

Canadian Nuclear
Safety Commission



Commission canadienne
de sûreté nucléaire

Minutes of the Canadian Nuclear Safety
Commission (CNSC) Meeting held
on May 7 and 8, 2014

Minutes of the Canadian Nuclear Safety Commission (CNSC) Meeting held Wednesday, May 7, 2014 beginning at 4:15 pm and Thursday, May 8, 2014 at the Public Hearing Room, 14th floor, 280 Slater Street, Ottawa, Ontario.

Present:

M. Binder, President
A. Harvey
D.D. Tolgyesi
R. Velshi
S. McEwan (May 8 only)

M. Leblanc, Secretary
L. Thiele, General Counsel
M. Young, Recording Secretary

CNSC staff advisors were: R. Jammal, G. Rzentkowski, B. Poulet, M. Santini, K. Murthy, A. Régimbald, A. Licea, P. Thompson, M. Rickard, C. Purvis, R. Chamberlain, P. Fundarek, B. Torrie, L. Forrest, C. Moses, P. Elder, D. Howard and R. Stenson

Other contributors were:

- Canadian Partnership for Quality Radiotherapy: M. Milosevic, J. Schreiner and J. French
- Health Canada: D. Yoon, B. Ahier and L. Marcotte
- Ontario Power Generation: B. Phillips

Constitution

1. With the notice of meeting CMD 14-M20 having been properly given and a quorum of Commission Members being present, the meeting was declared to be properly constituted.
2. Since the meeting of the Commission held March 27, 2014, Commission Member Documents CMD 14-M21 to CMD 14-M28 were distributed to Members. These documents are further detailed in Annex A of these minutes.

Adoption of the Agenda

3. The revised agenda, CMD 14-M21.A was adopted as amended.

Chair and Secretary

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

Minutes of the CNSC Meeting Held March 27, 2014

5. The Commission Members approved the minutes of the March 27, 2014 Commission Meeting as presented in CMD 14-M22.

STATUS REPORTSStatus Report on Power Reactors

6. With reference to CMD 14-M23, which includes the Status Report on Power Reactors, CNSC staff presented updates on the following:
 - Bruce Nuclear Generating Station (NGS) A Unit 2 had completed its unplanned maintenance outage and was at 2% full power;
 - Pickering NGS Unit 1 was manually shut down in accordance with standard operating procedures due to issues with the liquid zone control system; and
 - approximately 100 litres of demineralized water was spilled on the Point Lepreau NGS site, with no impact to the environment or worker safety.
7. The Commission asked for more information regarding the shutdown of Pickering NGS, Unit 1. CNSC staff stated that there had been two separate events that both required the reactor to be shut down. CNSC staff explained that the first was due to a valve failure and that the second was due to the liquid zone control. CNSC staff noted that the valves were replaced and that the second issue arose during the restart following the first event. A representative from OPG provided information regarding both events. Regarding the first event, the OPG representative confirmed that the valves had been replaced. Regarding the second event, the OPG representative stated that the reactor operators followed procedures to safely shut down the reactor, and noted that a root-cause investigation was underway.
8. The Commission asked for more information concerning the flooding at the Gentilly-2 NGS site. CNSC staff responded that a river had flooded an access road on the site, and that measures were taken to control the situation. CNSC staff further noted that the reactor facilities were not affected by the flood.
9. The Commission also asked for information concerning the electric shock received by a worker at the Gentilly-2 site. CNSC staff responded that a metal barrel on a truck bed had come into contact with a wire, and that a worker had touched the barrel and received a shock. CNSC staff stated that there were no major consequences as a result of the shock; the worker was taken to a hospital but returned to work for his next shift.

