



Minutes of the Canadian Nuclear Safety
Commission (CNSC) Meeting held on
November 5, 2020

Minutes of the Canadian Nuclear Safety Commission (CNSC) meeting held virtually on November 5, 2020 beginning at 9:00 a.m. The meeting was webcast live via the CNSC website, and video archives are available on the CNSC's website. These minutes reflect both the public meeting itself and the Commission's decision made as a result of the meeting.

Present:

R. Velshi, President
T. Berube
S. Demeter
M. Lacroix
S. McKinnon

M. Leblanc, Secretary
L. Thiele, Senior General Counsel
W. Khan and C. Moreau, Recording Secretaries

CNSC staff advisors were: K. Murthy, S. Racine, N. Greencorn, R. Jammal, K. Owen-Whitred, M. Davey, J. Schmidt, A. Alwani, Y. Picard, A. Bouchard, M. Laflamme, M. Broeders, C. Purvis, A. Viktorov, L. Casterton, G. Lamarre, J. Churchill, C. Ducros and L. Hunter

Other contributors were:

- Mississauga Metals and Alloys: D. Sharpe
- TRIUMF: J. Bagger
- Ontario Power Generation Inc.: R. Geofroy and J. Vecchiarelli
- Canadian Nuclear Laboratories: P. Boyle, D. Wood and S. Cotnam
- Power Workers Union: R. Stephenson
- Thomas Jefferson University: M. Huestis

Constitution

1. With the notice of meeting Commission Member Document (CMD) [20-M31](#) having been properly given and all permanent Commission members being present, the meeting was declared to be properly constituted.

2. Since the Commission meeting held September 16, 2020, [CMD 20-M23](#), [CMD 20-M32 to CMD 20-M35](#) and [CMD 20-M37 to CMD 20-M38](#) were distributed to members. These documents are further detailed in Appendix A of these minutes.

Adoption of the Agenda

3. The agenda, [CMD 20-M32](#), was adopted as presented.

Chair and Secretary

4. The President chaired the meeting of the Commission, assisted by M. Leblanc, Secretary, and C. Moreau and W. Khan, Recording Secretaries.

Minutes of the CNSC Meeting Held September 16, 2020

5. The Commission approved the [minutes](#) of the September 16, 2020 Commission meeting as presented in CMD 20-M8.

STATUS REPORT ON POWER REACTORS

6. With reference to [CMD 20-M34](#), which includes the Status Report on Power Reactors, CNSC staff presented the following updates:
 - Pickering Nuclear Generating Station (NGS) Unit 1 was at 91.5% of full power (FP) due to a fueling deficit.
 - Pickering NGS Unit 5 was at 94% of FP a due to fueling deficit.
 - Pickering NGS Unit 8 was at 85% of FP due to the troubleshooting of a turbine governor valve.
 - Point Lepreau NGS was operating at 35% FP preparing for generator synchronization to the grid following a planned outage
7. Asked by the Commission for an update on the Potassium Iodide (KI) Pill Working Group, CNSC staff reported that, due to the COVID-19 pandemic, the focus of health authorities had shifted from the KI pill distribution project. The Commission acknowledged the reason for the lack of progress on this project but nevertheless encourages CNSC staff to move forward with this important project.

8. In regard to the availability of electricity in New Brunswick when the Point Lepreau NGS was in an outage, an NB Power representative stated that, to supplement New Brunswick's power requirements, a combination of in-province generation and purchase agreements with Quebec were available to NB Power. As such, there is no pressure to bring the reactor back online quickly, with safety always being the number one priority.
9. With regard to the Pickering NGS Unit 8 regional overpower detector being out of service, the OPG representative explained that the Pickering NGS Unit 8 has approximately 20 detectors. OPG's operating procedures and safety analysis for the Pickering NGS demonstrate that Unit 8 can operate safely with more than one detector being unavailable.
10. Asked for the reasons regarding Pickering's fuelling machine availability issues, the OPG representative reported that the unavailability of the fuelling machine was due to routine maintenance and that both fuelling machines were now fully available.

