

July 8, 2004

Minutes of the Canadian Nuclear Safety Commission (CNSC) Meeting held Thursday, July 8, 2004 beginning at 1:30 p.m. in the Public Hearing Room, CNSC Offices, 280 Slater Street, Ottawa, Ontario.

Present:

L.J. Keen, Chair

C.R. Barnes

J. Dosman

A. Graham

M.J. McDill

M.A. Leblanc, Secretary

K. Moore, Senior Legal Counsel

C. Taylor, Recording Secretary

CNSC staff advisers were: I. Grant, K. Lafrenière, B. Howden, K. Scissons, H. Rabski, R. Lane, J. Blyth, R. Jammal, G. Lamarre, B. Pearson, A. Blahoiianv, R. Leblanc, T. Schaubel.

Other contributors were:

- New Brunswick Power: R. White
- Cameco Corporation: B. Steane
- Ottawa Hospital Centre: Dr. Gheric
- Atomic Energy of Canada Limited: D. Torgerson, K. Hedges, P. Allen, J.P. Labrie
- MDS Nordion: G. Malkoske
- International Atomic Energy Agency: J. Cook
- Ontario Power Generation Inc.: J. Coleby, P. Charlebois, T. Mitchell, J. Froats
- Hydro-Québec: M. Doyon
- Bruce Power: K. Talbot

Adoption of the Agenda

1. The agenda, CMD 04-M24.B, was adopted as presented.

DECISION

Chair and Secretary

2. The President took the Chair and the Secretary of the Commission acted as Secretary of the meeting with C. Taylor acting as recording secretary.

Constitution

3. With the notice of meeting having been properly given and a quorum of Members being present, the meeting was declared to be properly constituted.
4. Since the meeting of the Commission held April 29, 2004, Commission Member Documents CMD 04-M23 to CMD 04-M31.1A had been distributed to Members. These documents are further detailed in Annex A of these minutes.

Minutes of the CNSC Meeting Held April 29, 2004

5. The Members approved the minutes of the April 29, 2004 Commission meeting (reference CMD 04-M25) without change.

DECISION

Significant Development Report

6. Significant Development Report (SDR) no. 2004-4 (CMDs 04-M26, 04-M26.A, 04-M26.B, 04-M26.C, and 04-M26.D) was submitted by staff.
7. Staff reported that, since the submission of the SDR, an event occurred on July 4, 2004 at the MAPLE Reactor facility located at Atomic Energy of Canada's Chalk River Laboratories. The event involved a shutoff rod at MAPLE 1 that failed to drop as designed during a system test. The reactor was in the normal shutdown state at the time and there was no safety consequence. Staff reported that AECL is investigating the cause of the failure and that staff continues to monitor the situation.
8. In response to the Member's questions concerning the likely cause of the failure, AECL stated that the problem appears to be unrelated to the earlier reported problems with the mechanical function of the shutoff rod system. While the root-cause analysis is still underway, preliminary findings point to control computer errors. CNSC staff indicated its agreement with this preliminary finding. AECL also noted its agreement that the matter must be resolved before it proceeds with the proposed resumption of the reactor testing program.
9. Since the submission of the SDR, staff also reported an incident in June 2004 in Edmonton involving a Certified Exposure Device Operator (CEDO) employed by Castle NDE Ltd. Staff reported that the CEDO was not supervising a trainee operator of an exposure device as required by the regulations and that no warning

signage was used at the work site. On a return visit by CNSC inspectors later in the evening, the CEDO was again not supervising the trainee operator, and no warning signs were in place. An Order was issued, prohibiting the CEDO from working until the CNSC is provided with evidence that he has received additional training on his responsibilities and obligations under the regulations. In response to a question from the Members on the responsibilities of the employer in this case, staff noted that other options involving the employer are being explored.

10. The Members requested staff to provide an update on the incident involving the CEDO employed by Castle NDE Ltd. at the next meeting of the Commission scheduled for September 17, 2004.

