



# Canadian Radiation Protection Association Association canadienne de radioprotection

*Canada's network of radiation safety specialists  
réseau canadien des spécialistes en radioprotection*

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Via E-Mail

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Dear Ms Thomas,

**RE: DIS-14-02: Modernizing the CNSC's Regulations**

Attached are comments addressing DIS-14-02: Modernizing the CNSC's Regulations from the CRPA Positions Statement Committee on behalf of the Board and membership of the CRPA.

Thank you for the opportunity to comment.

*J. Dovyak*

Jeff Dovyak RTNM, CRPA (R)  
President

## **Canadian Radiation Protection Association (CRPA): CNSC DIS-14-02**

### **Question 1: Could the CNSC's regulations be changed to make them more efficient and effective in ensuring protection of the health, safety, security and the environment? How?**

CNSC would increase efficiency and effectiveness both for its own staff and the Licensee by posting links to important documents it uses as references in settings its own regulatory limits and the licence limits. This is becoming much more a critical issue as national and international agencies focus on harmonizing their regulations. Global contracts and collaborations also introduce an international approach. Thus if the links to important international standards or guidance documents could be posted in a visible location often accessed by the Licensee, a proactive approach can be taken.

In addition, CNSC may consider to provide better clarification for NEW vs non-NEW, the dose limit to the lens of the eye, and the connection between the EQs and health effects (such as ALI).

### **Question 2: Is the CNSC striking the right balance between performance-based regulation and prescriptive requirements? Are there specific regulatory requirements that do not seem to have the correct approach?**

The combination of prescriptive requirements and performance-based regulation works well, but better communications among CNSC licensing officers are encouraged so that criteria or programs can be communicated effectively. Problems often arise due to the variation in the inspection process, mis-alignment of the expectation and interpretation between inspectors and license officers.

Adoption of the Precautionary Principle is reflecting regulatory creep, without any gain to the protection of the individual, community or environment. Samples that are <EQ are not exempt if you have a licence, which means licence conditions apply to this material. Tracking and record keeping offer no gain as there was inconsequential risk associated with EQ values. This administrative process does increase risk, as the Licensee must focus considerable resources on managing this RAM consequently, energy and time are redirected away from inspections/monitoring/training/advising and facilitating management process.

Flexibility must be retained as critical component of performance based evaluations. Research and its supporting infrastructure varies significantly between institutions, use of RAM is such that the associated risk is not uniform across the country. Hence the risk to individuals and the environment also varies and a prescriptive approach may be inappropriate, unsustainable and contrary to ALARA.

*Inconsistent Approach for Serial Numbers:* Often sealed sources arrive without a serial number either on the source or with its supporting documentation. Yet the Licensee must list in its inventory serial numbers and calibration dates. Manufacturers are not held accountable to have this information available. CNSC does not require a consistent serial number to be applied, which prevents cradle to grave tracking. In addition equipment containing radioactive sources doesn't always have the serial number visible from the exterior, or are appropriate changed by the supplier when sources are switched. When manufacturers are asked to provide the certification records they are not able to do so. Yet it is the Licensee that is cited for the failure to have this documentation. If CNSC has deemed from the manufacturer need not retain and distribute this information, it should not be required from the recipient Licensee either.

*Performance grading:* While it is recognized that grading is a useful tool to help communicate the level of performance and compliance, the current use of the A-E grading system disproportionately represents the risk. In an academic situation a C grade (Below requirements and representing a moderate risk) is deemed a failure and hence unacceptable. But in review the nature of the risk, it does not translate a risk that represents a significant to health, safety or the environment. This grading system must be redefined, given that this grade can actually be assigned to issues surrounding <EQ, NORM, environmental, geological samples, or information outside the control of the Licensee. Also note the same grading system is applied to multiple parties which cover the scope of minimal to significant risk to individuals and the environment (i.e. typical university licence vs nuclear power /industrial licences).

*Standardized Language:* Care must be taken when applying standardized language; although technically correct it can misrepresent the facts and lead to confusion. For instance, in an inspection the results were reported as NSRD 36 (1)(a) "Not all nuclear substances could be accounted for during this inspection". The reality was the room was locked as it was unoccupied and therefor the presence of the radioactive materials could not be physically verified. Yet it can also be understood as the licensee either lost, or loss control of RAM. If standardized phrasing is being championed to provide clarity and an equal playing field – it can lead the reader to the wrong conclusion. Indeed the credibility of CNSC could be drawn into question as well as the results of the inspection.

*EQ, NORM, DU, natural uranium:* Both issues of performance and prescriptive regulatory oversight are engaged and must be reconsidered when applies to EQ, NORM, DU and natural uranium or other geological/environmental samples. The risk just does not present itself. This is not to say theoretical a scenario may arise which does not draw into question a re-evaluation of a risk. But that same risk also exists when the situation is present and CNSC is not licencing the RAM.

**Question 3: Are you aware of opportunities for the CNSC to reduce administrative burden, without compromising safety?**

CNSC may consider: make the submission of Annual Report on-line; propose method for dose assessment for non-NEW workers; and clarify that would we have to have workers who are involved in facility but not NEW's sign their own declaration.

CNSC may consider make administrative tasks like the ACR align better with other objectives, like compliance enforcement. For example, why not make some items from the desktop assessment (such as a waste disposed down the sewer) part of the ACR? The evidence demonstrates that the heavy administrative burden on research licences being in the past incommensurate with the risk has lead researchers to look and find alternative techniques to using radioactive material.