Event Initial Report (EIR) - Contaminated Flexitron High Dose Rate Brachytherapy Unit

10. CNSC staff presented information regarding an event concerning a contaminated Flexitron High Dose Rate brachytherapy unit in a radiation therapy clinic. CNSC staff explained that a service engineer from the manufacturer, Elekta, detected contamination inside the Flexitron unit while performing a routine radioactive source (Iridium-192) change. CNSC staff stated that CNSC inspectors visited the facility and were satisfied that there was no contamination of the facility or persons, and that the contaminated equipment had been safely quarantined. CNSC staff further stated that other clinics using this equipment had been informed of the event, as well as Health Canada's Medical Devices Bureau and the United States Nuclear Regulatory Commission. CNSC staff noted that it would provide further information to the Commission once it has completed its investigation. CNSC staff presented information regarding brachytherapy, the Flexitron units, and a brief video of the CNSC inspection.
11. The Commission asked CNSC staff to explain why they were certain that there had been no contamination outside the Flexitron unit. CNSC staff responded that surfaces outside the machine were tested and no contamination was found. CNSC staff noted that the contaminated areas were tubes within the Flexitron unit, and that the radioactive sources were sealed within the unit. CNSC staff further stated that the Elekta engineer had been wearing a whole body dosimeter, which did not register a dose. CNSC staff also discussed the role of the CNSC laboratory in independently verifying the information received by Elekta, and added that they would know more about the nature of the event once the root cause analysis has been completed.
12. The Commission asked for more information regarding the transfer of radioactive sources within the equipment. CNSC staff responded that the radioactive sources are transported in a source container and transferred using tubes connected to the equipment. CNSC staff noted that the transfer is done automatically and that there is no direct contact between the qualified service engineer and the sources.
13. The Commission asked about other operators of Elekta units in Canada. CNSC staff stated that the operators of all Elekta units had been informed of the event and that each operator had reported back to the CNSC and indicated that there was no contamination.

ACTION
by July
2014

EIR - Radioactive sources that were found at the Cross Cancer Institute in Alberta

14. CNSC staff presented information regarding an event concerning radioactive sources that were found at the Cross Cancer Institute in Alberta. CNSC staff explained that used Cesium-137 sources were discovered in a box in a workshop during a routine radiation survey. CNSC staff noted that the sources had since been secured by the licensee and put into safe storage. CNSC staff also discussed the doses received by three nuclear energy workers who had been using the workshop. CNSC staff noted that the doses were elevated compared to their typical average doses, but that they were well below the annual regulatory dose limit of 50 millisieverts per year (mSv/y). CNSC staff stated that, based on the dose records of the employees, it was likely that the sources had been moved from their usual storage into the workshop in December 2013. CNSC staff further stated that it was unlikely that any member of the public would have been exposed to the sources.

15. The Commission asked whether it was known why the sources had been moved to the workshop. CNSC staff responded that this had not yet been determined, and noted that the sources had been safely stored and inventoried prior to the event. CNSC staff noted that used sources are typically collected and discarded by licensees through licensed disposal methods. CNSC staff further noted that licensees are required to have safety programs and procedures in place to control inventory.

16. The Commission asked for more information concerning the discovery of the sources. CNSC staff responded that the sources were found due to an unrelated transfer of equipment, during which routine radiation surveys were conducted. CNSC staff noted that if the sources had not been discovered during this survey, it was likely that the higher-than-average doses received by the workers would have triggered an investigation.

17. The Commission expressed concern regarding the lack of inventory control, particularly for used sources, and noted that this is something that should be looked at by the CNSC. CNSC staff noted that it would provide further information to the Commission regarding the EIR once the root cause analysis has been done and CNSC staff has completed its investigation.

ACTION

by July
2014

INFORMATION ITEMS

Presentation on Radiation Therapy in Canada

18. With reference to CMD 14-M26, three doctors representing the Canadian Partnership for Quality Radiotherapy (CPQR) presented information regarding radiation therapy in Canada. The