ACTION

11. With reference to section 4.1.2 of the SDR, concerning an identified crack in a feeder pipe at the Point Lepreau Generating Station, the Members sought further information on the scope of the inspection that was conducted. In response, staff reported that all feeder pipes, except those that are particularly difficult to access, were inspected. Approximately 700 inspections at different welds and bends were done on the 380 feeder pipes. Mr. White of New Brunswick Power Corporation (NB Power) added that NB Power inspected a random series of inlet and outlet feeder pipe bends and welds, focusing on those that had a history of repairs.
12. In response to follow-up questions from the Members on the rate that a crack can grow, CNSC staff and NB Power stated that it is possible for a crack to grow to a detectable level within a year and that a cycle of inspection of 12 months is therefore considered appropriate at this time.
13. With reference to item 4.1.6 of the SDR (CMD 04-M26.C) concerning the Gunnar Idle Mine Site, the Members expressed concern that the Province of Saskatchewan has not responded to the CNSC's letter of March 4, 2004 concerning the need for an application for a site licence. In response, staff reported that, while a formal response from Saskatchewan has not been submitted, discussions with provincial officials are taking place and CNSC staff is optimistic that a licence application will be forthcoming. Further discussions with provincial staff and the community-based Northern Saskatchewan Environmental Quality Committee (EQC) are scheduled for July 16, 2004, followed by site visits on July 23 and 24, 2004. Provincial officials, CNSC staff and the EQC will be present during those visits.

14. The Members reiterated their concern that the Province of Saskatchewan has not yet formally responded to the CNSC's request. The Commission requested staff to communicate this concern to the appropriate Saskatchewan Government officials and to report again on the progress being made on this file at the next meeting of the Commission scheduled for September 17, 2004. **ACTION**
15. With reference to item 4.1.3 of the SDR (CMD 04-M26), the Members sought further information on the reported UF6 cylinder leak at Cameco Corporation's (Cameco's) Port Hope uranium conversion facility. In response, Mr. Steane of Cameco stated that such an event has not occurred in the past and that the emergency response system, including systems for cooling the tank with carbon dioxide, performed as designed and the situation is stable. No significant impact on the environment, workers or the public occurred as a result of this event. Staff also noted that its assessment of the event and the corrective actions taken and proposed by Cameco will be completed once staff receives the final Significant Event Report requested from Cameco.
16. The Members requested staff to provide a further report on the UF6 cylinder leak incident at Cameco's Port Hope facility at a future meeting of the Commission after staff's assessment is complete. **ACTION**
17. With respect to item 4.1.4 of the SDR (CMD 04-M26.A) concerning an update on the Saskatchewan Uranium Miners Health Studies, it was confirmed that the mortality study, expected to be completed in 2006, is proceeding according to schedule and that the linkages between all the applicable cancer databases, with the exception of the records from the Province of Quebec, is complete. Staff is awaiting access to the Quebec records.
18. The Members requested that staff provide the Commission with an update on the mortality study in 2005 when the analysis is expected to be well underway and preliminary results will be available. **ACTION**
19. Further with respect to the uranium miners health studies, the Members questioned staff on how the communities in northern Saskatchewan have responded to the staff's conclusion that a further study of current miners would not be possible due to an inability to produce statistically significant results. In response, staff noted that worker and community meetings were recently held on this topic in northern Saskatchewan and that the findings and conclusions were well received. Staff noted that radiation exposure data on miners will continue to be gathered and stored in the National Dose Registry, as required by the regulations.

