Minutes of the Canadian Nuclear Safety Commission (CNSC) Meeting held on March 2, 2023

March 2, 2023

Minutes of the Canadian Nuclear Safety Commission (CNSC) meeting held Wednesday, March 2, 2023, starting at 9:00 a.m. EST. The public portion of the meeting was held virtually and webcast live via the CNSC website, and video archives are available on the CNSC website.

Present:

R. Velshi, President
T. Berube
S. Demeter
R. Kahgee
M. Lacroix
V. Remenda

D. Saumure, Registrar
L. Thiele, Senior General Counsel
M. Young, Recording Secretary

CNSC staff advisors were: A. Viktorov, L. Casterton, K. Murthy, S. Thompson, P. Elder, E. Lemoine, L. James, N. St Amant and S. Jovanovic

Other contributors were:

- Ontario Power Generation (OPG): S. Gregoris
- Bruce Power: M. Burton

Constitution

1. With the notice of meeting Commission member document (CMD) 23-M9 having been properly given and all Commission members being present,[1] the meeting was declared to be properly constituted.

2. For the meeting, documents CMD 23-M8 and CMD 23-M11 to CMD 23-M16, were distributed to members. These documents are further detailed in Appendix A of these minutes.

Adoption of the Agenda

3. The revised agenda, CMD 23-M10.A, was adopted as presented.

[1] As she had been appointed to the Alberta Provincial Court, Commission member Indra Maharaj confirmed by letter dated February 13, 2023 her resignation from the Commission.

e-Doc 7001943 (Word)
e-Doc 7021459 (PDF)

Chair and Registrar

4. The President chaired the meeting of the Commission, assisted by D. Saumure, Commission Registrar.

Minutes of the CNSC Meetings Held December 15 and 16, 2022 and January 25, 2023

5. The Commission noted that the minutes of the December 15 and 16, 2022 and January 25, 2023 Commission meetings were approved secretarially in advance of the meeting.

STATUS REPORT ON POWER REACTORS

6. With reference to CMD 23-M13, CNSC staff presented the following additional updates:

   - On March 1, Bruce Power shut down Bruce Nuclear Generating Station (NGS) Unit 3 to begin the major component replacement project[2]
   - On February 20, Bruce Power shut down Bruce NGS Unit 4 for a forced outage to repair a leak from the heat transport system
   - On February 19, Pickering NGS Unit 5 entered a planned outage to repair air conditioning units
   - On February 21, Ontario Power Generation Inc. (OPG) reported that the Power Workers' Union (PWU) was in a legal strike position at the Darlington NGS and Pickering NGS. CNSC staff added that, following new direction from the Province of Ontario on February 23, OPG and the PWU were continuing negotiations.

7. With respect to the ongoing negotiations between OPG and the PWU, an OPG representative informed the Commission about the timelines for negotiation and noted that there would be an additional 21-days' notice for a strike to take effect. The OPG representative confirmed that OPG would have contingency plans in place in the event of a strike. The Commission asked about the status of the PWU with other NGS licensees, Bruce Power and New Brunswick Power Corporation. CNSC staff

[2] The Bruce Power major component replacement project began in January 2020 and focuses on the replacement of key reactor components in Units 3-8, including steam generators, pressure tubes, calandria tubes and feeder tubes.

responded that the PWU has separate collective agreements with each licensee organization.

8. The Commission asked CNSC staff to provide additional information concerning the Potassium Iodide (KI) Pill Working Group Update included under the Pickering section of CMD 23-M13. CNSC staff discussed the establishment of the KI Pill Working Group, and the ongoing consultation and engagement efforts being carried out on its Phase II objectives. CNSC staff noted that Emergency Management Ontario was in the process of revising Ontario's Provincial Nuclear Emergency Response Plan (PNERP), which would include additional consultation in the spring of 2023. CNSC staff added that it was expected that the revised PNERP would then be submitted to the Province of Ontario for approval and take effect by the end of 2023.

9. The Commission sought additional insights into the Bruce Unit 4 outage to repair a leak in the heat transport system. A representative from Bruce Power responded that the leak was from an instrument line, and that the leak rate had increased from 40 kilograms per hour (kg/h) to 90 kg/h before the outage. The Bruce Power representative noted that the leak limit for the heat transport system is 100 kg/h. With respect to comparisons with the recent leak at the Point Lepreau NGS[3], the Bruce Power representative stated that the cause of the leak – the cable fretting (rubbing) against equipment – was a different situation.[4] The Bruce Power representative added that, although not a safety concern, such leaks are an ongoing issue that Bruce Power actively monitors. The Bruce Power representative noted that Unit 4 was expected to be returned to service the coming weekend.

