



Minutes of the Canadian Nuclear Safety  
Commission (CNSC) Meeting held on  
October 5, 2021

Minutes of the Canadian Nuclear Safety Commission (CNSC) meeting held virtually on October 5, 2021, starting at 9:30 a.m. EDT. The public portion of 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 portion of the meeting and the Commission's determinations made as a result of the meeting.

Present:

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

M. Leblanc, Secretary  
L. Thiele, Senior General Counsel  
C. Moreau, Recording Secretary

CNSC staff advisors were: S. Faille, M. Davey, D. Alu, K. Owen-Whitred, J. Burt, A. Viktorov, L. Casterton, C. Purvis, D. Estan, B. Thériault, K. Murthy, R. Jammal, C. Ducros, M. Young, D. MacDonald and P. Bourassa

Other contributors were:

- Bruce Power : M. Burton and V. Bevacqua
- Draximage : K. Chettah and N. LaFrance
- Ontario Power Generation : S. Irvine
- New Brunswick Power: J. Nouwens
- Authority Alberta Health Services: M. Chies
- Independent Electricity System Operator (IESO): L. Kula and C. Farmer
- Kinectrics: S. Batters and D. Harris

### Constitution

1. With notice of the meeting having been properly given in Commission member document (CMD) [21-M40](#), and all permanent Commission members being present, the meeting was declared to be properly constituted.
2. Since the Commission meeting held on September 3, 2021, [CMD 21-M28](#), [CMD 21-M29](#) and [CMD 21-M40 through CMD 21-M50](#) were distributed to members. These documents are further detailed in Appendix A of these minutes.

### Adoption of the Agenda

3. The agenda, [CMD 21-M42](#), was adopted as presented.

### Chair and Secretary

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

### Minutes of the CNSC Meeting Held June 8, 2021

5. The Commission had secretarily approved the [minutes](#) of the June 8, 2021 Commission meeting.<sup>1</sup>

## **UPDATES ON ITEMS FROM PREVIOUS COMMISSION PROCEEDINGS**

### Update from CNSC Staff on Exceedance of the Annual Dose Limit for a Nuclear Energy Worker at Jubilant DraxImage (Action item from April 27, 2021 Commission Meeting)

6. CNSC staff filed a memo on August 23, 2021 ([CMD 21-M46](#)) to update on the Event Initial Report (EIR) presented verbally during the Commission proceeding on [April 27, 2021](#), regarding a Nuclear Energy Worker at Jubilant DraxImage who received a radiation dose above regulatory limits to the thyroid after cleaning up a spill of iodine-131 (I-131).

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<sup>1</sup> The approved minutes were published on the CNSC website on October 4, 2021.

## Discussion

7. With regard to the identification of a procedural gap related to the transfer of materials to the waste storage room at the Jubilant DraxImage facility, the Commission enquired about the level of detail scrutinised during CNSC staff's inspections and the communication of observations to the licensee. CNSC staff described how CNSC inspectors prepare for inspections and verify observations against licensee documents, such as radiation safety manuals. CNSC staff added that inspectors communicate their observations, including non-compliances, either on-site or through inspection reports.
8. The Commission posed questions with respect to shielding and the design of the radioactive vials. The licensee provided a description of the additional equipment now installed to prevent a similar event from reoccurring. CNSC staff explained that while the CNSC certifies devices that are considered to be high risk, the CNSC does not have prescriptive requirements for lower risk containers. CNSC staff added that where there is a potential design flaw, the CNSC expects licensees to implement corrective actions to make sure that the flaw is addressed, such as what was done for this event.
9. With respect to the monitoring of gaseous I-131 at Jubilant DraxImage after the incident to measure whether there was any external atmospheric discharge of iodine, a Jubilant DraxImage representative reported that there was no atmospheric release of iodine as the hot cells and the waste storage area have a dedicated filtered ventilation system. The Jubilant DraxImage representative added that Jubilant DraxImage performs monitoring on a weekly basis during normal operation, and daily monitoring following an event. Respecting this specific event, the Jubilant DraxImage representative reported that releases were below release limits as the iodine was contained in bags that were transferred in the ventilated and filtered waste storing area.
10. The Commission enquired about requirements for testing Nuclear Energy Workers' thyroids after a potential exposure. CNSC staff responded that the licensee's Radiation Safety Manual requires that, in such cases, all workers present at the facility be identified and monitored. CNSC staff added that the licensee is responsible for following procedures and complying with its licence, including testing.