UPDATES ON ITEMS FROM PREVIOUS COMMISSION PROCEEDINGS

Update from CNSC staff on CancerCare Manitoba

11. Consideration of this matter was rescheduled to the [January 21, 2021](#) Commission proceeding so that additional information, requested by the Commission, could be addressed.

Update from CNSC staff on Mississauga Metals and Alloys (MM&A)

12. With reference to [CMD 20-M37](#), CNSC staff presented an update regarding MM&A's standing in respect of its cost recovery fees per Part 2 of the [Cost Recovery Fees Regulations](#) (CRFR). MM&A is located in Brantford, Ontario. MM&A holds a waste nuclear substance licence and was not in good standing in respect of cost recovery fees at the time of its last licence renewal. Pursuant to section 7 of the [Nuclear Safety and Control Act \(NSCA\)](#). The Commission exempted MM&A from the condition in paragraph 24(2)(c) to include the prescribed fee with its renewal application, so that a renewal decision could be made by the Designated Officer without the licensee being in good standing respecting its fees. The exemption did not exempt MM&A from paying the cost recovery fees but provided flexibility in the guise of a payment plan. MM&A was issued a two-year licence on May 1, 2019, with a licence condition that required MM&A to follow a payment plan in respect of its cost recovery fees. MM&A has not yet paid its final 2018-2019 fees

payment nor its fees for the current licence period. The presentation made at this Commission meeting satisfies the request made by the Commission for a status update on this matter.

13. Asked for information on the payment of its cost recovery fees, the MM&A representative stated that MM&A's business was improving with new contracts in place and that MM&A expected to soon finalize the reconstruction of its processing building, following a fire in 2017. This should allow MM&A to generate the revenues needed to pay its licensing fees.
14. In regard to MM&A's financial guarantee, CNSC staff stated that MM&A had provided a letter of credit to the CNSC and that the funds would be available for decommissioning of the facility, if required. MM&A is expected to provide a revised decommissioning plan this fiscal year with a revised cost estimate, and CNSC staff will review these to ensure that MM&A's financial guarantee is sufficient.
15. The Commission noted MM&A's apparent financial advantage of an expedited clean-up of the radioactive material present at its site and enquired for the reason of MM&A's delay. The MM&A representative agreed that it was in MM&A's interest to clean its facility as quickly as possible but that the reconstruction of the facility following the 2017 fire had taken longer than anticipated.
16. The Commission enquired about the next steps for this licensee. CNSC staff reported that MM&A needed to provide an application for a licence renewal and either pay its fees or apply to the Commission for an exemption from the application of the [CRFR](#). CNSC staff added that, should MM&A decide to resume processing its waste and start decommissioning or decontaminating the site, MM&A would also need to provide a detailed decommissioning plan.

Update from CNSC staff on COVID-19 cases at Canadian Nuclear Laboratories' (CNL) Chalk River Laboratories (CRL)

17. CNSC staff presented a verbal update regarding the COVID-19 cases at CNL CRL. CNSC staff reported that, on October 26, 2020, CNSC staff received notification that a positive case of COVID-19 was detected at the CRL campus. Subsequently, eight additional positive cases were confirmed, raising the total number of cases to nine. CNSC staff stated that CNL's immediate actions and additional precautionary measures were satisfactory.

18. CNL reported that it engaged an independent epidemiology firm to understand the pandemic risks in the adjacent communities and informed the public accordingly through three public notices. A CNL representative added that this outbreak was isolated to a select group of waste processing personnel, and that nuclear safety had not been compromised as a result of the outbreak.
19. In response to the Commission's enquiries on this COVID-19 outbreak at CRL, the following information was provided:
 - CNL's screening process has been effective throughout the pandemic.
 - During such outbreaks, CNL implements a staged approach to determine if the number of its on-site employees should be reduced.
 - No CNL employees have refused work due to the pandemic. CNL has a process in place to accommodate employees with pandemic-related concerns or sick family members.
 - CNL carries out assessments to verify its employees' adherence to COVID-19 related protocols. Thus far, CNL has seen 90% adherence to mask wearing.

