Minutes of the Canadian Nuclear Safety Commission (CNSC) Meeting held on June 28, 2023

Minutes of the Canadian Nuclear Safety Commission (CNSC) meeting held Wednesday, June 28, 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
R. Kahgee
M. Lacroix
V. Remenda

D. Saumure, Registrar
C. Howlett, General Counsel
M. Young, Recording Secretary

CNSC staff advisors were: B. Torrie, J. Churchill, L. Desaulniers, F. Martel, C. Françoise, R. Richardson, J. Stevenson, K. Campbell, K. Murthy, P. Burton, H. Tadros, R. Stenson, C. Cattrysse, A. Zenobi, A. Jean, A. Levine, T. Panichevska, M. Young and S. Faille

Other contributors were:

- Ontario Power Generation (OPG): C. Naidin, A. Owen and S. Irvine
- Bruce Power: M. Burton, C. Mudrick, A. London, M. Rinker, J. Ross and L. Van Wieringen
- NB Power: N. Reicker and J. Nouwens
- Canadian Nuclear Laboratories (CNL): J. McBrearty
- Cameco: L. Mooney
- Saskatchewan Ministry of Environment: T. Moulding
- Health Canada: D. Quayle
- Atomic Energy of Canada Limited (AECL): M.-E. Pagé

Constitution

1. With the notice of meeting Commission member document (CMD) 23-M17 having been properly given and all Commission members being present, the meeting was declared to be properly constituted.

2. For the meeting, documents CMD 23-M19 to CMD 23-M26, were distributed to members. These documents are further detailed in APPENDIX A of these minutes.

Minutes of the CNSC Meeting Held March 2, 2023

3. The minutes of the March 2, 2023 meeting were approved secretarially in advance of the meeting.

Adoption of the Agenda

4. The agenda, CMD 23-M18, was adopted as presented.

Chair and Registrar

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

DECISION ITEM – REGULATORY DOCUMENT

Regulatory Document REGDOC-2.2.3, *Personnel Certification, Volume III: Certification of Reactor Facility Workers, version 2*

6. With reference to CMD 23-M22 and CMD 23-M22-A, CNSC staff presented regulatory document (REGDOC[1]) REGDOC-2.2.3, *Personnel Certification, Volume III: Certification of Reactor Facility Workers,* version 2 for Commission's consideration and approval. Version 2 would replace version 1, which was approved by the Commission in September 2019 and RD-204, *Certification of Persons Working at Nuclear Power Plants*, which was approved by the Commission in February 2008.

[1] REGDOCs play a key role in the CNSC's regulatory framework. 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. 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.

7. CNSC staff explained that REGDOC-2.2.3, version 2, sets out the requirements and guidance for the certification of reactor facility workers by the CNSC. CNSC staff noted that the revised REGDOC:
   - provides increased flexibility to licensees in managing staff and in developing and implementing training
   - sets performance-based, technology-neutral requirements, processes and objectives
   - standardizes existing personnel certification processes while reducing administrative and regulatory burden
   - clarifies regulatory interpretation and terminology
   - removes validity periods for all knowledge-based certification examination results, except the two-year validity period for all simulator-based certification examinations
   - improves candidate recruitment and retention

8. CNSC staff also provided information regarding the public consultation for REGDOC-2.2.3, version 2. CNSC staff noted that the consultation focused on the proposed changes to the REGDOC. CNSC staff reported that, during the 106-day consultation period, from July 4, 2022 to October 18, 2022, it received 139 distinct comments from the following 6 respondents:

   - Bruce Power
   - Canadian Nuclear Association
   - GE - Hitachi Nuclear Energy
   - Froats and Froats Associates
   - New Brunswick Power Corporation (NB Power)
   - Ontario Power Generation (OPG)

9. CNSC staff noted that the key issues raised during public consultation were:

   - use of subjective and prescriptive wording
   - increased site experience for Senior Health Physicists (SHP)
   - minimum employment of operations personnel
   - misalignment with CNSC examination guides
   - applicability and implementation at new facilities
   - perceived conflict with Systematic Approach to Training (SAT)

10. CNSC staff held a workshop on February 16, 2023, with the focus on comments received during the public consultation and implementation challenges. The workshop was opened to individuals and organizations who provided comments during the public consultation period. All issues brought up during the workshop were satisfactorily addressed.

11. The Commission asked CNSC staff to discuss the qualitative and quantitative methods that will be in place to measure the REGDOC's ability to deliver and address the key issues identified. CNSC staff noted that the validation process would include:
    - ongoing dialogue and stakeholder engagement activities
    - CNSC inspections and compliance verification activities
    - exchanging information during semi-annual Certification and Training Advisory Group (CTAG)[2] meetings

12. The Commission also asked NB Power, OPG and Bruce Power representatives to comment on this topic. Representatives from the 3 licensees noted that each organization tracks certified worker demographics, and that they would continue to provide feedback to CNSC staff during CTAG meetings. The OPG representative also noted that the revised REGDOC would accommodate OPG's future needs with respect to Small Modular Reactor (SMR) technologies.