11. The Commission asked whether Health Canada had calculated how much iodine the affected individual had internalized, and whether a physiological response was expected. A Jubilant DraxImage representative told the Commission that the uptake was below that expected to result in a thyroid suppression scenario, or physiologic or pathophysiologic scenarios. The Commission requested that CNSC staff provide specific information on how close the dose received by the affected individual was to a threshold where there may be a physiological response.

**ACTION**  
by  
November  
2021

Update from CNSC staff on Exposure Above Regulatory Limit of a Nuclear Energy Worker at Alberta Health Services (Action Item from June 8, 2021 Commission Meeting)

12. With reference to [CMD 21-M48](#), CNSC staff presented an update on the exceedance of the annual dose limit for a nuclear energy worker at Alberta Health Services, in response to an action item from the [June 8, 2021 Commission meeting](#). CNSC staff reported that the licensee's assessment was that a large portion of the recorded effective dose was non-personal, and that the worker in question did not receive a dose in excess of the annual dose limits for a nuclear energy worker. Although the exact cause of the dosimeter's exposure was not determined, CNSC staff agreed with the licensee's assessment.
13. CNSC staff reported that Alberta Health Services had put appropriate corrective measures in place in response to the event. CNSC staff will continue to monitor Alberta Health Services' efforts to understand the cause of the high dosimeter reading.

Discussion

14. The Commission asked Alberta Health Services for its view on the possible causes of the affected individual's dosimeter's high reading, since an improper dosimeter storage scenario had been ruled out. An Alberta Health Services representative responded that, while Alberta Health Services continues to investigate the incident, it is being considered a contamination event, where radioactive material is deposited on an object or a person, as opposed to a personal dose, where a person is exposed to radiation.
15. Asked whether the CNSC records unresolved events for potential future re-examination, CNSC staff responded that it maintains records of previous incidents for each licensee.

16. Action #23711, requesting CNSC staff to provide an update on the exposure above regulatory limits of a NEW at Alberta Health Services, is now closed. The Commission understands that Alberta Health Services will implement measures to address the identified issues and to strengthen its safety culture.

**ACTION**  
**CLOSED**

Update from CNSC staff on the 2019 Regulatory Oversight Report for Nuclear Substances Presented in November 2020: Action Item Related to Enforcement Actions per Licensee

17. With reference to [CMD 21-M50](#), CNSC staff presented an update on the 2019 Regulatory Oversight Report for Nuclear Substances, presented on [November 5, 2020](#). During that meeting, the Commission directed CNSC staff to provide details related to enforcement actions segregated per licensee. In response, CNSC staff filed a memo on August 31, 2021, as outlined in CMD 21-M50. Commission Members notified the Secretariat in advance of the meeting that they were satisfied with the information. Action #23773 is now closed.

**ACTION**  
**CLOSED**

Update from Ontario Power Generation to provide statistics on damage to the irradiated fuel bundles (Action Item from April 27, 2021 Commission meeting)

18. With reference to [CMD 21-M43](#), Ontario Power Generation (OPG) provided an update regarding an action item from the minutes of the [April 27, 2021](#) Commission meeting. The Commission requested that OPG provide statistics on damage to the irradiated fuel bundles at the Pickering Nuclear Generating Station (NGS). OPG filed a memo on August 23, 2021, as outlined in CMD 21-M43. The Commission noted an error in the memo, which OPG confirmed, that the fraction of the total fuel bundle population identified as having irradiated fuel bundle damage was less than 0.01%, not 0.0001%.
19. Asked to clarify the cause of the damaged fuel bundles at the Pickering NGS, an OPG representative indicated that, prior to 2013, OPG had some fuel handling issues because of where the tooling was grasping the fuel bundle. OPG modified its Pickering NGS fuel handling machine in 2013 to reduce the damage to fuel bundles, and trending indicates improvement in this respect.
20. The Commission was satisfied with the information received. Action #23286 requesting that OPG to provide information on fuel damage frequency is now closed.