INFORMATION ITEMS

Two-part Regulatory Oversight Report (ROR) on the *Use of Nuclear Substances in Canada:2019* and *Class IB Accelerator Facilities in Canada:2018-2019*

20. With reference to [CMD 20-M23](#), CNSC staff presented its two-part regulatory oversight report on the *Use of Nuclear Substances in Canada (2019)* and *Class IB Accelerator Facilities in Canada (2018-2019)*.
21. Part I of the ROR presented information on the regulatory oversight by CNSC of nuclear substances licensees in four sectors of activities: medical, industrial, commercial and research. They represent the vast majority of licensees and compliance monitoring - via inspections and other means - is conducted on a risk-informed basis. Part II of the ROR, which is presented biannually, focussed on two accelerator facilities in Canada.
22. Part II of the ROR focussed on the following information:
 - Compliance verification activities conducted by CNSC staff for the reporting years show that licensee performance is generally satisfactory, with some areas where increased monitoring is required to ensure licensees comply with regulatory requirements.

- Events and corrective actions reports were reviewed by CNSC staff and found adequate as findings have, for the most part been satisfactorily addressed.
 - Lost Time Injury rates at Class IB Accelerator Facilities remained acceptable and below the average for similar industrial facilities.
23. In addition, CNSC staff's presentation included the modified regulatory plans adapted by the Directorate of Nuclear Substances Regulation in response to the current COVID-19 pandemic.
24. The Commission notes that several changes were made to the ROR based on comments provided in regard to previous RORs and understands that a process is underway for a comprehensive review of these reports. It is also understood that interested persons will be consulted during this review. The Commission also notes that the Canadian Environmental Law Association (CELA) made several comments and suggestions regarding the content of the ROR and participation by third parties, and hopes that CELA will be an active participant in the review.
25. The Commission is of the view that the ROR was well crafted, easily readable and rightly focussed on compliance monitoring. The Commission recommends that executive summaries focus less on summarizing the general content of the ROR and more on the key oversight findings by CNSC staff on the level of compliance, areas of potential risk and the overall regulatory health of the sectors. To further improve readability, the Commission also requests that more graphs be used (and less text), and that graphs provide more detailed information or larger range of data.
26. Through the CNSC's Participant Funding Program (PFP), participant funding had been offered to assist Indigenous peoples, members of the public and stakeholders in reviewing the ROR and submitting comments, in writing, to the Commission. A Funding Review Committee (FRC) – independent of the CNSC – had recommended that up to \$5,000 in participant funding be provided to the Canadian Environmental Law Association (CELA) and it was granted.

Interventions

27. In [CMD 20-M23.1](#), CELA raised a number of issues and made eleven recommendations. Most of the recommendations were regarding the contents of the ROR and requested further information, rationale, explanations or links to certain documents. As stated above, the Commission hopes that CELA will participate in the ROR review process and that staff will, in

that context, consider CELA's recommendations. The Commission notes that it is satisfied with how several matters that were raised by CELA were addressed by CNSC staff in [CMD 20-M23.A](#).

28. The interventions from CELA and the Canadian Radiation Protection Association raised a number of issues where the Commission sought additional information:
- On the difference between an unannounced inspection and an announced inspection, CNSC staff submitted that the criteria for the scope of the inspection is predetermined regardless of the type of inspection and that, based on past experience, there is little deviation or difference in the outcome of an inspection based on whether it is announced or unannounced.
 - On whether CNSC staff anticipate an increase in non-compliances for medium risk licensees given CNSC staff's shift in priorities to higher risk licensees due to COVID-19, it was reported that because CNSC inspectors were not able to complete many of the planned on-site inspections in 2020, it is anticipated that there will be more planned inspections in 2021 to ensure adequate oversight is maintained.
 - On making RORs more accessible, CNSC staff provided information regarding the low level of interest from members of the public, based on the number of electronic views of the ROR on the CNSC website. To address accessibility issue, CNSC staff are looking at improving the content of RORs and their dissemination.
 - On why corrective actions implemented in the area of radiation protection were ineffective within the nuclear medicine sector, CNSC staff responded that the poorer performance in the medical sector was due to some licensees not following the requirements of their radiation protection program. CNSC staff submitted that the majority of the non-compliances were related to not complying with the thyroid monitoring provisions of [RD-58: Thyroid Screening for Radioiodine](#).¹
 - On licensee performance in the Radiation Protection (RP) safety and control area (SCA) and in light of the change to performance-based inspections focusing on licensees with below industry performance, it is anticipated that there will be a period of time before the improvements are observed. CNSC staff added that CNSC staff intend to better communicate RP requirements through a regulatory document under development that will provide