UPDATES ON ITEMS FROM PREVIOUS COMMISSION PROCEEDINGS

Update on Canada's Participation at the 7th Review Meeting of the Joint Convention on the Safety of Spent Fuel Management and on the Safety of Radioactive Waste Management (CMD 22-M40, November 2, 2022 Commission meeting)

10. Regarding CMD 23-M14, which provided an overview and comparison of waste generated at Canadian nuclear power plants[5] compared to other member states of the *Joint Convention*

[3] The leak at the Point Lepreau NGS was discussed at the December 2022 and January 2023 Commission meetings
[4] As reported at the January 2023 Commission meeting, the cause of the leak at the Point Lepreau NGS was the worsening of an existing crack caused by high cycle fatigue.
[5] Nuclear power plants in Canada use Canada Deuterium Uranium (CANDU) reactors

on the Safety of Spent Fuel Management and on the Safety of Radioactive Waste Management, the Commission asked CNSC staff about whether it could compare different reactor technologies on a "waste generated per kilowatt electric[6]" basis. CNSC staff responded that such a comparison would be difficult given the number of variables, including the policies and practices of different countries in which different reactor types are operated. As an example, CNSC staff noted that such a comparison would have to account for whether the fuel is reprocessed; other waste processing practices, such as minimization; as well as waste by-products from the complete fuel cycle, such as from enrichment.

11. CNSC staff added that, simply from a volume of used fuel perspective, CANDU reactors produce more waste than other reactor designs. The Commission acknowledged that the comparison was not straightforward, and appreciated the information submitted by CNSC staff.

INFORMATION ITEM

Information on how the CNSC responds to reported events involving lost, stolen or found sealed sources and radiation devices

12. In light of a recent event in Australia[7], where a sealed source was lost during transport and later recovered, CNSC staff presented information on how the CNSC responds to reported events involving lost, stolen or found sealed sources and radiation devices (CMD 23-M15). The CMD covers measures in place, including the following:

    - reporting requirements;
    - incident tracking;
    - inventory management; and
    - follow-up with other regulators.

13. CNSC staff noted one correction to the information in CMD 23-M15, that a cobalt-60 source lost and recovered in 2018 was 1.85 gigabecquerels, rather than 18.5 gigabecquerels.

[6] "Kilowatts (or megawatts) electric" refers to the actual electric power generated by the nuclear generating station.
[7] CMD 23-M15 refers to an article from "The Guardian", published on January 30, 2023.

14. The Commission noted instances where sealed sources have been removed from, or fallen out of, gauges[8] and asked about the CNSC's regulatory oversight of the design of such equipment. CNSC staff responded that the CNSC has a certification process for equipment, as well as for packages[9]. CNSC staff noted that the CNSC's role is not to be confused with that of a designer of equipment or packages. As such, although CNSC staff may engage in detailed technical and regulatory discussions with proponents seeking certification, CNSC staff does not make recommendations on the designs.

15. The Commission asked CNSC staff to clarify the number of sealed source categories, and confirm whether any Category 1, 2 or 3 sealed sources have been lost in Canada. CNSC staff responded that, according to the International Atomic Energy Agency, there are 5 categories of sealed source, with Category 1 being the highest risk[10]. CNSC staff stated that there have been no unrecovered Category 1, 2 or 3 sources lost in Canada.

16. The Commission commented that a plain-language summary of the information provided by CNSC staff would be useful for the public and Indigenous Nations and communities. CNSC staff stated that the CNSC website contains information on lost or stolen sources[11]. The Commission reiterated the importance of clear, accessible information.

17. The Commission found CNSC staff's submission to be informative and appreciated the information provided by CNSC staff in response to the Commission's questions.

DECISION ITEM

Presentation from CNSC Staff on Designating Analysts under the *Nuclear Safety and Control Act* (NSCA)

18. With reference to CMD 23-M8 and 23-M8.A, CNSC staff presented recommendations to the Commission, proposing that the Commission exercise its authority with respect to the designation of analysts pursuant to the *Nuclear Safety and Control Act*[12] (NSCA). Section 28 of the NSCA provides that

[8] Portable gauges are used in industries such as agriculture, construction and civil engineering to measure moisture and compaction levels in soil and asphalt density in paving mixes. Information on portable gauges is on the CNSC Website.
[9] CNSC staff presented an overview of its certification process at the November 2022 Commission meeting, CMD 22-M29.
[10] Information from the International Atomic Energy Agency on sealed sources can be found on its website.
[11] CNSC Reports on Lost or Stolen Sealed Sources and Radiation Devices
[12] Statutes of Canada (S.C.) 1997, c. 9.

"The Commission may designate as an analyst for the purposes of this Act any person whom the Commission considers qualified"; and paragraph 37(2)(e) provides that the Commission may authorize a designated officer (DO) to "designate any person whom the designated officer considers qualified as an analyst under section 28 […]".

