inherently a high-risk activity. Work is performed using exposure devices, often loaded with high-activity and high-energy sources. Although licensees can prevent many equipment-related malfunctions from occurring (by performing daily pre-operational verifications and routine maintenance of the device and the accessories, as required by the [Nuclear Substances and Radiation Devices Regulations](#) [NSRDR]), incidents and accidents may still happen. Although infrequent, the possibility for an industrial radiography licensee to perform a source recovery still exists. Therefore, industrial radiography licensees must be prepared accordingly.

The following list provides regulatory references concerning the expectations of the Canadian Nuclear Safety Commission (CNSC) in the event of a source recovery:

Note: This list is not all-inclusive and does not preclude or exempt a licensee or its workers from complying with all other applicable requirements in the [Nuclear Safety and Control Act](#), its associated regulations, and/or licence conditions. This guidance information does not serve to limit the CNSC in its duties as a regulator. The CNSC's expectations can be subject to change, based on the circumstances of the incident.

### **General Nuclear Safety and Control Regulations (GNSCR), sections 12 and 17, Radiation Protection Regulations (RPR), paragraph 4(a)**

The damaged exposure device must not be moved until the incident is responded to by a person who has received specialized training for source recovery or the workers are under such a person's supervision. The requirement for a specialized, trained individual means that the exposure to workers or responders during the recovery should be minimized.

### **NSRDR 30(2)(b), NSRDR 31(1)(b)**

Workers may need to use some of the emergency equipment required by the regulations in order to shield the sealed source as much as possible, if safe to do so. Additional shielding may be located near the scene of the incident and can also be used.

### **RPR 21(b), NSRDR 31(1)(j)**

Radiation warning signs and barriers may need to be relocated as a result of the recovery circumstances in order to comply with the regulatory limits of 25 µSv/hr for the radiation warning sign and 100 µSv/hr for the barrier.

### **NSRDR 30(6)**

Regardless of the barrier and signage locations placed to comply with RPR 21(b) and NSRDR 31(1)(j), the licensee

must ensure that the radiation doses to any non-nuclear energy workers in the vicinity will not exceed the regulatory limits of 0.1 mSv/week or 0.5 mSv/year, as specified for exposure devices.

### **NSRDR 30(2), NSRDR 38 (1)**

Immediately notify the CNSC of the circumstances of the event once it is safe to do so. The notification should include information on the doses to workers (if known), the types of instrumentation (direct reading dosimeters/electronic personal dosimeters/personal alarming dosimeters/survey meters) being used, the make and model of the exposure device, the source and its activity, as well as the actions that the licensee expects (or has taken) with respect to the incident. This notification can be made to the CNSC duty officer (613-995-0479) 24 hours a day, 7 days a week.

### **NSRDR 30(7), NSRDR 31(6)**

No person, other than a person who has received specialized training for source recovery shall respond to the incident.

### **RPR 13, RPR 14**

The licensee and its workers must exercise extra diligence to ensure that the regulatory dose limits (to both whole body and extremities) are not exceeded as a result of performing a source recovery. Workers should perform any adjustments, manoeuvres or manipulations with remote tools and not use their bare hands directly.


### **GNSCR 12, GNSCR 17, RPR 5**

Dosimetry worn by workers performing tasks prior to the incident or during the incident should be sent to the dosimetry service provider for analysis as soon as possible after the conclusion of the incident.

### **RPR 6(1), RPR 16, licence condition 2700**

The licensee must review dosimetry results as they become available and report any regulatory or action level exceedances to the CNSC (immediately if a regulatory dose limit is exceeded and within 48 hours if an action level is exceeded).

### **NSRDR 38 (2)**

Within 21 days of the incident occurring, the licensee must file a final report with the CNSC containing all the information prescribed in the regulations. This report should contain information that is detailed enough to permit a re-enactment of the incident. A thorough root cause analysis should be included with the report along with detailed information on the licensee's proposed corrective actions to prevent any recurrence of the incident. More details will be provided on the CNSC Web site to further describe the CNSC's expectations. 

## Posting Warning Signs and Barriers During Radiography Operations

While industrial radiography is being performed, proper signage and barriers must be used by licensees at every point of access. Radiation warning signs and barriers, in sufficient numbers, play a key part in every licensee's radiation protection and emergency management programs. Their purpose is to alert people about the presence of ionizing radiation and to provide readily available emergency contact information, if needed.

The following list provides regulatory references and guidance concerning the expectations of the Canadian Nuclear Safety Commission (CNSC) with respect to the proper posting of signs and barriers around locations where industrial radiography is taking place:

### [Radiation Protection Regulations](#), paragraphs 21(a) and (b)

Post prominent radiation area warning signs – including the trefoil symbol and appropriate wording – to provide sufficient warning to any person about the presence of a radiation area (beyond the sign) where nuclear substances or radiation devices are used. These signs must be posted at readily visible locations so that any person entering the area is alerted to the potential for radiation exposure.

### [Nuclear Substances and Radiation Devices Regulations \(NSRDR\)](#), paragraph 23(a)

Similar to the posting of radiation area warning signs, emergency contact details must be readily visible to non-licensees or members of the public, outside the radiation area. These must include the name or job title of a person who can be reached 24/7 and who is capable of initiating the licensee's emergency response procedure.