¹ Regulatory Document RD-58 Thyroid Screening for Radioiodine, CNSC, 2008

guidance on CNSC expectations (draft REGDOC-2.7.1, *Radiation Protection*).

General questions – Part I of the ROR on use of nuclear substances

29. On the issue of the majority of the non-compliances in the industrial sector being due to the improper use of portable or fixed gauges, CNSC staff submitted that a CNSC inspector order is more often issued in the industrial sector due to the immediate risk that is present and that other enforcement actions are available to bring a licensee back into compliance and are used based on risk.
30. The Commission requested details related to enforcement actions per licensee rather than per sector. CNSC staff submitted that the revised statistics would be provided to the Commission via a memo or by other means, as appropriate.
31. With respect to the design of the inspection program, the Commission noted that there was a change in priorities across different SCAs and enquired whether a standardized strategy could be developed. CNSC staff responded that although there is a baseline program, the overall inspection program is quite complex and does require verification and adjustments as required, on an annual basis.
32. Concerning the performance charts presented as part of CNSC staff's presentation, the Commission asked what the variability of the data was, given that the scope of the inspections varies year to year. CNSC staff will assess whether this information can be presented in future RORs.
33. Asked why the Montreal Neurological Institute (MNI) has an action level of 450 milliSievert (mSv) for an extremity dose while the regulatory dose limit is 500 mSv, CNSC staff provided the following information:
 - the 450 mSv action level was based on a monthly action level extrapolated over the year to measure whether the worker would exceed the action level if they continued to work in the same manner.
 - this methodology for calculating action levels was part of MNI's Commission approved licence.
 - CNSC staff is considering changing this methodology to prevent licensees from relaxing the action levels at the end of the year.

ACTION
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34. With respect to the International Nuclear Emergency Scale (INES) Level-2 event for the nuclear substance licensee, the Commission asked whether the licensee would be submitting a dose change request. CNSC staff responded that the licensee is currently in the process of submitting a dose change request.
35. The Commission commends CNSC staff for presenting two informative case studies. With respect to the case study on Iodine 131 (I-131), the Commission asked how CNSC staff promote compliance without prescribing requirements. CNSC staff responded that in the case of Isologic Innovative Radiopharmaceuticals Ltd., it is the licensee's responsibility to meet CNSC expectations and that CNSC staff had increased interactions with the licensee and shared experiences from other facilities in Canada to bring the licensee in compliance. CNSC staff added that this particular licensee provides unit-dose radiopharmaceuticals for Canadian patients and that special consideration was given to limit impact on patients.

General Question – Part II of the ROR on Class IB accelerator facilities

36. TRIUMF and Canadian Light Source Inc. (CLSI) were the subject of Part II of the ROR. With respect to the Carbon-11 (C-11) gas release event at TRIUMF, the Commission enquired as to what steps were taken as part of TRIUMF's public information and disclosure program to inform the public. A TRIUMF representative responded that there is a zero-emission threshold at TRIUMF and that all releases at TRIUMF are posted on its website. The TRIUMF representative further stated that TRIUMF hosts an open house on an annual basis to inform the public of its operation.
37. With respect to the "below expectation" rating for the Management System SCA at the Class IB Accelerator Facilities, CNSC staff provided the following information:
 - The licensees met the previous management system requirements which were a set of quality assurance principles.
 - CSA N286-12 Management system requirements for nuclear facilities was published in 2012 to include a broader range of licensees, including Class IB Accelerator Facilities.
 - CSA N286-12 requires licensees to have a management system for all activities and safety and control areas. This was a substantive change for the licensees as they were not previously required to implement N286.
 - The licensees did not meet the expectations of the 2012 update in a timely manner which resulted in the "below expectation" rating in the Management System SCA.