- presentation included information concerning radiation treatment technology and techniques, quality of care and safety for patients, worker and public radiation safety, and relationships with regulatory agencies, such as Health Canada and the CNSC.
19. The Commission asked for information regarding the licensing of equipment. CNSC staff responded that radiation therapy equipment, such as linear accelerators, require a device licence from Health Canada, and operators require an operating licence from the CNSC. A representative from Health Canada concurred, noting that the manufacture of radiation therapy equipment must comply with Health Canada requirements in order to be sold for use in Canada. A representative from the CPQR commented that the equipment is regularly maintained and calibrated, with quality assurance programs and guidance documents in place.
 20. The Commission asked about the relationship that the CPQR has with other industries, and whether they share information and experience. A representative of the CPQR responded that it does, and noted that there are meetings regarding quality and safety that are held each year with different industries, including international organizations. The representative noted that the interest and attendance for these meetings has been increasing each year. CNSC staff stated that this initiative has received funding and support from the CNSC, and noted the value it has in bringing improvements to safety culture.
 21. The Commission asked about doses to patients and whether epidemiological studies are conducted following treatment. A representative from the CPQR responded that this was a goal of the CPQR, and noted that follow-up with patients for cancer control and side effects is conducted. The CPQR representative explained that such studies would be useful in developing new strategies to further reduce the risks associated with treatment.
 22. The Commission asked whether the CPQR provides information to the public regarding radiation exposure. A representative of the CPQR commented on the differences in public perception between high-dose radiation therapy and low-dose background radiation, and noted that the medical community could be doing more to provide information regarding radiation and its safe use. A CPQR representative added that the CPQR could also provide information to patients and the public regarding the role of the CNSC and the regulation of nuclear materials in Canada.
 23. The Commission, noting from the CPQR presentation that less than five percent of radiotherapy incidents are equipment-related, sought further information on this subject. A representative of the CPQR responded that such incidents are rare, and noted that most can be categorized as near-miss or minor incidents that have no

- consequences for patients. The CPQR representative further noted that clinics learn from such incidents in order to prevent them from recurring. In addition, a CPQR representative stated that incidents are reported and reviewed by clinics' quality assurance committees, as well as Cancer Care Ontario, if required.
24. The Commission asked about the future of radiation therapy. A representative from the CPQR commented that the technology in the industry has advanced quickly, noting several new forms of treatment, and stated that it would be difficult to predict how the technology may change. A CPQR representative noted the importance of the Cobalt-60 produced by the National Research Universal reactor at Atomic Energy of Canada Limited's Chalk River Laboratories, and expressed the view that radiation therapy should be more accessible worldwide. A CPQR representative also noted that advances in technology would allow for improved treatment plans, specific for patients' needs.
25. A CPQR representative commented on the positive working relationship that the CPQR has with the CNSC and expressed the desire for this to continue. The Commission expresses its appreciation to the CPQR representatives for an informative presentation and looks forward to further presentations on key aspects of radiation therapy in the future.

Controlling and Ascertaining Worker Dose as Part of a Radiation Program

26. With reference to CMD 14-M28, CNSC staff presented information regarding Controlling and Ascertaining Worker Dose as Part of a Radiation Program. CNSC staff described radiation protection programs, regulatory requirements, the international radiation safety regime, dosimetry, monitoring, and CNSC oversight. CNSC staff also described the National Dose Registry (NDR), which is a collection of worker dose data maintained by Health Canada and used by CNSC staff for various purposes. CNSC staff also provided information regarding future initiatives to amend the *Radiation Protection Regulations*.
27. A representative from Health Canada concurred with CNSC staff's presentation and noted the role of Health Canada in maintaining the NDR. The Health Canada representative noted that there are dose records for over 800,000 workers, and that the registry is a comprehensive database and an important tool.
28. The Commission asked for more information on how the NDR receives its data. CNSC staff responded that the NDR receives information from licensed dosimetry services. CNSC staff noted that the dosimetry services calculate the doses based on monitoring

- information using health physics methodologies. CNSC staff further noted that the NDR dose information is made available to workers and can be requested at any time.
29. The Commission asked about the doses received by the different sectors of nuclear energy workers. CNSC staff responded that historically, uranium miners had higher doses than other sectors, although these have decreased with modern mining techniques. CNSC staff stated that on an individual basis, industrial radiography workers typically have the highest doses, and that the nuclear power plant industry would likely have the highest collective (sum total) dose due to the number of workers.
 30. The Commission asked for more information concerning the proposed amendments to the *Radiation Protection Regulations*. CNSC staff responded that the proposal includes reducing the dose to the lens of the eye from 150 mSv/y to 100 mSv over five years or 50 mSv/y, which is consistent with the whole body effective dose. CNSC staff noted that this reduction would be more protective against cataracts.
 31. The Commission asked for more information concerning the reconciliation of data in the NDR with licensee data. A representative from Health Canada commented that Health Canada was working on an initiative to ensure that the data submitted to the NDR is correct and properly registered. The representative from Health Canada noted that Health Canada was working with the CNSC to ensure that quality assurance measures are in place. CNSC staff added that it would be working with the NDR to ensure that the data it receives from licensees is correctly reflected in the NDR. The Commission noted that the CNSC would be able to provide assistance to Health Canada to ensure that the data from licensees is useful to the NDR.
 32. The Commission enquired about instances when the NDR was used to discover dose limit exceedances before licensees were aware of them. CNSC staff responded that it did not have any specific examples of this, but noted that it would be a way to monitor nuclear energy workers who work for different employers in a given time frame.
 33. The Commission asked for more information concerning the regulatory oversight of radiation protection programs. CNSC staff responded that licensees are required to have radiation protection programs and that CNSC staff conducts inspections to ensure that the programs are adequate and being implemented adequately.
 34. The Commission sought clarification regarding the requirements for licensees to have direct monitoring and licensed dosimetry. CNSC staff responded that these requirements are set out in regulations and are assessed on a case-by-case basis for each