13. The Commission asked for more information concerning how the REGDOC deals with job titles of certified positions, particularly as new reactor technologies are emerging. CNSC staff responded that the REGDOC establishes generic terminology that can be used to reference designated positions; however, licensees can use site-specific terminology for job titles, provided the job titles are associated with CNSC-designated positions. CNSC staff added that this practice would continue to apply to new facilities such as SMRs. Representatives from Bruce Power, OPG and NB Power noted that the current job titles are historical, well established within the operational framework, and emphasized that there are no plans to change them to align with new technologies. The OPG representative added that the appendix in REGDOC-2.2.3, Volume III, version 2 adequately addresses the various positions used at the nuclear power plants.

14. The Commission asked about the removal of prescriptive training topics and sequences, and the responsibility for defining training programs. CNSC staff clarified that the minimum requirements for training are established in REGDOC-2.2.2, *Personnel Training* and that the revised REGDOC-2.2.3, Volume III adds oversight by specifying training program components. CNSC staff added that licensees are responsible for implementing a systematic-approach-to-training-based approach to complement the requirements established in the REGDOCs.

[2] The Certification and Training Advisory Group (CTAG) is a standing committee comprised of management representatives from the industry and CNSC staff, which facilitates the exchange of information and feedback on the CNSC worker certification and training.

15. The Commission asked for clarification on the proposed performance-based approach and on the certified personnel's flexibility to switch between reactor types and technologies. CNSC staff responded that workers are trained and certified for a specific reactor technology, and that cross-technology operation is not permitted without requalification.

16. The Commission requested insights into the timelines and expectations for licensees to implement the REGDOC. CNSC staff noted that REGDOC-2.2.3, Volume III is referenced in the operating licences instead of the Licence Condition Handbooks and would require a licence amendment to be implemented. CNSC staff explained that, once the REGDOC is approved, CNSC staff would contact impacted licensees to discuss timelines for a licence amendment application. CNSC staff noted that a similar approach was successfully followed for REGDOC-2.2.3, Volume III, version 1, in 2020. An OPG representative added that OPG expected the implementation of the revised REGDOC to take several months, rather than several years.

17. The Commission asked the licensee representatives to comment on any concerns they may have with respect to the revised REGDOC. The representatives from Bruce Power, OPG and NB Power unanimously expressed no significant concerns on the revised REGDOC. They noted that the revised REGDOC provides flexibility, improves inclusiveness of the training program, and would not impact their current operations.

18. The Commission also asked CNSC staff for information on the revision timeframe for examination guides.[3] CNSC staff responded that it was drafting a workplan, and that the workplan was expected to be completed by fall 2023.

19. The Commission highlighted its satisfaction with the modernization of the REGDOC and the use of Gender Based Analysis Plus (GBA+) as part of this revision. The Commission notes that one of the anticipated outcomes of the new revision is the removal of systemic barriers for recruitment and retention.

Decision on REGDOC-2.2.3, version 2

20. After considering the recommendations submitted by CNSC staff, the Commission approves REGDOC-2.2.3, *Personnel Certification, Volume III: Certification of Reactor Facility Workers*, version 2 for publication and use. **DECISION**

[3] Examination Guides (EG1, EG2) summarize the requirements and guidelines for certification and requalification of shift personnel at Nuclear Power Plants. These two examination guides were last revised in 2005 and 2004, respectively.

STATUS REPORT ON POWER REACTORS

21. With reference to CMD 23-M19, CNSC staff presented the following additional updates:

- Bruce Power Nuclear Generating Station (NGS) Unit 2 returned to full power following a brief forced outage to repair a leaking instrument line[4]
- Bruce Power completed a primary heat transport system hydrostatic pressure test at Bruce NGS Unit 6, which is shut down for the major component replacement project[5]
- OPG's Darlington NGS Unit 1 refurbishment is ongoing – the calandria tube installation is the current critical path
- Testing at 30% full power and turbine testing are ongoing for the refurbishment of Darlington NGS Unit 3
- OPG continues to prepare for the shutdown and refurbishment of Darlington NGS Unit 4
- OPG has increased Pickering NGS Units 1 and 5 to full power, and Unit 4 was returned to full power on June 27, 2023 following a planned maintenance outage
- On June 16, OPG submitted a licence application requesting authorization to operate Pickering NGS Units 5 to 8 until December 2026
- OPG paid the administrative monetary penalty (AMP) noted in CMD 23-M19 for both Pickering NGS and Darlington NGS
- CNSC staff issued letters to power reactor licensees requesting implementation of the remaining unimplemented sections of REGDOC-2.2.4, *Fitness for Duty Volume II: Managing Alcohol and Drug Use*, version 3. CNSC staff noted that the letter requested implementation of the pre-placement and random testing provisions of REGDOC-2.2.4, Volume II by December 1, 2023