19. CNSC staff recommended that the Commission:

- approve the designated analyst qualifications presented in CMD 23-M8; and
- authorize the following DOs to designate any person whom the DO considers qualified as an analyst under section 28 of the NSCA:
  - the Vice-President (VP) of the Technical Support Branch (TSB) and Chief Science Officer (CSO), and
  - the Director General (DG) of the Directorate of Environmental and Radiation Protection and Assessment (DERPA)

CNSC staff noted that this approach is consistent with the CNSC's approach for designating inspectors under section 29 of the NSCA.

20. In its presentation, CNSC staff provided an overview of the work that it conducts at the CNSC Laboratory[13], which supports the CNSC by providing sample analysis and radiation instrument calibration services. CNSC staff explained that the analytical services it provides include sample analysis for:

- compliance verification activities;
- environmental monitoring; and
- safeguards and nuclear forensics material characterization of various sample types.

21. CNSC staff submitted that designated analysts would be authorized to certify analysis results that would be admissible in Court as evidence without the Court having to undertake a process to recognize the expert witness status of the analyst. CNSC staff noted that a designated analyst is presumed qualified by virtue of the designation, and that without the designation, such a certificate cannot be issued. CNSC staff added that certification of laboratory results would further demonstrate to the Commission, as well as Indigenous Nations and communities, members of the public, and stakeholders, that qualified CNSC staff performed the sample analysis and confirmed the results.

[13] Paragraph 21(1)(d) of the NSCA provides that "The Commission may, in order to attain its objects, establish and maintain offices and laboratories."

22. CNSC staff proposed the following 2 CNSC analyst positions for designation:

- Chief Analyst
- Senior Analyst

As outlined in section 2.1 of CMD 23-M8, CNSC staff proposed that an individual must have the following qualifications to be designated as an analyst under Section 28 of the NSCA:

(a) Master's degree in science related to the work to be carried out, and
(b) training and experience, sufficient to perform the duties of the position:

(i) on-the-job training relevant to the duties of an analyst
(ii) practical experience related to the work to be performed.

CNSC staff noted that the proposed qualifications are currently required for the Chief Analyst and Senior Analyst positions. CNSC staff explained that the qualifications are verified at the time of hire, and that anyone in those positions must meet the minimum requirements.

23. CNSC staff also submitted national benchmarking with similar positions, including under the *Cannabis Act*[14] and the *Controlled Drugs and Substances Act*[15], as well as international benchmarking with the United Nations Office of Drugs and Crime, and the Federal Bureau of Investigation in the United States. CNSC staff's benchmarking identified that the proposed qualifications are aligned with those of other jurisdictions.

24. With respect to implementation, CNSC staff submitted that, should the Commission agree to CNSC staff's recommendations, the aforementioned DOs would then have the authority to designate the 2 proposed analysts. CNSC staff noted that it would require a small administrative effort to implement and maintain the designations. CNSC staff added that implementation was expected to be completed within the calendar year.

25. The Commission asked for more information on how a Court would proceed if there were no designated analyst. CNSC staff responded that the CNSC analyst would have to be called to a proceeding to establish their qualifications. CNSC staff noted that such a process could be time-intensive and would take away from the analyst's availability to work in the laboratory.

[14] S.C. 2018, c. 16
[15] S.C. 1996, c. 19

26. CNSC staff added that, with recent developments in technology and nuclear forensics, it was likely that the CNSC would become an expert resource for Canadian law enforcement, such as the Royal Canadian Mounted Police (RCMP). CNSC staff's presentation included an example where the CNSC supported the Canada Border Services Agency in 2018. CNSC staff highlighted this role as a key reason for bringing this matter to the Commission at this time.

27. The Commission, noting that the current incumbents of the proposed designated analyst positions have doctorates, asked why the proposed qualifications required but a master's degree. CNSC staff responded that the work descriptions for those positions state that while a doctorate is preferred, the minimum requirement is a master's degree.

28. The Commission asked whether a Court would question the CNSC's qualification or certification process. CNSC staff responded that the designation would establish that the designated analyst is qualified according to the Commission. The Senior General Counsel confirmed that a Court would be satisfied with the designation under the NSCA.

29. The Commission took note of the information presented regarding nuclear forensics and requested that CNSC staff make a future presentation on this subject. The Commission also expressed an interest in touring the CNSC laboratory.

ACTION
by
March 2024

30. The Commission noted that CNSC staff was pursuing accreditation to ISO/IEC 17025 from the Standards Council of Canada (SCC) for the CNSC laboratory to demonstrate that it is operated competently, according to world-recognized standards and generates valid, scientifically defensible results. Asked about the timeframe for the accreditation process, CNSC staff responded that the laboratory would be assessed in June 2023.