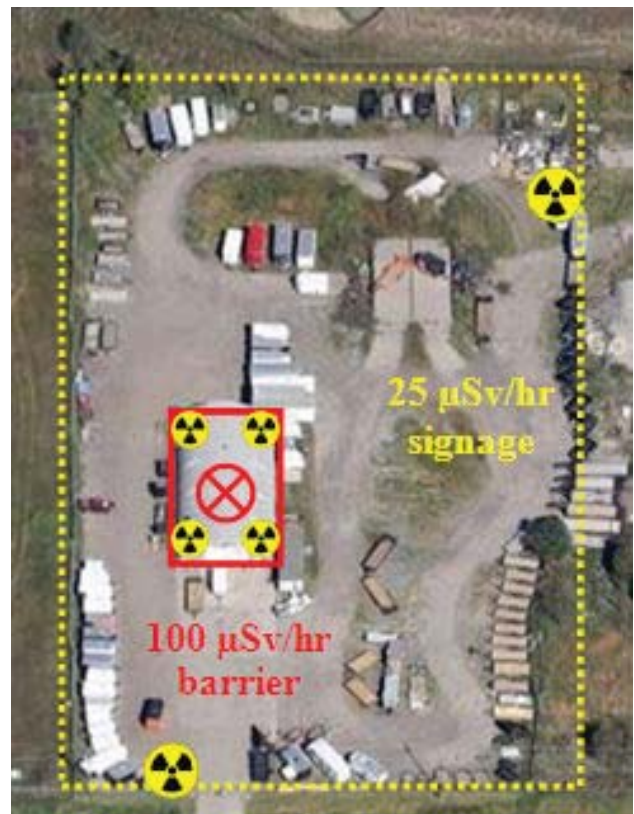
### **NSRDR, paragraph 31(1)(j)**

This is a complimentary requirement to paragraphs 21(a) and (b) of the *Radiation Protection Regulations* (RPR) and specific to the operation of exposure devices. Operators must place security personnel or erect barriers with warning signs around areas where the radiation dose rate can be greater than 100  $\mu\text{Sv/hr}$ , to physically prevent entry.

The following examples illustrate ways to achieve compliance with the regulatory requirements listed above. Every situation is different and licensees are responsible for evaluating each situation to ensure that all applicable regulatory requirements are complied with.

### **Fabrication shop example (see figure below for a visual aid)**

Radiation warning signs are posted at an outer gate along with the wording: "Rayonnement – Danger – Radiation." To satisfy the requirements of RPR 21(a) and (b), the dose rate at the boundary warning signs must never exceed 25  $\mu\text{Sv/hr}$ . The dose rate at the fab shop door (unlocked) may be higher than 25  $\mu\text{Sv/hr}$ , but must be below 100  $\mu\text{Sv/hr}$ . Inside the fab shop, there must be additional barriers and signs, or security personnel who would prevent anyone from entering an area where the radiation level exceeds 100  $\mu\text{Sv/hr}$ . These barriers and signs may be outside the shop, depending on where the radiation level exceeds 100  $\mu\text{Sv/hr}$ .



### **Pipeline example**

Radiation area warning signs must be posted on the right-of-way, ahead of, as well as behind the radiography work location; they must be visible to anybody who is

*Continued on page 5.*






## Posting Warning Signs and Barriers During Radiography Operations

... continued from p.4

likely to approach the radiation area. The dose rate at the boundary warning signs must never exceed 25  $\mu\text{Sv/hr}$  according to the requirements of RPR 21(a) and (b). The radiographer may place the signs such that a small number of welds can be evaluated without moving the signs every time the source is exposed. The radiographer must have full visual control of the radiation area at all times when the source is exposed (in order to prevent entry) and also be in a position to immediately return the source to the shielded position should any unauthorized person approach the exposure area. If the radiographer (or a co-worker) is unable to maintain continuous visual surveillance of the radiation area, additional physical barriers and signs are required to prevent any person from entering the radiation area. This is usually accomplished by placing signed rope, barrier ribbon or a signed wooden sawhorse across the right-of-way.

### Consideration of doses to persons who are not nuclear energy workers

The posting of signs and barriers may not be adequate to limit the dose of radiation received by other persons to less than 100  $\mu\text{Sv/week}$  or 500  $\mu\text{Sv/year}$ . This can occur if radiography is routinely performed at the same location and other activities occur in adjacent workspaces. Licensees should assess these job sites prior to performing work. For situations where radiography occurs routinely at the same job site and where other workers (who are members of the public) are nearby, the licensee may need to take dose rate measurements over an extended time period. These measurements should demonstrate that other workers and members of the public at the job site are not unnecessarily exposed to ionizing radiation, and that no person will receive a radiation dose exceeding the regulatory limit. Keep a record of your assessment to demonstrate that the public doses limits are respected. 

### DNSR Newsletter

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

Articles appearing in the *DNSR Newsletter* may be reprinted without permission, provided credit is given to the source.

ISSN 1920-7484 (Print)  
ISSN 1920-7492 (Online)

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](mailto:info@cnsccsn.gc.ca)  
Web site: [nuclearsafety.gc.ca](http://nuclearsafety.gc.ca)