- The “below expectation” rating does not pose an immediate risk to health and safety of workers.
38. In relation to the “Below Expectation” rating given to TRIUMF and CLSI in the Management System SCA, CNSC staff reported that as long as the licensees continue to progress towards the agreed upon milestones, the rating would be changed to “Satisfactory” next year.
 39. The Commission requested details on how CNSC staff require Class IB Accelerator Facilities to implement new technologies given the nature of their aging facilities. CNSC staff responded that for licensees with existing facilities that are consistently below regulatory dose and release limits, it is a matter of CNSC staff requesting the licensee to conduct an analysis to show adherence to the ALARA (as low as reasonably achievable) principle. CNSC staff added that comparative studies between similar licensees is also beneficial as CNSC staff can point to similar programs with modern technology.
 40. Concerning the six event occurrences at CLSI and eleven at TRIUMF, CNSC staff confirmed that the seventeen event occurrences were all INES Level-0 events and were not radiological in nature.
 41. On the usefulness of RORs for the industry, representatives of TRIUMF and CLSI provided information on how the findings of the ROR are used amongst their staff members and the licensees as part of their continuous improvement processes.

Conclusion

42. The Commission expresses its appreciation to CNSC staff for this ROR and to the intervenors for their important contributions. The Commission notes that there is room to improve compliance in the nuclear substances sectors, and looks forward to seeing progress in these sectors in future RORs.

DECISION ITEMS – REGULATORY DOCUMENTS

REGDOC-2.2.4, *Fitness for Duty, Volume II: Managing Alcohol and Drug Use*, version 3

43. With reference to [CMD 20-M35.A](#), CNSC staff presented the regulatory document (REGDOC), REGDOC-2.2.4, *Fitness for Duty, Volume II: Managing Alcohol and Drug Use*, version 3 to the Commission for consideration and approval. Version 3 would

replace [version 2](#) which was approved by the Commission in 2017.

44. REGDOC-2.2.4, Volume II, version 3 sets out requirements and guidance for managing fitness for duty of workers in relation to alcohol and drug use and abuse at all high-security sites, as defined in the [Nuclear Security Regulations](#). The requirements and guidance in this document apply to workers holding safety-critical or safety-sensitive positions in these high-security sites. Safety-critical positions include control room operators and on-site nuclear response force members. Safety-sensitive positions include certified health physicists, nuclear security officers and emergency response teams.
45. When it was a draft, regulatory document REGDOC-2.2.4, *Fitness for Duty*, as it pertains to alcohol and drug testing, was first presented to the Commission in the context of the August 16-17, 2017 public meeting. This document included requirements and guidance for managing worker fitness for duty with respect to alcohol and drug use and abuse, in addition to medical, psychological and occupational fitness requirements. Following directions from the Commission, the proposed Volume II was split into two separate volumes: Volume II for alcohol and drug and Volume III on medical, psychological and occupational fitness. Volume I on worker fatigue was published in March 2017 and Volume III in September 2018. REGDOC-2.2.4, *Fitness for Duty, Volume II: Managing Alcohol and Drug Use* was approved on October 12, 2017 by the Commission and published in December 2017.
46. The requirements and guidance in REGDOC-2.2.4, Volume II apply with respect to pre-placement testing, reasonable grounds testing, post-incident testing, follow-up and return-to-duty testing, and random testing.
47. In October 2018, Canada legalized cannabis. In addition, in late 2018, CNSC staff received formal written requests from the affected licensees (i.e., NB Power, Ontario Power Generation, Bruce Power and Canadian Nuclear Laboratories) to revise REGDOC-2.2.4, Volume II to add oral fluid testing as an acceptable methodology for drug testing.
48. Licensees also proposed the use of urine based point of collection testing (POCT) in conjunction with oral fluid laboratory based testing for Tetrahydrocannabinol (THC) metabolites of cannabis. CNSC staff asked licensees to provide a formal submission detailing the precise modifications requested to the REGDOC; the scientific basis for the request; and a response to a set of clarifying questions provided by CNSC staff. The formal submission was provided on June 28, 2019.