20. With reference to item 4.1.5 of the SDR (CMD 04-M26B) concerning a contravention of the regulations by Panther Radiography Ltd., staff reported that since the SDR was published, a further inspection by CNSC staff was conducted and additional issues related to the training of the licensee's staff were raised. Staff reported that acceptable progress is being made towards resolution of these issues.
21. In response to a follow-up question on the incident involving Panther Radiography Ltd., staff could not confirm if the incident was unique. Staff noted the difficulties inherent in regulating this type of mobile operation, often in remote locations. Staff is collaborating with other jurisdictions on improving regulatory compliance and enforcement strategies for this sector, and plans to be increasingly active in promoting radiation safety within this industry through various outreach strategies.
22. With reference to item 4.1.7 of the SDR (CMD 04-M26D) regarding 2 reported contraventions in the operation of a Class II Nuclear Facility (medical accelerator) at the Ottawa Regional Cancer Centre (ORCC), the Members questioned Dr. Gheric of the ORCC on the circumstances related to the events.
23. In response, Dr. Gheric stated that normal practices had not been followed when a shielding door interlock had been deliberately bypassed during the servicing of the machine. Dr. Gheric also confirmed that no hospital workers or patients received an excess exposure to radiation. Dr. Gheric reported that, subsequently, training for all Nuclear Energy Workers has been modified, the supervisory role of the Radiation Safety Officer during servicing operations has been clarified, and staff training in the area of recognition and responses to unusual occurrences is being modified appropriately in light of this event.
24. Further in regard to the significant development at the ORCC, staff noted that the licensee responded immediately and has resumed appropriate control over its own and third-party staff. Staff is also satisfied that the changes made to the ORCC's policies and procedures are an enhancement. Staff expressed the view that this was an isolated occurrence and does not point to a generic problem in the operation of this type of accelerator in other facilities. The licensed third-party service provider has also been issued an inspection report to ensure procedures are properly followed at all client sites. A follow-up verification inspection at the ORCC is scheduled for July 12, 2004.

Status Report on Power Reactors

25. With reference to the Status Report on Power Reactors (CMD 04-M27), staff provided the following update on the changes in status that have occurred since the report was issued:
- Bruce NGS–A, Unit 4 has returned to full power operation from a planned maintenance outage.

Outstanding Issues for the MDS Nordion Medical Isotopes Reactor Project

26. With reference to CMD 04-M28, staff presented a status report on issues related to the MDS Nordion Medical Isotopes Reactor Project. The project consists of the MAPLE 1 and MAPLE 2 reactors and New Processing Facility located at Atomic Energy of Canada's Chalk River Laboratories. At its meeting on March 24, 2004, the Commission had requested a comprehensive report from staff on the issues remaining to be resolved prior to commercial operation of the facility.
27. The Members noted that the shutoff rod system failure event discussed in the above Significant Development Report (see paragraphs 7 and 8 above) occurred after staff submitted CMD 04-M28, and that the shutoff rod issue is also relevant to the advancement of this project. In this regard, the Members questioned whether staff would be prepared to allow high-power operations prior to the shutoff rod issue being resolved. In response, staff stated that the shutoff rod issue must be resolved prior to the resumption of active commissioning including any high-power operations (i.e., greater than 8 megawatt).
28. With reference to CMD 04-M28, staff reported that, since the Commission Meeting on March 24, 2004, two issues had been resolved and that substantial progress has been made towards resolving many of the remaining issues.
29. Staff reported that it is currently reviewing AECL's safety case in support of a request to resume nuclear commissioning up to 7 megawatts. Staff also expects to receive, in the near future, AECL's safety case in support of a request to operate above 8 megawatts.
30. Staff referred the Members to the issues that must be resolved before staff will consider lifting the 8 megawatt hold point set out in the licence, as well as with respect to the commissioning of the iodine production facility, New Processing Facility, and other

operations. Dr. Hedges of AECL noted that it is in agreement with the issues described in the CNSC staff report.

