April 11, 2007

Minutes of the Canadian Nuclear Safety Commission (CNSC) Meeting held Wednesday, April 11, 2007 beginning at 11:26 a.m. in the Public Hearing Room, CNSC Offices, 280 Slater Street, Ottawa, Ontario.

Present:

L.J. Keen, Chair

J. Dosman
A. Graham
A. Harvey
C.R. Barnes
M.J. McDill

K. McGee, Commission Assistant Secretary
S. Maislin Dickson, General Counsel
S. Gingras, Recording Secretary

CNSC staff advisers were: B. Howden, G. Cherkas, É. Langlois, M. Santini, I. Grant, T. Schaubel, C. Moses, D. Howard, D. Humphreys, K. Scissons and D. Bottomley.

Other contributors were:

- Bruce Power: F. Saunders and K. Mombourquette
- Atomic Energy of Canada Limited: B. McGee and M. Wright
- Hydro-Québec: M. Beaudet, A. Ouellet and J-M. Rivet
- Ontario Power Generation Inc.: P. Tremblay and M. Elliott
- New-Brunswick Power Nuclear: G. Thomas, C. Hickman, M. Mersereau and K. Duguay
- AREVA Resources Canada Inc.: B. Pollock, G. Acott and M. Neal

Adoption of the Agenda

1. The agenda, CMD 07-M8, was adopted as presented.

Chair and Secretary

2. The President chaired the meeting of the Commission, assisted by K. McGee, Commission Assistant Secretary and S. Gingras, Recording Secretary.

Constitution

3. With the notice of meeting, CMD 07-M7, having been properly given and a quorum of Commission Members being present, the meeting was declared to be properly constituted.

4. Since the meeting of the Commission held January 25, 2007, Commission Member Documents CMD 07-M7 to CMD 07-M13.1 were distributed to Members. These documents are further detailed in Annex A of these minutes.

Minutes of the CNSC Meeting Held January 25, 2007

5. The Commission Members approved the minutes of the January 25, 2007 Commission meeting without modifications.

STATUS REPORTS

Significant Development Report

6. The Commission considered the Significant Development Report (SDR) no. 2007-2, submitted by CNSC staff as documents CMD 07-M10, CMD 07-M10.A and CMD 07-M10.B.

7. With reference to item 4.1.2 of CMD 07-M10.A on fire water impairment to the Bruce Centre of Site, Bruce Power indicated that it has a full-time (24 hours per day) fully equipped fire department with two pumper tanker trucks that can provide fire extinguishing service at all times. Bruce Power declared having mutual aid agreements with the local fire department, as well as another tanker truck on standby located in nearby Tiburton.

8. OPG explained that there were several consultations with Bruce Power during the period of the impairment. OPG added that several provisions were made, including the stoppage of all hot work and welding activities, and any other activity which could be a potential source of fire. OPG further noted that low level waste received during this period was immediately transferred into the low-level storage buildings which are protected by a CO_2 fire protection system.

9. The Commission sought further information from CNSC staff on the inspection requirements contained in Bruce Power's operating licence. CNSC staff answered that all of the power reactor licences have a requirement for a yearly third-party review, but that this firewater pumping system and supply are external to the Bruce Power reactor site and, therefore, do not have specific third-party inspection requirements.

10. With respect to periodic inspections, Bruce Power noted that the pipe is inspected repeatedly by patrols in the tunnel, and that it could conclude from these inspections that the pipe was in good condition. Bruce Power is of the opinion that the damage appears to have resulted from water freezing inside the pipe, not from problems with the condition of the pipe.

11. The Commission asked for possible reasons why the pipe ruptured while the winter temperatures were not particularly cold. Bruce Power answered that an internal report on possible causes of this event was going to be examined at its review panel the week following the Commission meeting. A possible cause may have been the ventilation in the tunnel that had been increased to resolve mold issues and which may have lowered the temperature, possibly combined with particularly cold weather just before the incident. Bruce Power noted that it has since instituted a different approach to monitoring the tunnel temperature to try to prevent future events of this nature.

12. The Commission asked for reasons why it took three weeks to repair the leak. Bruce Power stated that there were no particular delays, and that three weeks was the time needed to receive the material and perform the work necessary to repair the level of damage that had been caused.

13. In response to a question from the Commission on the possible presence of radioactive contamination, Bruce Power explained that there is no contamination of this nature in the fire water.

14. Further with respect to health and safety, the Commission asked if there had been any hazards to workers from the possible contact of water with electrical wires. Bruce Power answered that there could be a potential hazard if the water level were to reach a junction box, but that this was not the case as the water flow is isolated and sump pumps are used to remove water from the tunnel. Bruce Power concluded that the health and safety of the workers and the public were not compromised by this incident.