**ACTION**  
**CLOSED**

## **STATUS REPORT ON POWER REACTORS**

21. With reference to [CMD 21-M41](#), the Status Report on Power Reactors, CNSC staff presented the following updates:
- Darlington NGS Unit 4 began a planned maintenance outage on October 1, 2021.
  - Pickering NGS Units 5 was at 0.1 per cent of full power due to stator cooling issues.
  - Pickering NGS Unit 6 was at 72 per cent of full power due to fueling machine unavailability.

### Discussion

22. With regard to the [potassium iodide \(KI\) pill project](#), the Commission asked about the project timeline, whether it would be completed before the Pickering NGS is shut down, and whether the project could be generalized to include the Darlington NGS. CNSC staff said that the project had seen delays due to the COVID-19 pandemic. CNSC staff added that one of the objectives of Phase II of the project is to look at the feasibility of distributing KI pills to all schools. CNSC staff expects to complete the work on Phase II by the end of 2022, and to submit a report to the Commission with recommendations. The Commission noted its discomfort with the long timelines for the implementation of the KI pill project and distribution of the KI pills and encouraged CNSC staff to be diligent in its efforts.
23. The Commission asked licensees to comment on the subject of COVID-19 vaccinations for their workers. Representatives from each licensee expressed that they encourage workers to get vaccinated, and described the vaccine policies for their respective facilities.
24. Asked whether the number of employees who had tested positive for COVID-19 was comparable to other industrial sectors, an OPG representative reported that positivity rates at OPG were at or below provincial levels, and that OPG had not seen on-site transmission at the rates seen in other industries.

## **INFORMATION ITEMS**

### **Presentation from the Independent Electricity System Operator (IESO) on the duties and role of the IESO in Ontario**

25. The Independent Electricity System Operator (IESO), which performs a central coordinating role in the Ontario electricity sector, presented an overview of the supply and demand of electricity in Ontario. Key elements of the presentation were:
- Demand is overall lower due to significant impacts on the power system from the pandemic.
  - Electricity supply is relatively unchanged
  - Ontario natural gas fleet can provide the capability to produce energy to support the nuclear refurbishment program and the retirement of the Pickering NGS
  - Bruce Power notifying the IESO that its pressure tube sampling showed [high hydrogen results](#).
26. The Commission asked the IESO questions about energy forecasts, and appreciated the information it received. The Commission looks forward to future presentations by the IESO (frequency and timing to be confirmed later).

### **CNSC Staff Presentation on Dosimetry and Dose Assessment**

27. With reference to [CMD 21-M29](#), CNSC staff presented a technical briefing on approaches to dosimetry and dose assessment. The briefing described the related regulatory requirements, and included case studies on external and internal dose assessment.
28. The Commission asked questions for clarification, and noted its appreciation of the presentation and the usefulness of the case studies presented. Action #22503 requesting CNSC staff to provide a technical briefing on dosimetry and dose calculations is now closed.

**ACTION**  
**CLOSED**

### **CNSC Staff Review of the Regulatory Oversight Report Process**

29. CNSC staff presented [CMD 21-M45](#), describing its review to date of the regulatory oversight report (ROR) process. CNSC staff reported that it launched a review of the ROR process in 2018 to review reporting frequency and ROR content. CNSC staff added that it received over 400 comments during a public consultation period used to gain insight and feedback from the industry, the public, Indigenous communities and groups, and stakeholders.