31. The Members sought AECL's specific views regarding the power coefficient. In response, AECL noted that options will be considered, including further discussion between AECL and CNSC staff regarding the practicality of various options. AECL noted that it would not consider a redesign of the core to be practical.
32. The Members sought the views of the owner of the facility, MDS Nordion. In response, Mr. Malkoske of MDS Nordion expressed appreciation for the additional clarity and predictability that the staff report brings to the project. Mr. Melkoske noted that MDS Nordion is relying on AECL and CNSC to bring appropriate closure to the identified issues.
33. In response to questions from the Members on the computer codes used to predict the reactor behavior, AECL and CNSC staff provided a brief description of the codes and their history of use and validation at MAPLE and other nuclear facilities. The current issue is that the codes have failed to predict the positive power coefficient observed at the MAPLE reactor. AECL and CNSC staff agreed that there are no other significant deviations of note concerning the codes.
34. In response to further questions from the Members on the computer codes, AECL explained that it is currently working with relevant data obtained from the similar HANARO reactor in Korea. AECL also expressed the view that the proposed renewed testing at MAPLE would help clarify the positive power coefficient issue. Staff agreed that the proposed testing would help in understanding the positive power coefficient issue and what may be lacking in the computer codes.
35. The Members, remarking on the multiplicity of long-standing issues associated with this project, questioned AECL on the extent to which it is making use of fully independent, third-party technical reviewers. In response, AECL explained that two independent teams within AECL and an expert from the U.S. are working on the computer codes and modelling issues discussed above, and that experts from outside AECL have been hired. Furthermore, AECL referred to its Change Review Board that is chaired by an independent Chief Engineer at AECL and which frequently contains external experts. The Change Review Board provides detailed scientific and technical reviews as opposed to only oversight review.

36. The Members further questioned AECL on its organizational structure in terms of engineering governance. In response, AECL explained the reporting relationships between the Engineering Manager, Project Management, Chief Engineer (including as chair of design reviews and of Configuration Control Board), and the Resident Engineer on the design shop floor. The Members noted the need for inclusion of a formal description of the engineering governance and control structure, including detailed organizational charts, in any future licensing submission.
37. With reference to the time frames identified for resolution of the remaining issues, the Members expressed their complete support for the protection of health, safety, security and the environment as the key objective.
38. In closing the discussion on the MDS Nordion Medical Isotopes Reactor Project, the Members expressed their appreciation for the status report prepared by CNSC staff and for the additional information provided by AECL and MDS Nordion during the meeting.

IAEA Operational Safety Review Team (OSART) Mission to Pickering Nuclear Generating Station (NGS) - A

39. At its meeting on March 24, 2004, the Commission requested staff to provide information on the results of an International Atomic Energy Agency (IAEA) Operational Safety Review Team (OSART) mission to the Pickering NGS – A. The requested information was presented by CNSC staff, Ontario Power Generation Inc. (OPG), and the IAEA in CMDs 04-M29, 04-M29.1 and 04-M29.2 respectively.
40. Staff noted good correspondence between the OSART findings and the results of the CNSC audits and inspections of the facility. A follow-up visit suggested by the OSART team in approximately 18 months has been formally requested by CNSC staff.
41. OPG, in its presentation, outlined what it is doing, or planning to do, with each of the recommendations and suggestions made by the OSART. OPG added that many of the actions to address the suggestions and recommendations had been completed.
42. Mr. Cook of the IAEA provided more information on the purpose, scope and conduct of OSART reviews and the qualifications of its team members. Mr. Cook also elaborated on what OSART does not do; such as assessing plant designs, compliance with regulatory

requirements and overall or relative plant safety. Mr. Cook summarized the findings with respect to the strengths and weaknesses observed at Pickering NGS A and the recommendations of the OSART for improvement.

43. In response to the Members' questions on processes to make the information in this report available to other nuclear facilities in Canada, OPG explained that this report will eventually be posted on the IAEA website, and that it would also provide information at the request of another nuclear plant.
44. The Members questioned a possible correspondence between the findings of the OSART and those of CNSC staff related to maintenance and spare parts. CNSC staff answered that there is a high degree of correspondence with OSART on findings in this area.