- licensee. CNSC staff noted that different types of dosimeters can be used for different situations. CNSC staff noted an instance when a licensee's measured doses were higher than originally predicted, and that this resulted in the licensee being required to change its dosimetry technique.
35. The Commission noted that the information presented by CNSC staff on this subject should be made available on the CNSC website.
36. The Commission asked for more information concerning the doses received by medical practitioners. A representative from Health Canada responded that the NDR receives occupational doses from these workers. CNSC staff stated that the data received by the NDR includes all exposures, such as from x-rays and fluoroscopies, but noted that these doses are not differentiated in the overall dose record. CNSC staff further noted that, while the workers are being monitored, the matter of doses to medical practitioners is being reviewed by the International Atomic Energy Agency, the World Health Organization, and other organizations to ensure that there is guidance in place for these workers to be properly protected.

Regulatory Framework Program: 2013-2014 Annual Report

37. With reference to CMD 14-M27, CNSC staff presented the 2013-2014 Annual Report on its Regulatory Framework Plan. CNSC staff described the Regulatory Framework Program, noting the activities undertaken to reflect changes made to legislation, such as the coming into force of the *Administrative Monetary Penalties Regulations*, as well as the Government of Canada's agenda for regulatory reform and collaborations with other government departments to coordinate regulatory improvements. CNSC staff also described the new regulatory documents that had been published, as well as the future plans for completing the remaining regulatory documents in the regulatory framework document library. In addition, CNSC staff highlighted the continued importance of stakeholder engagement and communication.
38. The Commission asked if the CNSC learns from other regulatory organizations. CNSC staff responded that the CNSC does learn from other regulators, such as those in Canada's Community of Federal Regulators, as well as international nuclear regulators, and vice versa. CNSC staff noted that while different federal regulators have different challenges, the CNSC compares favourably with others, noting the CNSC's open and transparent public consultation processes and administrative monetary penalties as examples.

39. The Commission asked for more information concerning public engagement and asked if online tools such as web-based forms could be used. CNSC staff responded that the public is encouraged to provide feedback on all regulatory documents, even those that have already been published. CNSC staff noted that it would be considering the use of online forms to make it easier for the public to provide its views. CNSC staff also noted the importance of face-to-face consultation.
40. The Commission congratulated CNSC staff on the progress that it has made to date in updating the regulatory framework. The Commission noted that an objective of the CNSC should be to have all of the regulatory documents online, with links across the many documents so that they can be navigated as a whole, rather than as standalone documents.

Update on the Historic Contaminated Land Exemptions

41. With reference to CMD 14-M25, CNSC staff presented information regarding an Update on the Historic Contaminated Land Exemptions. CNSC staff explained that there are historic uranium- and radium-contaminated lands in Ontario and the Northwest Territories (NWT) respecting which the Commission had previously granted an exemption from the *Nuclear Safety and Control Act* (NSCA) requirement to be licensed. This exemption expires on December 31, 2016. CNSC staff noted that all of the sites were subjected to institutional controls to help ensure safety to people and the environment, and reported that recent efforts to characterize the sites, and the hazards associated with them, had led CNSC staff to conclude that there were no regulatory requirements for these sites. Given the characteristics of the sites, CNSC staff proposed that an exemption was no longer required because there were no requirements under the NSCA from which they needed to be exempt.
42. CNSC staff noted one exception in its report. CNSC staff recommended that the Commission note for the record that the unlicensed contaminated lands in Port Hope would remain under an exemption from the requirement to hold a licence until such time as they are dispositioned under the federal Port Hope Area Initiative project, which is a project to clean up historically contaminated sites in Port Hope.
43. The Commission asked for clarification regarding the contaminated sites in Port Hope. CNSC staff responded that the sites in Port Hope would remain under the CNSC's regulatory authority as part of the Port Hope Area Initiative project being carried out by Natural Resources Canada. CNSC staff explained that while certain sites in Port Hope would be exempt and not require oversight, they