31. The Commission questioned the timeframe for implementation, suggesting that it need not take until the end of the calendar year. CNSC staff concurred and reiterated the steps that would be taken following the Commission's decision.

32. After considering the recommendations submitted by CNSC staff, and in accordance with sections 28 and 37 of the NSCA, the Commission: **DECISION**

- approves the designated analyst qualifications, as recommended by CNSC staff in CMD 23-M8; and
- authorizes the following designated officers to designate any person whom the designated officer considers qualified as an analyst under section 28 of the NSCA:
  - the Vice-President (VP) of the Technical Support Branch (TSB) and Chief Science Officer (CSO), and
  - the Director General (DG) of the Directorate of Environmental and Radiation Protection and Assessment (DERPA)

To be clear, any analyst being designated under the NSCA must meet the qualifications set out in CMD 23-M8. With this decision, the Commission directs the Commission Registry to undertake the issuance of new designated officer certificates to the incumbents of the above designated officer positions. The certificates shall reflect the additional duty that the designated officers are authorized to carry out, pursuant to paragraph 37(2)(e) of the NSCA.

33. The Commission finds CNSC staff's proposal and recommendations to be clear and justified, and consistent with the provisions of the NSCA. The Commission is satisfied that designating analysts will ensure that the CNSC laboratory is better able to fulfil its analysis functions in support of law enforcement.

CLOSED SESSION

Event Initial Report – Ontario Power Generation – Misplaced equipment during OPG training activity

34. Following the public portion of the meeting on March 2, 2023, the Commission convened for a closed session to discuss a security-related event concerning misplaced equipment during an OPG training activity (CMD 23-M16[16]). This portion of the Commission meeting was not open to the public and was held *in camera* because it related to "prescribed information" as defined in the *General Nuclear Safety and Control Regulations*,[17] in respect of which there are regulatory requirements and restrictions on disclosure. The Commission directs CNSC staff to further update the Commission on this matter following the completion of the review of the event. **ACTION** by December 2023

[16] CMD 23-M16 contains prescribed security information and is not publicly available.
[17] Statutory Orders and Regulations (SOR)/2000-202

Closure of the Public Meeting

35. The public portion of the Commission meeting closed at 10:04 a.m. These minutes reflect both the public meeting itself and the Commission's considerations following the meeting.

36. The Commission acknowledges the departure of two Commission Members: Ms. Indra Maharaj, who was appointed as a judge to the Alberta Provincial Court in March 2023, and Dr. Sandor Demeter, whose term as a Permanent Member of the Commission was ending on March 11, 2023. The Commission greatly appreciates the expertise and experience that Dr. Demeter and Ms. Maharaj brought to the Commission.

Young, Michael

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Recording Secretary — April 21, 2023
Date

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Commission Registrar — April 21, 2023
Date

APPENDIX A

23-M9	2023-02-02	6963813
Notice of Virtual Commission Meeting of March 2, 2023		
23-M10	2023-02-14	6968771
Agenda of the Meeting of the Canadian Nuclear Safety Commission (CNSC) to be held remotely on March 2, 2023		
23-M10.A	2023-02-23	6977617
Revised Agenda for March 2, 2023 Commission Meeting		
23-M11	2023-02-21	6979494
Approval of the Minutes of Commission Meetings held on December 15 and 16, 2022		
23-M12	2023-02-21	6979558
Approval of the Minutes of Commission Meeting held on January 25, 2023		
CMD 23-M13	2023-02-23	6977628
Information Item Status Report on Power Reactors Written submission from CNSC staff		
CMD 23-M14	2023-01-31	6969764
Information Item Update on Canada's Participation at the 7th Review Meeting of the Joint Convention on the Safety of Spent Fuel Management and on the Safety of Radioactive Waste Management (CMD 22-M40, November 2, 2022 Commission meeting) Written submission from CNSC staff		
CMD 23-M15	2023-02-22	6979821
Information Item Information on how the CNSC responds to reported events involving lost, stolen or found sealed sources and radiation devices Written submission from CNSC staff		

CMD 23-M8	2023-02-07 2023-02-16	6958037 - English 6976897 - French
Decision Item Designating Analysts under the *Nuclear Safety and Control Act* (NSCA) Written submission from CNSC staff		
CMD 23-M8.A	2023-02-22 2023-02-23	6980769 - English 6981677 - French
Decision Item Designating Analysts under the *Nuclear Safety and Control Act* (NSCA) Presentation from CNSC staff		
CMD 23-M16	2023-02-28	6982621
Closed Session - Confidential Event Initial Report - Ontario Power Generation - Misplaced equipment during OPG training activity Written submission from CNSC staff		