49. The purpose of the amendments reflected in draft REGDOC-2.2.4, Volume II, version 3 is to add oral fluid testing to the already accepted methodologies for drug testing, to allow the use of POCT, and to make changes in response to the legalization of cannabis in Canada in 2018.
50. Regulatory documents play a key role in the framework of nuclear regulation by the CNSC. They explain to licensees and applicants what they must achieve in order to meet the requirements set out in the [Nuclear Safety and Control Act](#) (NSCA) and the regulations made under the NSCA. If these requirements and associated guidance are not being followed, the licensees should explain how the alternate approach they have chosen still meets regulatory requirements or expectations. When included in the licensing basis, REGDOC requirements are mandatory and must be met to obtain (or renew) a licence or to operate a nuclear facility.
51. Drug and alcohol testing is an important component of managing worker fitness for duty. Several provisions of the regulations made under the NSCA deal with worker fitness for duty, including the [General Nuclear Safety and Control Regulations](#), the [Class I Nuclear Facilities Regulations](#) and the [Nuclear Security Regulations](#). The International Atomic Energy Agency (IAEA) has also identified the need for nuclear facilities to address worker fitness for duty. This is embedded in two safety guidance documents ([GSR Part 1 \(rev.1\)](#) and [NS-R-2](#)) and 3 guides ([GS-G-1.2](#), [GS-G-1.3](#) and [NS-G-2.4](#)).
52. The public consultation for REGDOC-2.2.4, Volume II, version 3 focused on the proposed changes. During the consultation period, from March 12 to May 30, 2020, CNSC staff received 57 distinct comments from 7 respondents:
 - Bruce Power
 - Canadian Nuclear Laboratories
 - Draeger Safety Canada Ltd.
 - New Brunswick Power Corporation
 - Ontario Power Generation
 - Power Workers' Union
 - The Society of United Professionals
53. The feedback on comments period was from June 19 to July 4, 2020, with an additional 3 comments from 2 reviews being received.
54. The licensees required to implement the provisions of the REGDOC stated on the record their satisfaction with the consultation process and are supportive of the amendments proposed by CNSC staff. Licensees requested that more

flexibility be built into the REGDOC to authorize the use of emerging testing technologies for testing in an expeditious manner. The Commission addresses this request in paragraph 70 of these minutes.

55. The Power Workers' Union (PWU) appreciated the opportunity to comment during the consultation process but reported that the PWU was concerned about the workplace consequences that a positive test could generate even in the absence of objective observation of workplace impairment. PWU is also of the view that urine testing has no probative value with respect to current impairment of a worker.
56. Key issues raised during public consultation were about the appropriate cut-off levels for screening and confirmation for testing of cannabis and other drugs; the reliability of POCT devices; testing options; and the availability of laboratories accredited to conduct oral fluid testing. The Commission is satisfied with the comprehensive two-step consultation conducted by CNSC staff on the proposed amendments, the changes that were made following the consultation and how the key issues raised were thoroughly addressed. The Commission notes that it did not invite interventions for its consideration of the amendments to the REGDOC at the public meeting, as it is the practice for REGDOCs that the consultation is done by CNSC staff well in advance of its presentation to the Commission.

Cut-off levels for cannabis

57. A key issue is the cut-off levels for cannabis. Initially, CNSC staff proposed to set the limits for testing cannabis at 5 ng/mL for screening and 2 ng/mL for confirmation. Industry proposed 10 ng/mL for both screening and confirmation and the unions, notwithstanding their opposition to alcohol and drug testing, between 15 and 25 ng/mL for the screening level and 5 ng/mL for the confirmation level. In the end, CNSC staff proposed a screening cut-off level of 10 ng/mL and a confirmation cut-off level of 5 ng/mL.
58. CNSC staff retained the services of Professor Huestis, an expert in the field of drug and alcohol testing, to assist in identifying the appropriate cut-off levels. On the difference in the level of impairment between 2 ng of cannabinoids per mL of blood versus 10 ng/mL, Professor Huestis explained that impairment was affected by different factors such as the route of administration (e.g., smoking, vaporization or edible) and the experience and tolerance of the user. Professor Huestis explained

that research on chronic frequent users has shown the presence of psychomotor effects as long as three weeks after last use.