22. The Commission sought additional information on the Bruce Power NGS Unit 2 leak and the impact it had on nuclear energy workers. CNSC staff noted that the instrument line was located inside the primary heat transport system, and thus there was no impact to workers. Additionally, CNSC staff noted that Bruce Power shut down the unit to fix the leak prior to reaching the regulatory leak rate limit (100 kg/hour) that requires reactor shutdown. A Bruce Power representative added that, to prevent similar events, Bruce Power inspected an additional 23 sites

[4] Details of the instrument line leak at Bruce NGS Unit 2 are found in the minutes from the March 2, 2023 Commission meeting.
[5] 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.

where similar problems could arise, and made repairs in 5 of those sites.

23. The Commission noted that several instrument lines leaks had occurred in 2022 and 2023[6], and sought additional insights on the activities performed by CNSC staff to ensure that such systems are adequately maintained and managed. CNSC staff responded that due diligence activities include verification of the industry's Operating Experience (OPEX) processes and programs. CNSC staff added that lessons learned and sharing information across the industry[7] are key components of an OPEX program. A representative from Bruce Power added that, in addition to lessons learned and industry-wide OPEX sharing, Bruce Power has an internal program that looks at instrument lines during outages to ensure proper instrument line clearance is maintained to prevent degradation due to fretting. The OPG and NB Power representatives confirmed that similar programs are in place at OPG and NB Power.

24. The Commission asked Bruce Power for information on the planned restart timeline for Unit 6. A Bruce Power representative reported that the current scheduled timeframe for the restart is October 2023.

EVENT INITIAL REPORTS (EIRs)

Bruce Power – Improper disposal of tritium-contaminated waste by Bruce Power

25. With reference to CMD 23-M24, CNSC staff provided information regarding an improper disposal of tritium-contaminated waste by Bruce Power. CNSC staff's submission indicates that on February 2, 2023, Bruce Power released tritium-contaminated filter waste in excess of the unconditional clearance levels (UCL)[8] set out in the *Nuclear Substances and Radiation Devices Regulations* (NSRDR).

26. CNSC staff submitted that:
    - the event was not expected to have adverse impacts on the health and safety of persons or the environment due to the low

[6] A leak due to worsening of an existing crack caused by high cycle fatigue at Point Lepreau NGS, which was discussed at the December 2022 and January 2023 Commission meetings. A leak due to cable fretting (rubbing) against equipment at Bruce Power NGS Unit 4, which was discussed at the March 2, 2023 Commission meeting.
[7] In Canada, sharing of information across the industry is carried out through the CANDU Owners' Group (COG) weekly OPEX screening committee meeting.
[8] The unconditional clearance level (UCL) for tritium is set at 100 becquerel/gram (Bq/g). The tritium concentration in the charcoal released ranged between 185 Bq/g to 511 Bq/g.

level of contamination and capture of the tritium in the charcoal filters
- individual effective doses to a critical group in the public (i.e., a child) were estimated at 7.39 microsieverts per year (µSv/yr)[9] for a low probability event and at 0.61 µSv/yr for a realistic exposure
- no adverse effects on the natural environment are expected as a result of disposal since the disposal site is designed to accept naturally-occurring radioactive materials (NORMs)

CNSC staff noted that the detailed event report submitted by Bruce Power is currently under review. CNSC staff noted that, as per REGDOC-3.1.1 *Reporting Requirements for Nuclear Power Plants*, CNSC staff will review any additional information as it becomes available.

27. A representative from Bruce Power noted that Bruce Power performed a review of all different material release paths from the Bruce Power site and implemented additional verification measures as a result of this event. The Bruce Power representative noted that an independent review was carried out to assess the robustness of the implemented measures.

28. The Commission enquired about the timeline of the event, particularly as it relates to the chemical analysis performed on the material that was incorrectly shipped offsite for disposal. A Bruce Power representative clarified that the chemical analysis was performed prior to shipment; however, the main causes of the event included:
    - human error due to incorrectly assuming that the shipment was clean based on air sampling only
    - lack of independent verification

29. The Commission enquired further into the lessons learned and independent review performed by Bruce Power. A Bruce Power representative responded that Bruce Power made improvements to its review and approval process for waste materials. With respect to the independent review process, the Bruce Power representative reported that an external contractor, with expertise in both radiological protection and shipping, was hired to independently review and identify any potential gaps before the end of December 2023.