- would remain under the overall licence associated with the project. CNSC staff noted that the Port Hope Area Initiative was expected to be completed around 2019. CNSC staff further noted that, once complete, there would be a formal process to confirm that all of the sites in Port Hope have been cleaned to appropriate levels.
44. The Commission asked for more information concerning the potential radiation hazards of the sites. CNSC staff responded that, based on the measurements and analysis of the sites, including local foods, the radiation risk was determined to be very low. CNSC staff explained that, given this low risk, there was no need for the CNSC to have any regulatory authority over the sites. CNSC staff noted that the sites would remain under institutional control from other organizations or levels of government.
 45. The Commission enquired about the radium-contaminated buildings in the Greater Toronto Area. CNSC staff responded that the City of Toronto has information concerning the hazards associated with these buildings, and noted that the radiation hazards are low compared to other potential hazards, such as asbestos. CNSC staff explained that any demolition work associated with these buildings would be required to undergo a hazard assessment by the Toronto Health Agency. CNSC staff further stated that it would remain available to provide assistance to the City of Toronto on these matters if required.
 46. The Commission questioned whether the removal of CNSC regulatory oversight of the exempted sites could result in a risk to the health and safety of the public or the environment. CNSC staff responded that this would not be the case, given the low risk associated with the sites. CNSC staff further explained that while it would no longer conduct formal inspections or regulatory oversight of these sites, it would remain in contact with the organizations responsible for the institutional control of the sites and continue to be apprised of any activities being conducted at the sites.
 47. The Commission further noted that it would be prudent for the CNSC to formally issue letters to the organizations responsible for the sites indicating that, given that there is no radiation hazard, the CNSC would not have any regulatory authority over these sites. CNSC staff responded that, if directed, it would ensure that it notifies all necessary parties.
 48. The Commission sought clarification regarding other historically contaminated sites in Canada. CNSC staff responded that there are several such sites, including former mines in Saskatchewan and Ontario, but these sites did require continued regulatory oversight. CNSC staff noted that these sites are all licensed under the NSCA.

49. The Commission accepts the information presented by CNSC staff that the hazards of the exempted sites have been determined to be sufficiently low as to not require CNSC regulatory oversight, save the Port Hope sites, which will remain under the CNSC oversight of the Port Hope Area Initiative. The Commission directs CNSC staff to provide the Commission with the necessary information so that it can issue formal notification to the organizations under which the institutional control for the sites would remain.

DECISION**ACTION**

by
August 31,
2014

DECISION ITEM

CNSC Designated Officer Program: Proposed list of CNSC staff designated officer positions and duties authorized under Sections 37 and 65 of the *Nuclear Safety and Control Act*

50. With reference to CMD 14-M24, CNSC staff presented to the Commission its recommendation to reduce the number of CNSC designated officer positions and duties authorized under Sections 37 and 65 of the *Nuclear Safety and Control Act* from 47 to 31. CNSC staff provided information regarding the roles of designated officers, regulatory provisions, an overview of past designated officer CMDs, and described the evaluation it conducted in order to determine the proposed reduction. CNSC staff stated that the proposed reduction would have no impact on the ability of designated officers to effectively and efficiently execute regulatory duties on behalf of the Commission. CNSC staff recommended that the Commission authorize designated officers in accordance with the proposed list of CNSC staff positions to make designated officer positions and duties included in CMD 14-M24.B.
51. The Commission asked for more information concerning the process for decisions made by designated officers and asked whether CNSC staff conduct annual reviews of designated officer decisions. CNSC staff responded that although there is no formal audit of decisions, there is a documented process in place that must be followed for each designated officer decision. CNSC staff noted that the process includes performance reviews, as well as a process for licensees to appeal decisions, if required. CNSC staff further noted that decisions can be referred to the Commission, if needed.
52. The Commission asked for more information concerning the reaction of the CNSC staff whose positions were proposed to lose the designated officer designation. CNSC staff responded that, under the operational review conducted, certain positions were found not to be exercising the authorities of the designated officer, and as such, it was not necessary that these positions continue to have the designation. CNSC staff noted that the information from the review was shared with all of the designated officers and the findings were understood and accepted. CNSC staff clarified that

the revocation of the designation for certain positions meant a change in responsibility for those positions but did not represent a change in classification or staffing levels.