Annual CNSC Staff Report on the Safety Performance of the Canadian Nuclear Power Industry (year 2003)

45. With reference to the *Annual CNSC Staff Report for 2003 on the safety performance of the Canadian Nuclear Power Industry* (CMD 04-M30), staff summarized the main observations in each safety area for the industry as a whole and for each of the operating stations in Ontario, Quebec and New Brunswick.
46. Staff has concluded that the power reactor industry operated safely in 2003 and that, while deficiencies remain in the area of Performance Assurance at some stations, licensees generally have performed acceptably and have appropriate systems in place to safely operate their stations.
47. In response to the Members' questioning on what appeared to be significantly higher accident severity rates for the Gentilly-2 nuclear station, CNSC staff explained that there appears to be a lower reporting threshold for Hydro-Québec, resulting in a larger number of reports for this station. Hydro-Québec added that comparison of indicators for higher severity rates between different stations is difficult, since they depend on several and different factors.
48. The Members asked for comments on the status of Generic Action Items (GAIs). CNSC staff answered that it had observed marked progress on GAIs in 2003, and that it expects this trend to continue.

49. The Members asked for more information on the rate of cracking in feeder pipes and the need for increased inspections to detect this problem. CNSC staff answered that, based on the findings of the last few years, it requested an aggressive inspection program from the licensees, especially for the Point Lepreau site. CNSC staff added that, even if a crack propagated enough between inspections to produce a leak, it would be detected by the leak detection system. New Brunswick Power (NB Power) stated that an aggressive program for inspecting feeder pipes is in place for the years 2005 to 2007. NB Power added that, along with partners in the industry, extensive development has been done to detect cracks in feeder pipes.
50. The Members asked for reasons why the radiation protection program at the Gentilly-2 station was rated “A”, while the implementation of the program was rated “C”. Hydro-Québec answered that this “C” rating was caused by a lack of compliance from some employees with general radiation protection procedures. Hydro-Québec added that an action plan was in place in order to improve the situation and to ensure that an ALARA culture was properly implemented.
51. The representatives of the Nuclear Power Plants were asked to comment on the report. They answered that, generally, they saw improvements to the report and that they consider it useful. Each of the representatives also commented on the ratings that were given to their respective stations.

CNSC Focused Inspection Team (FIT) Report on the Response of Pickering NGS – B to the August 14, 2003 Loss of Bulk Electricity System Event (LOBES)

52. In response to a request made by the Commission at its April 29, 2004 meeting, CNSC staff provided further information on the status of corrective actions taken to address the 19 findings of the CNSC FIT assessment (ref. CMD 04-M31). Staff concluded that OPG had initiated a number of appropriate corrective actions and that, when long-term corrective actions are in place, the safety margins and defense-in-depth of the plant to LOBES events will be completely restored. Staff identified 9 findings in the FIT report where CNSC staff and OPG have not yet reached agreement on the details of the corrective action needed or the timeline for completing the necessary actions.

53. With reference to CMD 04-M31.1 and CMD 04-M31.1A, OPG provided additional information on its response to the CNSC staff's FIT Report. OPG concluded that the equipment, procedures and trained staff at Pickering NGS – B ensured the safety of the plant, workers and the public during the August 14, 2003. OPG also expressed the view that, with the improvements now in place, the response of the plant to a future LOBES, or similar event, will be satisfactory. OPG pointed to the planned addition of back-up Class IV power generators at the site that will ensure even greater defense-in-depth to the station in cases where grid power is not restored quickly.
54. With reference to page 10 of CMD 04-M31, the Members enquired on the timing for resolution of issues that are still unresolved. OPG provided a summary of the actions taken to date to resolve these issues. OPG also considers these issues to be well in hand. CNSC staff provided an update on the status of the issues that remain unresolved, and explained that it was reviewing OPG's submissions in order to close some of the outstanding issues.
55. The Members enquired whether the 22.5-megawatts generator was sufficient to provide fire water or other emergency capabilities. OPG answered that it considers the current generator to be adequate to meet the urgent requirements in the interim until the larger generator sets are designed, procured and installed. OPG expects this interim generator to be operational by the end of September. CNSC staff stated that it finds this interim solution to be acceptable.

Closure of the Public Meeting

The public meeting closed at 5:55 p.m.