30. CNSC staff told the Commission that it would present the final results of the ROR review to the Commission, including short-term and long-term improvement plans, at the January 27, 2022 Commission meeting. CNSC staff will also publish a “What We Heard” report on the CNSC website.
31. Asked about the comments and feedback received during consultation, CNSC staff reported that there was significant interest in having a plain language summary at the start of the RORs, and having links to live datasets. CNSC staff also reported that there was concurrence among the commenters to clarify and simplify the CNSC’s performance rating system.
32. The Commission is looking forward to CNSC staff’s recommendations.

#### Status of the Designated Officer Program: 2020

33. With reference to [CMD 21-M28](#), CNSC staff presented the status of the designated officer (DO) program for 2020. 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 2020.
34. CNSC staff explained that the Commission’s designation of DOs is done according to title or position, and that any person in a designated position is qualified to carry out authorized DO duties. The number of DO positions in the CNSC is based on operational need, and CNSC staff periodically review whether the number of DOs is appropriate.
35. Asked about how licensees could challenge or appeal DO decisions, CNSC staff indicated that DOs provide an opportunity to be heard prior to rendering decisions affecting the rights of licensees or applicants. DO decisions can be appealed to the Commission. All recourse possibilities are specified in the NSCA.
36. The Commission expressed its satisfaction for the quality and comprehensiveness of the information presented.

## **EVENT INITIAL REPORT (EIR)**

### **Kinectrics Inc.: Industrial accident resulting in a fatality on June 14, 2021**

37. With reference to [CMD 21-M47](#), CNSC staff presented information regarding a workplace fatality at a Kinectrics Incorporated (Kinectrics) site on June 14, 2021, involving a sub-contractor from Western Mechanical Electric Millwrights (Western).
38. CNSC staff reported that the Ontario Ministry of Labour, Training and Skills Development is the responsible authority for occupational health and safety matters such as the one that occurred here, but as its investigation is ongoing, the Ministry is not in a position to comment at this time.
39. The President and CEO of Kinectrics expressed condolences and added that Kinectrics will continue to work to prevent similar events in the future.

### **Discussion**

40. The Commission Members also express their condolences and enquired whether Western employees were familiar with or had the opportunity to practice the task that led to the fatality. A Kinectrics representative said that Kinectrics had hired Western based on its qualifications and record in working with similar equipment. The Kinectrics representative added that although there was a work plan and safety assessment for the work, there was no mock-up to practice.
41. Asked for the corrective actions implemented as a result of this event, a Kinectrics representative explained that Kinectrics increased its focus on risk identification and assessment, and on overseeing contractual work.
42. The Commission expects to receive an update on this matter from the perspective of its mandate respecting nuclear safety once the Ontario Ministry of Labour, Training and Skills Development has completed its investigation.

### **ACTION**

### Mississauga Metals and Alloys Bankruptcy

43. With reference to [CMD 21-M49](#), CNSC staff presented information regarding the bankruptcy of Mississauga Metals and Alloys (MM&A) under the [Bankruptcy and Insolvency Act](#) on August 20, 2021. CNSC site inspectors visited the MM&A site that day and installed lockout tags on all the locked intermodal containers containing nuclear substances, and confirmed that they were safe and secure. CNSC staff reported doing periodic site visits to verify the safety and security of the material.
44. CNSC staff reported that, as a result of the bankruptcy, there is no clear ownership of the inventory of radioactive waste on the MM&A site, which includes contaminated acids and metals. These materials contain small concentrations of low enriched uranium and are subject to nuclear material accountancy and safeguards. The waste is stored in 18 locked and weather-tight intermodal containers, which are stored outdoors.