59. On the cut-off levels proposed by CNSC staff, Professor Huestis indicated that the screening levels of 10 ng/mL for screening and 5 ng/mL for confirmation is appropriate. Based on the evidence on the record, including the expertise provided by Professor Huestis, the Commission is satisfied that the proposed cut-off levels are appropriate.

Point of collection testing (POCT)

60. During consultation, the affected licensees and unions raised concerns with the proposed POCT. Industry requested that POCT not be used for reasonable grounds testing and the unions raised concerns with the use, training and reliability of POCT. In the view of the Commission, the proposed version 3 of REGDOC-2.2.4 addresses many of these concerns. That is, POCT would not be used for reasonable grounds testing, and would be limited for possible use in random or post-incident testing. Training requirements already set out for drug testing would also apply to POCT. On the reliability of POCT devices and to provide a means to evaluate the performance of the POCT devices and the collection techniques of the collector, the REGDOC was modified to require that a minimum of 5% of negative POCT results be anonymously tested in an accredited laboratory against the same type of biological samples.
61. One issue with respect to POCT is whether there are mechanisms in place to maintain a valid chain of custody such that samples could be accurately traced back to the right individual. CNSC staff indicated that standard protocols were in place for POCT as well as laboratory testing and that REGDOC-2.2.4, Volume II, version 3 required licensees to have competent collectors on staff or to hire competent collectors through a third-party provider. CNSC staff stated that POCT non-negative results would always be sent to the laboratory for confirmation. Based on the evidence on the record, including the expertise provided by Dr. Huestis, the Commission is satisfied that POCT is an appropriate method of testing for random and post-incident testing.

Testing options

62. The Commission asked whether oral fluid testing was comparable in terms of results and in terms of false negatives to the other testing methods already approved in REGDOC-2.2.4, Volume II, version 2. Professor Huestis reported that laboratory testing has identical safeguards and performance, using

immunology for screening and mass spectrometry for confirmation. Professor Huestis added that POCT was not as accurate as laboratory testing due to the use of a hand-held device with less sensitivity and specificity, and that results needed to be confirmed by laboratory testing.

63. On the apparent lack of correlation between the measured drug concentration and the individual's impairment, CNSC staff reported that research showed that oral fluid testing was testing a similar window to acute impairment and was providing a good indication of the likelihood of acute impairment to fitness for duty. CNSC staff added that standardized field assessments, including supervisory awareness and shift turnover with one-to-one dialogue, were also a requirement of REGDOC-2.2.4, Volume II, version 3.
64. On the potential of adulteration of fluid testing, Professor Huestis explained that there was a greater possibility for adulteration of urine samples because very few urine sample collections were observed as opposed to all oral testing samples. The Commission is satisfied with the information provided regarding the validity of oral fluid testing and POCT, and amends the REGDOC to add these to the other already approved testing methods.

Limited availability of accredited laboratory

65. Noting that only one laboratory was requesting accreditation in Canada to perform oral fluid testing, the Commission enquired whether there was any anxiety in the nuclear industry around the economic and accessibility impacts of that monopoly. The Chief Regulatory Officer for CNL, in his capacity as Chair of the industry steering committee on the implementation of REGDOC-2.2.4, Volume II, indicated that licensees were not overly concerned about having only one laboratory and that the different licensees aligned through their supply chain to select the same tester as an industry. The Commission is satisfied with the information provided.

Implementation

66. REGDOC-2.2.4, Volume II, version 3 will form part of the licensing basis for high-security sites and will be incorporated into the licence conditions handbook (LCH) for each applicable licensee. Affected licensees were previously asked to perform a gap analysis and provide the CNSC with an implementation plan upon publication of version 2, in December 2017. While affected licensees stated that some testing requirements were already in place, they requested that the full implementation of

requirements be deferred until after the finalization of the proposed amended version so that all the testing options are available.