30. The Commission asked Bruce Power to elaborate on the topic of conditional and unconditional clearance levels and how they apply to the waste discussed in the Initial Event Report. The Bruce Power representative responded that, as per the NSRDR, the unconditional clearance limit for tritium is 100 Bq/g, and the

[9] The regulatory dose limit for members of the public is 1 mSv (1000 µSv) in one calendar year.

waste in question had a peak tritium value of 511 Bq/g. As such, the waste needed to be disposed of under a conditional release permit, which requires a different approval process. The Bruce Power representative further noted that, in this case, the same disposal company and process used for conditional releases was used for the erroneous unconditional release of the waste, so there was no significant impact on people or the environment.

31. The Commission sought further information on the CNSC inspection performed as a result of this event. CNSC staff responded that it performed a reactive inspection looking at hazardous waste handling processes immediately after the event. CNSC staff noted that no issues were identified during the inspection. CNSC staff stated that it was planning additional inspections when future similar shipments occur.

32. The Commission requested further details regarding the tests performed to assess the toxicity of the waste that was placed in the landfill. A representative from Bruce Power noted that Bruce Power performed tests to reproduce the effects of aggressive acidic-type leachate on the waste materials. The Bruce Power representative noted that these tests provided an upper bound for various anticipated scenarios of how the waste material would behave in the landfill. The Bruce Power representative also reported that the waste implicated in this event contains tritium, which dissolves easily in water and does not change the pH.

33. The Commission is satisfied with the preliminary information provided on this item and the response by Bruce Power to make process improvements and address lessons learned.

Bruce Power – Bruce A Unit 4 Heat Transport Purification System Heavy Water Leak

34. With reference to CMD 23-M20, CNSC staff provided information regarding a heavy water leak in the heat transport purification system of the Bruce Nuclear Generating Station A Unit 4. In its submission, CNSC staff informed the Commission that the source of the leak was identified as a failed flexible hose located on the inlet of a Unit 4 purification system, resulting in a total heavy water leak of 135 megagrams (135×10^6 g). Bruce Power informed the Commission that it responded to the heavy water leak event in an effective and timely manner, resulting in no adverse impact on employees, the environment or the public.

35. During its presentation (CMD 23-M20.1), Bruce Power explained that the leak was located in the purification portion of the auxiliaries of the primary heat transport system, specifically a hose leading to the mechanical filter used to remove impurities.

Bruce Power noted that no regulatory limits were reached or exceeded during the event; the highest individual dose by a worker received during the event, initial response, mitigation and cleanup activities was 2.36 millisieverts (mSv).[10]

36. Bruce Power reported that Unit 4 was returned to power following the cleanup and repair of the leak. Bruce Power noted that it made other improvements throughout the Unit 4 purification filter system. In addition, Bruce Power stated that it implemented improvements at both Bruce NGS A and B, such as a camera in the filter hose room, and shared lessons learned with the industry.

37. The Commission asked Bruce Power if its maintenance and inspection program covered the issue in question. A representative from Bruce Power responded that the effectiveness of the preventive maintenance program with respect to the filter hoses was one of the identified root causes of the event. The Bruce Power representative noted that the frequency of preventive maintenance activities associated with leak detection beetles[11] was 2.5 years. However, as a result of this event, Bruce Power stated that it looked at improving the effectiveness of the preventive maintenance program for leak detection beetles and performed a review of 59 leak detection beetles, identifying 7 that required remediation or repair.

38. The Commission asked Bruce Power for additional information on the amount of heavy water leaked during the event. A Bruce Power representative reported that the total amount of heavy water leaked represents approximately one third of the total inventory of heavy water outside the primary heat transport circuit[12] (i.e., part of the auxiliary heavy water inventory). The Bruce Power representative clarified that no heavy water inventory was lost from the primary heat transport circuit, and there was no impact on reactor shutdown and cooling during the event. Bruce Power also reported that the leaked heavy water was recovered and was being processed in order to be reused.

39. The Commission asked Bruce Power about possible upgrades to the design and materials used for the purification hoses. A representative from Bruce Power responded that Bruce Power was investigating different configurations and/or materials for

[10] The annual dose limit for a nuclear energy worker as per the *Radiation Protection Regulations* is 50 mSv per year and 100 mSv over five years.
[11] Leek detector beetles are the primary leak detection elements within a plant. Currently, these elements are designed as open circuits, which would close and alarm if a leak occurred.
[12] The primary heat transport system (HTS) circulates pressurized heavy water coolant through the reactor fuel channels to remove heat produced by fission of the natural uranium in the fuel. One auxiliary system to the primary HTS is the heat transport purification system, which controls the chemistry of the reactor coolant. The auxiliary heavy water inventory which is part of the purification system is external to the heavy water inventory inside the primary HTS.

the hoses to improve the robustness of the system. The Bruce Power representative noted that Bruce Power would track corrective actions and follow its engineering change control process to implement any design changes.