### Discussion

45. Asked about interim measures in place to secure the site, CNSC staff reported that it does not consider the nuclear substances present on the site to pose a high risk, and with the locking of the intermodal containers, CNSC staff's view is that continuous surveillance is not required. CNSC staff added that CNSC inspectors are visiting the site twice a week to verify the lockout tags, and noted that the CNSC was in the process of contracting additional security patrols.
46. Regarding the Commission's concerns about the amount of MM&A's financial guarantee, CNSC staff told the Commission that the financial guarantee amount would have been sufficient had MM&A completed its intended work to process and reduce the inventory of waste. CNSC staff explained that MM&A had been reducing its inventory until 2017 when a fire on the site ended the work. CNSC staff opined that the COVID-19 pandemic further precipitated the bankruptcy.
47. The Commission enquired about the future control of the radioactive material present on MM&A site. CNSC staff assured the Commission that the NSCA provides for the CNSC to take necessary measures to protect persons and the environment.
48. Asked about the timeline for revoking MM&A's licence, CNSC staff said that it expects to come to the Commission with a request to revoke MM&A's licence before April 2022.

Closure of the Public Meeting

49. The public meeting closed at 2:32 p.m. The Commission convened a closed session to consider the matters raised in the context of the meeting.

**Moreau,  
Charles**  
Digitally signed by Moreau, Charles  
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Recording Secretary

November 17, 2021  
Date

**Leblanc,  
Marc**  
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Secretary

November 17, 2021  
Date

APPENDIX A

CMD	Date	e-Docs No.
21-M40	2021-09-07	6631810
Notice of Virtual Meeting of the Commission on Tuesday, October 5, 2021		
21-M42	2021-06-16	6590976
Agenda of the Meeting of the Canadian Nuclear Safety Commission (CNSC) to be held remotely on October 5, 2021		
21-M38	2021-08-11	6621161
Approval of the Minutes of Commission Meeting held on June 8, 2021		
21-M46	2021-08-23	6640745
<p>Updates on items from previous Commission proceedings</p> <p>Update from CNSC staff on exceedance of the annual dose limit for a Nuclear Energy Worker at Jubilant DraxImage (Action item from April 27, 2021 Commission Meeting)</p> <p>Written submission from CNSC Staff</p>		
21-M48	2021-09-20	6641053
<p>Updates on items from previous Commission proceedings</p> <p>Update from CNSC staff on exposure above regulatory limit of a Nuclear Energy Worker at Alberta Health Services (follow up from June 8, 2021 Commission meeting)</p> <p>Written submission from CNSC Staff</p>		
21-M50	2021-08-31	6640864
<p>Updates on items from previous Commission proceedings</p> <p>Update from CNSC staff on the Regulatory Oversight Report for Nuclear Substances presented in November 2020: Details related to enforcement actions per licensee</p> <p>Written submission from CNSC Staff</p>		
21-M43	2021-08-23	6640681
<p>Updates on items from previous Commission proceedings</p> <p>Update from Ontario Power Generation to provide statistics on damage to the irradiated fuel bundles (follow up from April 27, 2021 Commission meeting)</p> <p>Written submission from Ontario Power Generation</p>		
21-M41	2021-09-29	6651529
<p>Status Report</p> <p>Status Report on Power Reactors</p> <p>Written submission from CNSC Staff</p>		

21-M44	2021-09-22	6641089
Information Item		
Presentation from the Independent Electricity System Operator (IESO) on the duties and role of the IESO in Ontario		
Presentation from Independent Electricity System Operator (IESO)		
21-M47	2021-09-16	6641019
Event Initial Reports		
Kinectrics Inc.: Industrial accident resulting in a fatality on June 14, 2021		
Written submission from CNSC Staff		
21-M49	2021-09-28	6641116
Event Initial Reports		
Mississauga Metals and Alloys Bankruptcy		
Written submission from CNSC Staff		
21-M45	2021-09-16	6633479
Information Item		
CNSC Staff Review of the Regulatory Oversight Report Process		
Written submission from CNSC Staff		
21-M29	2021-09-15	6641527
Information Item		
Presentation on Dosimetry and Dose Assessment		
Presentation from CNSC Staff		
21-M28	2021-09-15	6641975
Information Item		
Status of the Designated Officer Program: 2020		
Presentation from CNSC Staff		