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Radiation Safety Program

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Consultations
Canadian Nuclear Safety Commission
P.O. Box 1046, Station B
280 Slater Street
Ottawa, ON. K1P 5S9

Re: Invitation to comment on draft REGDOC 2.7.1, Radiation Protection

Dear Sir/Madame,

Thank you for the opportunity to comment on draft REGDOC 2.7.1, Radiation Protection. We have comments related to three sections to submit for consideration:

Appendix C and Section 25.2 suggest the direct measurement of standard sources when determining contamination meter detection efficiencies. In contrast, we have previously measured droplet-sized non-traceable open sources with activities determined by equipment that was calibrated using a standard source. We have not typically measured standard sources directly with contamination meters because of the additional cost of purchasing these differently shaped sources. If the CNSC suggests that calibration be performed by directly measuring traceable sources, it would be very helpful if the following information could be included in the REGDOC:

- For each radionuclide listed in the NSRD licence appendix "Classes of Radionuclides," specify the recommended standard source radionuclide to be measured by the licensee as an analogue.
- The mathematical formula to be used to calculate a meter's detection efficiency for open source medical radionuclides based on the meter's detection efficiency for the recommended standard sources.
- How (or if) the formula provided in C.12 should be modified to take into account the fact that the radioactive emissions from the standard source are not identical to those of open source medical radionuclides because they are different radionuclides.
- How (or if) the particle surface emission rate of the standard source ought to be used when determining detection efficiency.

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The CNSC should consider endorsing the use of droplet-sized open sources when determining the efficiency of contamination meters, provided that the activity has been measured using equipment that was itself calibrated using a standard source. If it should choose to do so, the CNSC should indicate how (or if) the licensee should modify the formula provided in C.12 to account for propagation of error.

Appendix D.6 appears to require annual calibration for EPDs and direct reading "pen" dosimeters, however it is unclear whether such calibration is required if these dosimeters are not used for a worker's exposure records. For instance, if a facility uses OSLDs from National Dosimetry Service, but for day-to-day operations also equips each worker (NEW) with EPDs and pen dosimeters, does REGDOC-2.7.1 require that those supplementary dosimeters be calibrated annually even though they are not used for the dose of record? If so, we would like to suggest that annual verification with a "dosimeter-checker," such as the Direct Reading Dosimeter Checker from Arrow-Tech, should be sufficient for pen dosimeter calibration (https://www.dosimeter.com/dosimeter-accessories/dc-drd6hole-direct-reading-dosimeter-checker/).

Regarding Section 11, Accommodations for Breastfeeding NEWs, it would be most helpful if the CNSC would publish either an approved method of performing risk assessment or a list of relatively low risk activities (such as Diagnostic-only Nuclear Medicine) that licensees could use for planning purposes. Presumably, the amended *Radiation Protection Regulations* will oblige licensees to document and store declarations and risk assessments for a specified period. While there will be an administrative burden associated in making accommodations for breastfeeding NEWs, it should not be more work than what's currently done for pregnant NEWs.

Sincerely,

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