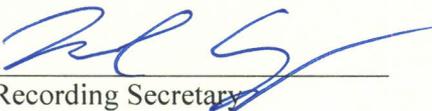
53. The Commission asked why it was being asked to revoke the designation for all 47 positions and then re-issue the designations for the proposed 31 positions. The Commission Secretary, who was a member of the CNSC operational review, responded that the designated officer certification process refers to the specific CMDs that have been accepted by the Commission. The Commission Secretary noted that the Commission Secretariat would be responsible for issuing new certificates based on the Commission's decision.

54. After considering the recommendations submitted by CNSC staff, the Commission accepts the List of CNSC Staff Positions to make Designated Officer Positions and Duties, included in CMD 14-M24.B. As such, the Commission hereby with this decision makes authorizations in accordance with CMD 14-M24.B and directs the Secretary to issue the new certificates to incumbents of the positions accordingly.

DECISION

Closure of the Public Meeting

55. The meeting closed at 4:50 pm on May 8.


Recording Secretary

June 23, 2014
Date


Secretary

23-6-2014
Date

APPENDIX A

CMD	DATE	File No
14-M20	2014-04-08	Edocs # 4411648
Notice of Meeting of May 7 and 8, 2014		
14-M21	2014-04-24	Edocs #4417302
Agenda of the meeting of the Canadian Nuclear Safety Commission to be held on Wednesday and Thursday, May 7 and 8, 2014, in the Public Hearing Room, 14 th floor, 280 Slater Street, Ottawa, Ontario		
14-M21.A	2014-05-01	Edocs # 4427614
Revised Agenda of the meeting of the Canadian Nuclear Safety Commission to be held on Wednesday and Thursday, May 7 and 8, 2014, in the Public Hearing Room, 14 th floor, 280 Slater Street, Ottawa, Ontario		
14-M22	2014-05-06	Edocs # 4428877
Approval of Minutes of Commission Meeting held March 27, 2014		
14-M23	2014-05-06	Edocs # 4430034
Status Report on Operating Reactors units as of May 6, 2014		
14-M24	2014-04-22	Edocs # 4417271
CNSC Designated Officer Program: Proposed list of CNSC staff designated officer positions and duties authorized under Sections 37 and 65 of the Nuclear Safety and Control Act – Oral presentation by CNSC staff		
14-M24.A	2014-04-30	Edocs # 4426082
CNSC Designated Officer Program: Proposed list of CNSC staff designated officer positions and duties authorized under Sections 37 and 65 of the Nuclear Safety and Control Act – Oral presentation by CNSC staff		
14-M24.B	2014-04-30	Edocs # 4426417
CNSC Designated Officer Program: Proposed list of CNSC staff designated officer positions and duties authorized under Sections 37 and 65 of the Nuclear Safety and Control Act – Oral presentation by CNSC staff		
14-M25	2014-04-24	Edocs # 4423287
Update on the Historic Contaminated Land Exemptions – Oral presentation by CNSC staff		
14-M25.A	2014-05-01	Edocs # 4423883
Update on the Historic Contaminated Land Exemptions – Oral presentation by CNSC staff		
14-M26	2014-05-01	Edocs # 4428093
Presentation on Radiation Therapy in Canada – Oral presentation by Dr. Milosevic		

14-M27 2014-04-17 Edocs # 4421738
Regulatory Framework Program: 2013-2014 Annual Report – Oral presentation by
CNSC staff

14-M27.A 2014-05-01 Edocs # 4411943
Regulatory Framework Program: 2013-2014 Annual Report – Oral presentation by
CNSC staff

14-M28 2014-05-01 Edocs # 4427305
Controlling and Ascertaining Worker Dose as Part of a Radiation Program – Oral
presentation by CNSC staff