EQ and NORM are very problematic, confusing and are regulated in a fashion that is disproportional to the risk they represent. Definitions must be reviewed and reassessed. EQ is extremely confusing as it implies that material is exempt from CNSC licencing oversight but if you have a licence (which licences that specific radioisotopes) all licence conditions apply. So, two individual parties undertaking the same activities are deemed to represent the contrary risk (one no risk present, the other the same risk as all other of its activities that exceed the EQ values exponentially). NORM has a very specific definition within the CNSC regulations. Yet to everyone else outside of CNSC, NORM is specifically what the acronym stands for (naturally occurring radioactive material). CNSC definition pertaining to “associated with the development, production or use of nuclear energy” is required. Unless this is clearly articulated, someone not involved in nuclear energy does not have the capacity to interpret this. If all by-products of nuclear fission are to be captured by this, CNSC must state them in a clear fashion. Example: Cs-137 is well known in its application in medical devises and gauges, but it is not well known as a by-product of nuclear reactors and weapon testing. Does this mean that soils samples containing Cs-137 are actually to be classified as being “associated with the development, production or use of nuclear energy” or need to be tracked in association with nuclear weapons as the soil was associated with weapon testing in the 1950's and 60's? What about soil samples gained around the world and were associated with Chernobyl fall out? Depending upon the sample location the activity may be very low – but would still be caught in the definitions being applied?

Environmental samples need to be defined otherwise they will be caught into the regulated framework under EQ. The advances of detection equipment that environmental samples can easily be detected, to values of 1  $\mu$ Bq, these radioisotopes would therefor need to be tracked if the radioisotope was listed on a CNSC licence. Environmental samples are purchased for their radioisotope composition. They represent a challenge as they cannot be tracked in the standard fashion - that is to track by radioisotope, as it would lead to the erroneous conclusion that one sample is actually represented as 19 samples in the case of the Fangataufa. This has a ripple affect such that if the sample is >EQ, inspectors may wish to see each of the samples labelled and tracked for these specific radioisotope, which is practicable.

Depleted / Natural Uranium: Management of both these materials must be reviewed, especially in consideration of the applications being applied. Natural uranium is often associated with earth sciences, and used in very limited activities and in the risk it poses. Indeed managing this has been under mind by CNSC current management approach with chemicals such as uranyl nitrate being allowed to be shipped /sold to Canada without a CNSC licence and in a fashion that does not facilitate translating use practices to management of the material. Nor is disposal at all easily facilitated as it is regulated but hard to quantify because it was not regulated to enter Canada. As well natural ore samples cannot be disposed of as it is not feasible to obtain a full spectrum analysis and quantification of all radioisotopes contained within as it would involve the destruction of the ore sample thus negating scientific value.

Uranium Progeny: if this is a regulatory reference CNSC must list the progeny it is actually captured by this term, to ensure clarity.

**Question 4: Is the CNSC making effective use of existing standards? Are there additional opportunities for the CNSC to reference standards in its regulations?**

The CNSC does a good job in incorporating many standards into their regulations. However, CNSC needs to ensure that the most recent standards are referenced. There is definitely an opportunity to further incorporate industry standards, such as CSA, particularly in the area of designs of new radiation areas and facilities.

Standards may be of value but as the Licensee may not have easy knowledge or access to the ones used by CNSC. If the standards are to be referenced, it is recommended that CNSC demonstrates transparency by posting/linking them on their sites. This would allow a proactive approach by the Licensee rather than reactionary. By referencing them prior to submitting requests to CNSC and adopting them where applicable the Licensee could demonstrate due diligence, anticipating need and refining program controls.

**Question 5: Is the relationship between CNSC regulations and the obligations set forth in licences clear and straightforward? Would it be clearer to prescribe some standard licence conditions in regulations rather than in licences? If so, which ones?**

It would be clearer to prescribe some standard licence conditions in regulations rather than in licences, such as decommissioning criteria.

Standardizing Licence should continue to reside in a licence. Inherently if the condition was deemed significant and not anticipated to change it would be incorporated in a regulation already. Given how quickly the use applications of RAM change, advances in detection and environments in which it is used change, CNSC must be empowered to change the condition in a responsive way. This is not accomplished if the condition is embedded in a regulation. As well communicating changes are by far more easily achieved with changes to a licence than is

continually being revised and updated, than trying to ensure all Licensees and everyone authorized under that Licence is informed of regulatory change. Example: Currently a 3 MeV accelerators used in ultra-sensitive mass spectrometry and measuring milli and micro Bq activities are classified as a CLASS II NUCLEAR Facility (note it does not produce RAM but measures ratios of atoms against each other). This was not the intent of the regulation yet CNSC nor the Licensee has an option but to comply with the regulation. (Note – a nomenclature needs to be developed and communicated so that if a change in the licence is requested and the returned licence includes more changes to the licence than requested (ie CNSC updates a Licence condition) the Licensee should not have to compare both licences plus conditions word by word. Because we both know each word and punctuation can change the meaning of the phrase.

**Question 6: Are there opportunities where the CNSC can provide greater assistance to applicants and licensees understand what they must do to comply with the CNSC's regulatory requirements?**

Yes, there are certainly opportunities where the CNSC can provide greater assistance for licensees to understand the requirements. Certain divisions already do a fantastic job of this (e.g. Class II). Investing in quality CNSC staff keeps the lines of communication open regarding changes to licences and new regulatory documents.

Communication is more than phone calls and emails. Licence administrators should be encourage and required to visit the licence sites along with the inspectors and the site RSO to better understand what is influencing each party. Web cast exploring specific topics are a great way to communicate especially if there is phone in capacity or advance submissions for clarification.

Participation in CRPA symposia should continue and are very well appreciated.