67. Licensees committed to the implementation of the entire REGDOC 2.2.4, Volume II, version 3 within six months of being approved and published, with the exception of random testing which is to be implemented within 12 months of the approval of version 3 of this REGDOC.

Decision on REGDOC-2.2.4 Volume II, version 3

68. The Commission approves the proposed amendments set out in REGDOC-2.2.4, *Fitness for Duty, Volume II: Managing Alcohol and Drug Use, version 3* for publication and use, including oral fluid testing and point of collection testing. The effective date for REGDOC-2.2.4, *Fitness for Duty, Volume II: Managing Alcohol and Drug Use, version 3* will be January 22, 2021.
69. On the licensees' request for flexibility in the REGDOC to address new testing methodology expeditiously, the Commission is not satisfied that there is merit in making such a change to the text of the regulatory document. Such documents are evergreen, and may be updated by the Commission as is called for, as it is doing with this decision. As and when advances and changes to the methodologies at issue develop, the Commission is confident that both the licensees and CNSC staff will bring forward proposals for change, for the Commission's consideration.

Closure of the Public Meeting

70. The public meeting closed at 3:32 P.M. The Commission convened for a closed session to consider the matters raised for its decision. These minutes reflect both the public meeting itself and the Commission's decision taken as a result of the meeting.

**Moreau,
Charles**

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Recording Secretary

**Khan,
Waleed**

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Recording Secretary

**Leblanc,
Marc**

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Secretary

January 19, 2021

Date

January 19, 2021

Date

January 19, 2021

Date

APPENDIX A

CMD	Date	e-Docs No.
20-M32	2020-10-22	6358950
Agenda of the Meeting of the Canadian Nuclear Safety Commission (CNSC) to be held remotely on Thursday, November 5, 2020		
20-M33	2021-01-07	6410527
Approval of the Minutes of Commission Meeting held on September 16, 2020		
20-M38	2020-10-13	6405234
<p>Updates on items from previous Commission proceedings</p> <p>Update from Staff on CancerCare Manitoba</p> <p>Written submission from CNSC Staff</p>		
20-M37	2020-10-28	6407085
<p>Updates on items from previous Commission proceedings</p> <p>Update from CNSC Staff on Mississauga Metals and Alloys</p> <p>Written submission from CNSC Staff</p>		
20-M23	2020-09-01	6378891
<p>Information Item</p> <p>Regulatory Oversight Report on the Use of Nuclear Substances in Canada: 2019 and Class IB Accelerators in Canada: 2018 and 2019</p> <p>Submission from CNSC Staff</p>		
20-M23.A	2020-11-05	6411025
<p>Information Item</p> <p>Regulatory Oversight Report on the Use of Nuclear Substances in Canada: 2019 and Class IB Accelerators in Canada: 2018 and 2019</p> <p>Presentation from CNSC Staff</p>		

20-M23.1	2020-10-13	6399342
<p>Information Item</p> <p>Regulatory Oversight Report on the Use of Nuclear Substances in Canada: 2019 and Class IB Accelerators in Canada: 2018 and 2019</p> <p>Written submission from the Canadian Environmental Law Association</p>		
20-M23.2	2020-09-28	6389252
<p>Information Item</p> <p>Regulatory Oversight Report on the Use of Nuclear Substances in Canada: 2019 and Class IB Accelerators in Canada: 2018 and 2019</p> <p>Written submission from the Canadian Radiation Protection Association</p>		
20-M34	2020-10-28	6410846
<p>Status Report</p> <p>Status Report on Power Reactors</p> <p>Submission from CNSC Staff</p>		
20-M35	2020-10-29	6399474
<p>Decision Item</p> <p>REGDOC-2.2.4, Fitness for Duty, Volume II: Managing Alcohol and Drug Use, version 3</p> <p>Submission from CNSC Staff</p>		
20-M35.A	2020-11-05	6410663
<p>Decision Item</p> <p>REGDOC-2.2.4, Fitness for Duty, Volume II: Managing Alcohol and Drug Use, version 3</p> <p>Presentation from CNSC Staff</p>		