40. The Commission asked for further information on Bruce Power's safety culture survey results during the incident. A Bruce Power representative responded that the results of the survey had just been received, and that Bruce Power was analyzing them using the organization's standard process. The Bruce Power representative noted that one prevalent theme was better communication with staff.

41. The Commission is satisfied with the preliminary information provided on this item and Bruce Power's response to the event.

42. The Commission directs CNSC staff and Bruce Power to provide an update on this event, including information on the safety culture survey, at a future public meeting. **Action** By December 2023

Canadian Nuclear Laboratories – Safety Stand-down at Canadian Nuclear Laboratories' Whiteshell Site following the discovery of non-compliances in the fire protection program

43. With reference to CMD 23-M25, CNSC staff provided information on the safety stand-down[13] that took place at Canadian Nuclear Laboratories' (CNL) Whiteshell Laboratories facility, which is currently being decommissioned. The stand-down followed CNL's discovery of a non-compliance in its fire protection program, which had a direct impact on CNL's ability to maintain the minimum complement of fire response personnel to ensure adequate fire safety and response.

44. A CNL representative discussed the immediate and company-wide actions CNL had taken to address the organizational and compliance issues identified during the fire protection program self-assessment. The immediate actions included:
    - a safety stand-down of all activities with the exception of those required to maintain safety and security
    - CNSC staff notification, disclosure and updates regarding the event
    - public notification and updates
    - deployment of fire protection staff and spare equipment from Chalk River Laboratories site to Whiteshell

[13] During the stand-down period, the Whiteshell Laboratories site was placed in a safe shutdown state and only essential compliance and maintenance work were conducted.

Laboratories site to ensure necessary fire response capabilities
- the deployment of CNL executives and fire program subject matter experts to Whiteshell Laboratories site to oversee ongoing assessments
- a full review to determine gaps in fire personnel training and identify remediation measures
- full review of emergency response equipment and fire systems, and procurement of new equipment to address deficiencies
- improvements to fire program oversight and shift staffing

45. The CNL representative also discussed site-wide actions including a root cause analysis of emergency services, a review of all safety and control areas at Whiteshell Laboratories, and corrective actions to ensure compliance with regulatory requirements and improve safety culture.

46. The Commission enquired about CNSC staff's inspection and compliance verification process at Whiteshell Laboratories. CNSC staff responded that compliance verification walkdowns and inspections targeting all 14 safety and control areas are performed at Whiteshell Laboratories on a yearly basis. CNSC staff noted that, for fire prevention, it looks at fire equipment in the field to ensure it is maintained, available and not obstructed, and observes drills performed by CNL. CNSC staff added that it had not noted any findings pointing to systemic program failure. CNSC staff further stated that, in light of this event, future compliance activities will include training, management system and fire response, as applicable.

47. The Commission asked for more information on CNL's self-assessment. A CNL representative noted that the self-assessment was initiated by the questioning attitude of a new employee and was conducted in accordance with CNL's approved procedures. The CNL representative noted that a review of previous years' audits and assessments identified gaps in terms of findings and recommendations and their categorization, which led to the safety stand-down. Additionally, the CNL representative noted that CNL failed to adequately assess the consequences of organizational changes at Whiteshell Laboratories, such as setting up a tiered combined security and fire response force, resulting in gaps in training and qualification requirements.

48. The Commission asked CNSC staff to comment on the nature of changes in non-compliances observed throughout the lifecycle of a nuclear facility, from construction to decommissioning. CNSC staff stated that, regardless of the lifecycle stage a facility is in,

compliance with all 14 safety and control areas is part of the licensing basis. CNSC staff noted that, as a facility progresses through its lifecycle, the focus of the work and the associated risks changes, but that does not necessarily correlate to changes in non-compliances.

49. The Commission expressed strong concerns regarding the number of fundamental failures at Whiteshell Laboratories which resulted in this event. The Commission noted that the event puts in question the competence of the licensee and the adequacy of the CNSC's level of oversight and compliance program for the facility. The Commission further noted that the event raises questions about whether similar gaps could exist in other safety and control areas.

50. A CNL representative responded that the boards of governors of CNL, the Canadian National Energy Alliance (CNEA)[14], and Atomic Energy of Canada Ltd. (AECL) have shared the Commission's concerns and disappointment on the situation at Whiteshell Laboratories. The CNL representative noted that, organizationally, CNL is focusing on ensuring that Whiteshell Laboratories is appropriately staffed in terms of the number of employees and appropriate expertise and skillsets.

51. In addition, the CNL representative reported that CNL had conducted a review of all safety and control areas at Whiteshell Laboratories, which identified some deficiencies and common trends. The CNL representative noted that the identified gaps were lower in significance and impact than those noted within the fire program.