Chair

Recording Secretary

Secretary

ANNEX A

CMD	DATE	File No
04-M23	2004-06-03	(1-3-1-5)
Notice of meeting held on Thursday, July 8, 2004 in Ottawa		
04-M24	2004-06-23	(1-3-1-5)
Agenda of the meeting of the Canadian Nuclear Safety Commission (CNSC) held in the public hearing room, 14th floor, 280 Slater Street, Ottawa, Ontario, on Thursday, July 8, 2004		
04-M24.A	2004-06-30	(1-3-1-5)
Agenda of the meeting of the Canadian Nuclear Safety Commission (CNSC) held in the public hearing room, 14th floor, 280 Slater Street, Ottawa, Ontario, on Thursday, July 8, 2004 – Supplementary Information		
04-M24.B	2004-07-05	(1-3-1-5)
Agenda of the meeting of the Canadian Nuclear Safety Commission (CNSC) held in the public hearing room, 14th floor, 280 Slater Street, Ottawa, Ontario, on Thursday, July 8, 2004 – Supplementary Information		
04-M25	2004-06-22	(1-3-1-5)
Approval of minutes of Commission meeting held July 8, 2004		
04-M26	2004-06-21	(1-3-1-5)
Significant Development Report no. 2004-4		
04-M26.A	2004-06-23	(1-3-1-5)
Significant Development Report no. 2004-4 – Supplementary Information		
04-M26.B	2004-06-25	(1-3-1-5)
Significant Development Report no. 2004-4 – Supplementary Information		
04-M26.C	2004-06-29	(1-3-1-5)
Significant Development Report no. 2004-4 – Supplementary Information		
04-M26.D	2004-07-05	(1-3-1-5)
Significant Development Report no. 2004-4 – Supplementary Information		
04-M27	2004-06-22	(1-3-1-5)
Status report on power reactors for the period of April 13, 2004 to June 21, 2004		
04-M28	2004-06-22	(26-1-62-0-0)
Status Report on Outstanding Issues for the MDS Nordion Medical Isotopes Reactor Project		

04-M29 2004-06-22 (26-1-4-0-0)

Ontario Power Generation Inc.: Results of the IAEA Operational Safety Review Team (OSART) mission to the Pickering Nuclear Generating Station A, February 9-26, 2004. - Oral presentation by CNSC staff

04-M29.1 2004-06-22 (1-3-1-7)

Ontario Power Generation Inc.: Results of the IAEA Operational Safety Review Team (OSART) mission to the Pickering Nuclear Generating Station A, February 9-26, 2004. - Oral presentation by Ontario Power Generation Inc.

04-M29.2 2004-06-17 (1-3-1-7)

Ontario Power Generation Inc.: Results of the IAEA Operational Safety Review Team (OSART) mission to the Pickering Nuclear Generating Station A, February 9-26, 2004. - Oral presentation by the International Atomic Energy Agency

04-M30 2004-06-22 (26-1-0-0)

CNSC Staff Annual Report for 2003 on the Canadian Nuclear Power Industry

04-M31 2004-06-22 (26-1-8-0-0)

Ontario Power Generation Inc.: Follow-up on corrective actions taken by the licensee in response to the CNSC focused inspection team report on Pickering NGS-B station's response to the August 14, 2003, blackout. - Oral presentation by CNSC Staff

04-M31.1 2004-06-22 (1-3-1-7)

Ontario Power Generation Inc.: Follow-up on corrective actions taken by the licensee in response to the CNSC focused inspection team report on Pickering NGS-B station's response to the August 14, 2003, blackout. - Oral presentation by Ontario Power Generation Inc.

04-M31.1A 2004-06-30 (1-3-1-7)

Ontario Power Generation Inc.: Follow-up on corrective actions taken by the licensee in response to the CNSC focused inspection team report on Pickering NGS-B station's response to the August 14, 2003, blackout. - Oral presentation by Ontario Power Generation Inc. – Supplementary Information