52. CNSC staff responded that it was looking into making changes and improvements to its oversight at Whiteshell Laboratories and similar sites. CNSC staff noted that it would also undertake a lesson learned activity.

53. The Commission appreciated the availability of CNSC staff and CNL to answer Commission members' questions. The Commission expressed that, while the licensee has responded to the event and the findings, the event is significant and speaks to a failing safety culture and many processes over a long period of time. The Commission encourages CNL to share operational experience on this topic with the industry and others, as some of the causes and lessons learned can have a broad application.

[14] Canadian National Energy Alliance (CNEA) is the contractor who manages and operates Canadian Nuclear Laboratories sites in Ontario, Quebec and Manitoba.

54. The Commission directs CNSC staff to provide an update to the Commission on this event, including lessons learned, at a future public meeting.

Action
By November 2023

UPDATES ON ITEMS FROM PREVIOUS COMMISSION PROCEEDINGS

Update on the Inspector's Order issued to Cameco Corporation in October 2022 regarding the exceedance of the approved volume of a waste rock stockpile at the Cigar Lake mine (Action from December 15, 2022 Commission meeting)

55. Regarding CMD 23-M26, CNSC staff submitted that Cameco had provided an acceptable drawdown plan identifying activities to reduce the volume of stockpile C to a level below the regulatory requirements. CNSC staff considered the drawdown plan and supporting submissions to be sufficient to meet the requirements of the CNSC Inspector's Order, and therefore considered the order closed. CNSC staff noted that it would provide a further update on this item in the 2022 Uranium Mines and Mills Regulatory Oversight Report (ROR) in December 2023.

56. A representative from Cameco reported that the current state of stockpile C had been reviewed by a third-party geotechnical subject matter expert, who confirmed that no mitigatory actions were required to ensure the geotechnical stability of the pile at its current volume. The Cameco representative added that there were no effects on the environment, the health and safety of persons or security as a result of the non-compliance.

57. The Commission asked for clarification on the drawdown plan and the changes in the volume of the pile. CNSC staff clarified that, as part of the drawdown plan, Cameco will be allowed to remove and add material from stockpile C, provided that the total volume not exceed the volume identified when the exceedance was noted.

58. The Commission asked for information on the impact of the leachate system. A representative from Cameco responded that the environmental risk assessment completed on a pile volume of 450,000 m^3 concluded that there were no issues with respect to the leachate.[15]

59. The Commission asked for an update on engagement with Indigenous communities since the December 2022 update.

[15] The volume of material in stockpile C upon discovery of the event was 413,172 m^3, while the regulatory limit for stockpile C is 400,000 m^3.

CNSC staff responded that the order was made available on the CNSC website, and that CNSC staff had proactively informed nations with an interest in the Cigar Lake site of the order. CNSC staff added that it offered to respond to any questions Indigenous communities may have.

60. The Commission asked if the Saskatchewan Ministry of Environment had any concerns regarding Cameco's proposal for stockpile C. A representative from the Saskatchewan Ministry of Environment noted that the Ministry had issued an order to Cameco for the stockpile C overage on November 8, 2022, and that Cameco had complied with the order. The representative also noted that the Ministry was working closely with CNSC staff to ensure that the non-compliance is resolved.

61. The Commission is satisfied with the update provided on this topic.

INFORMATION ITEM

Information on the waste rock found around the homes in Elliot Lake

62. CNSC staff presented a verbal update to the Commission on the issue of radiation levels from waste rock in the town of Elliot Lake, Ontario, which had been the subject of recent media coverage and inquiries from the public. CNSC staff noted that some Elliot Lake residents have raised concerns about radiation levels in their homes, attributed to waste rock from former uranium mines at Elliot Lake being used as construction material or landfill.

63. Based on a review of historical documentation, CNSC staff reported to the Commission that:
    - the waste rock used in Elliot Lake homes was clean waste rock, which was never chemically processed; the waste rock was naturally radioactive at levels consistent with the region and not considered part of the nuclear fuel cycle, under the *General Nuclear Safety and Control Regulations*[16].
    - no tailings[17] from Elliot Lake mine were used as construction material in Elliot Lake – all tailings are stored and managed safely in CNSC-licensed tailing management facilities.
    - a Federal-Provincial Taskforce on Radioactivity was formed in 1970 to investigate and remediate many

[16] SOR/2000-202.
[17] Tailings are defined as the waste material and water mixture that is leftover after the mill removes valuable rock.

locations across Canada, including Elliot Lake. The report issued by the taskforce concluded that radon in Elliot Lake homes could have been from natural causes or from the use of mine waste rock for construction. All homes were remediated by installing fans to exhaust radon outside the homes; the long-term maintenance of mitigative systems was transferred to the homeowners' responsibility.

64. CNSC staff emphasized that, based on the reported radon levels and conservative assumptions about exposure, the current situation in Elliot Lake did not pose any health risks to homeowners. CNSC staff noted that it encourages homeowners, members of the public, and media to consult the guidance provided by Health Canada's National Radon Program. CNSC staff added that it would continue to monitor the developments on this topic and disseminate objective scientific information.

65. The Commission asked CNSC staff to clarify if BHP Canada Inc.'s (BHP)[18] remediation plans, if any, would be presented to the Commission. CNSC staff clarified that, although BHP is licensed to operate its tailings management facilities, the licence does not include the remediation of homes. CNSC staff stated that BHP's plans were not subject to CNSC regulatory requirements and would not come before the Commission.

66. The Commission asked Health Canada and AECL representatives to comment on their public communications on this matter. A Health Canada representative noted that Health Canada had not issued any communication. The Health Canada representative also noted that since the reported radon levels were above the Canadian national radon action level i.e. above 200 becquerels per cubic meter (Bq/m^3), Health Canada would recommend intervention to reduce the levels. With respect to the gamma dose rates associated with the radon levels, the Health Canada representative stated that Health Canada would need more information to make an assessment.

67. The AECL representative stated that AECL had been involved in the 1980s remediation activities as the subject matter expert; however, it had no other role in the matter. The AECL representative also clarified that AECL was not responsible for the legacy waste rock material since it is naturally-occurring and the original owner still exists.

[18] BHP is the company that acquired the mines at Elliot Lake from the operator, Rio Algom. In response to a letter sent by the Canadian Environmental Law Association (CELA) on behalf of the properties in Elliot Lake involved in this event, BHP began a detailed review of the information and made a public commitment "to understand the history of these properties, what has happened, and remediate, as appropriate."

68. The Commission requested further information on the process and responsibilities of various organizations for a situation in which a homeowner discovers elevated radiation levels in their home. CNSC staff responded that, if the radiation doses were at levels that could pose a health concern, the CNSC and Health Canada would assess the issue and determine a path forward to mitigate it.

69. CNSC staff also commented that a lot of information is readily available to homeowners on the topics of radon and naturally occurring radioactive materials (NORM) and how to remediate and/or mitigate such problems. CNSC staff noted the information available on Health Canada's *National Radon Program* website and the Elliot Lake local Health Unit website. CNSC staff also noted that information on NORM and links to other resources can also be found on the CNSC website.

70. The Commission requested CNSC staff to provide an update on BHP's conclusions and progress on the topic, as information becomes available. **Action** by December 2023

71. The Commission appreciated the availability of AECL and Health Canada during the meeting to answer Commission members' questions.

Information on CNSC funding programs

72. With reference to CMD 23-M23, CNSC staff presented on 2 CNSC funding programs: the Participant Funding Program (PFP)[19], which has been in place since 2011, and the Indigenous Stakeholder and Capacity Fund (ISCF)[20], which was officially lunched on May 1, 2023.

73. In its presentation CNSC staff summarized the eligibility criteria for the PFP and what the funding covers. The participant funding is provided for public Commission proceedings with interventions and for activities related to specific projects that come before the Commission. CNSC staff also described the application review process and how the funds are awarded.[21] CNSC staff noted that the CNSC is the only nuclear regulator

[19] The CNSC Participant Funding Program is an ongoing permanent program established in 2011 to enhance indigenous, public and stakeholder participation in environmental assessments and Commission proceedings and to support indigenous nations and communities and stakeholders to bring value-added information to the Commission.
[20] The Indigenous Stakeholder and Capacity Fund was established in December 2022 to help address capacity needs of Indigenous Nations and Communities and stakeholders.
[21] PFP applications are reviewed by an external Funding Review Committee (FRC), comprised of former public servants with experience in environmental assessment, licensing, indigenous consultation and engagement process, and PFPs from other federal agencies.

internationally to have a PFP, which has been recognized as an international best practice.

74. Regarding the ISCF, CNSC staff noted that the fund was established to address capacity needs of Indigenous nations and communities, as well as stakeholders, to support building relationships. CNSC staff noted that the ISCF builds on best practices and lessons learned from the CNSC's and other federal departments' funding programs.

75. CNSC staff explained that funding opportunities under the ISCF are distributed between 3 funding streams: Indigenous capacity support, regulatory policy dialogue, and engagement and collaboration support. Unlike the PFP, which is project-specific, the ISCF is not tied to a licensing decision, environmental assessment process or Commission proceeding. CNSC staff also noted that the funding provided under the ISCF does not require an agreement to be in place between the CNSC and an Indigenous nation or community.

76. The Commission requested further information on CNSC staff's communication plans related to the ISCF. CNSC staff noted that its current focus was on the Indigenous nations and communities with which the CNSC already has a relationship and regular meetings. CNSC staff noted that discussions and information sessions on the three funding streams are ongoing, and that CNSC staff is available to support the application process.

77. The Commission asked about the funding for the ISCF. CNSC staff responded that the funding – $3.8 million per year for 6 years – is entirely directed towards external recipients. CNSC staff noted that, although the funds are divided between the 3 streams, there is flexibility in terms of moving funds between the streams, if justified.

78. The Commission enquired further on the Government of Canada's oversight of the ISCF program. CNSC staff responded that, since the funding for the ISCF program is managed by the federal government, it needs to follow the Treasury Board Secretariat of Canada's rules and guidelines. As such, funding awards are subject to scrutiny to ensure applicants do not get funding from various federal government sources for the same program. CNSC staff also noted that mechanisms are in place to monitor and evaluate the performance of the program.

79. Regarding PFP, the Commission asked about how CNSC staff ensures that information submitted by PFP recipients is value-added to Commission proceedings. CNSC staff explained that applicants are required to describe their submissions as part of their applications; however, recipients are not prevented from

adding new information to their final submissions. CNSC staff also noted that feedback from Commission proceedings is provided to the Funding Review Committee to consider for future applications.

80. The Commission commended CNSC staff for its efforts in implementing the new funding program initiative. The Commission found CNSC staff's submission and presentation to be informative and appreciated the information provided by CNSC staff in response to the Commission's questions.

Status of the Designated Officer Program for 2022

81. With reference to CMD 23-M21, CNSC staff presented the status of the designated officer (DO) program for 2022. CNSC staff provided information on the number of CNSC DOs and their authorities under the *Nuclear Safety and Control Act* (NSCA), and reported on the DO authorities carried out in 2022. CNSC staff also presented information on the DO duties carried out by the CNSC's Nuclear Substances and Radiation Devices Licensing Division.

82. The Commission asked for additional information on the recruitment process for new DOs. CNSC staff responded that the Commission has designated specific positions as DOs, and that the CNSC ensures that individuals hired into those positions are qualified.

83. The Commission also asked for insights on CNSC staff's annual DO forum. CNSC staff responded that the topics discussed during the DO forum are determined based on input from DO forum participants, as well as CNSC staff who want to share information that could impact DO decision-making.

84. The Commission expressed its appreciation for CNSC staff's presentation on the DO program.

Closure of the Public Meeting

85. The Commission meeting closed at 14:52 pm. These minutes reflect both the public meeting itself and the Commission's considerations following the meeting.

Young, Michael

Digitally signed by Young, Michael
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Reason: I am the author of this document
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Recording Secretary Date

Saumure, Denis

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Commission Registrar Date

APPENDIX A

CMD	Date	e-Docs No.
23-M17	2023-06-06	7054487
Notice of Virtual Commission Meeting of June 28, 2023		
23-M18	2023-06-21	7054514
Agenda of the Meeting of the Canadian Nuclear Safety Commission (CNSC) to be held remotely on June 28, 2023		
CMD 23-M19	2023-06-21	7069617
Information Item Status Report on Power Reactors Written submission from CNSC staff		
CMD 23-M20	2023-06-19	7066144
Event Initial Report Event Initial Report – Bruce A Unit 4 Heat Transport Purification System Heavy Water Leak Written submission from CNSC staff		
CMD 23-M20.A	2023-06-21	7069664
Event Initial Report Event Initial Report – Bruce A Unit 4 Heat Transport Purification System Heavy Water Leak Presentation from Bruce Power		
CMD 23-M21	2023-06-16	7033027
Information Item Designated Officer Program Update: 2022 Presentation from CNSC staff		

CMD	Date	e-Docs No.
CMD 23-M22	2023-06-09	6933212
Decision Item REGDOC-2.2.3, *Personnel Certification, Volume III: Certification of Reactor Facility Workers, Version 2* Written submission from CNSC staff		
CMD 23-M22.A	2023-06-21	6939539
Decision Item REGDOC-2.2.3, *Personnel Certification, Volume III: Certification of Reactor Facility Workers, Version 2* Presentation from CNSC staff		
CMD 23-M23	2023-06-13	7028191
Information Item Funding Programs Update Presentation from CNSC staff		
CMD 23-M24	2023-04-13	7022874
Event Initial Report Event Initial Report – Improper disposal of tritium-contaminated waste by Bruce Power Written submission from CNSC staff		
CMD 23-M25	2023-06-22	7066158
Event Initial Report Event Initial Report – Safety stand-down at Canadian Nuclear Laboratories' Whiteshell Site following the discovery of non-compliance in the fire protection program Written submission from CNSC staff		
CMD 23-M26	2023-06-13	7065347
Information Item Update from CNSC staff on the Inspector's Order issued to Cameco Corporation in October 2022 regarding the exceedance of the approved volume of a waste rock stockpile at the Cigar Lake mine Written submission from CNSC staff		