15. The Commission asked Bruce Power if it would have had the capability to handle a major fire during the firewater impairment. Bruce Power responded that the firefighting capabilities remained available at all times and that, with the availability of pumper tankers, it has the capacity to respond to a fire expeditiously and bring it under control.

16. The Commission considers that, in light of the discussions concerning this incident, it would be worthwhile for CNSC staff to examine the issues of emergency management for site-wide operations. CNSC staff committed to examining the site-wide integration of systems between both licensees and within CNSC staff.

17. With reference to item 4.1.5 of CMD 07-M10.B on an update on Molybdenum-99 production facility at the Chalk River Facilities, AECL provided more information on the actions taken to minimize the risks of leakage and to permanently restore the tank pressure boundary.

18. In response to a question from the Commission on the schedule for completing the work, AECL indicated that, while the schedule is not yet finalized, it expects the tank to be back into a fully restored pressure boundary mode by the fall of 2007. CNSC staff confirmed that the target date for AECL to effectively seal the thermowells was September 2007.

19. The Commission enquired about the use of corrosion coupons and their ability to predict the incident that occurred in the tank. AECL answered that the coupons are made of materials representative of the main tank, including the heating and cooling materials, but not representative of the plugs at the bottom of the thermowells. As these plugs are made of 304 stainless steel material, known to be susceptible to corrosion when welded, no coupons were included. AECL added that although corrosion coupons did not predict the way the tips of the thermowells corroded, they can predict the way the pressure boundary will behave. CNSC staff concurred with AECL.

20. With respect to item 4.1.1 of CMD 07-M10, Hydro-Québec provided some clarification on the wording of the CMD. Hydro-Québec indicated that it had not experienced a failure in the automatic transfer of control programs to computer Y but, rather, the default conditions for activating the transfer were not met. Hydro-Québec is of the opinion that no automatic controls failed during the event, and that all systems reacted as per their design. Hydro-Québec added that a detailed event report is currently being prepared.

21. In response to the Commission's request for further clarification on the possible reasons for which no transfer was made from one computer to the other, Hydro-Québec explained that the conditions for the transfer include two default analog inputs on two different frames and that, when the incident occurred, only a single input failed. Hydro-Québec added that the event report, which is being evaluated at this time, will recommend changes to the logic or detection of conditions in order to increase the robustness of control programs.

22. The Commission asked whether a problem of this nature could occur without being detected. Hydro-Québec replied that the instrumentation was robust enough to ensure effective monitoring for potential equipment or computer failures. Hydro-Québec further indicated that plant personnel, and not a consultant, diagnosed the problem and replaced the defective analog input card.

23. The Commission asked whether routine inspections of computer systems were conducted to ensure that they performed properly. Hydro-Québec responded that there is a verification program in place, called Check, that continuously verifies the system's analog inputs and that preventive maintenance is performed during plant shutdowns.

24. With reference to item 4.1.3 of CMD 07-M10.A on a trip to Pickering B Unit 5, CNSC staff indicated that it was satisfied with OPG's response to the incident and agreed that returning the reactor to power was safe. CNSC staff added that it was of the opinion that there was minimal risk to the public as a result of this event, and that it will be reviewing the detailed reports which will provide the root causes of the process failures and the proposed follow-ups for correction of these failures.

25. OPG provided more details on the causes of the reactor trip. OPG also indicated that it had been working with the UPS manufacturer to work on the cause of the failure. All three of the UPS circuit boards were replaced, at the recommendation of the UPS manufacturer and OPG staff. OPG is also planning on performing further modifications during the next planned shutdown to reduce the probability of reoccurrence of the event.

26. The Commission asked whether this event could occur at other nuclear generating stations and would be reported to the CANDU Owners Group. OPG answered that there are differences in the design of other plants, but that the operating experience from this event has been transmitted to the nuclear power plants so that they can review and assess their vulnerabilities.

27. In response to the Commission's enquiry, OPG confirmed that all of the UPS's on each unit have been verified to confirm they were in proper working order.

28. With reference to item 4.1.4 of CMD 07-M10.A on a trip to Pickering A Unit 4, CNSC staff indicated that it followed up on the event and that it was satisfied with OPG's response. CNSC staff added that it will be reviewing the detailed root cause assessment and the follow-up actions to the event.

29. OPG explained that the trip occurred due to deficiencies with the control of the heat transport system pressure, which have since been corrected on Unit 4 and confirmed to be correct on the other operating reactor (Unit 1).

30. OPG declared that the reactor trip occurred with Unit 4 at low power, and that there was no impact on the public or on employee safety.

31. OPG reported that the root cause report has recently been issued and will be made available to CNSC staff. OPG further noted that the management team was reviewing the report and will take the necessary corrective actions to prevent a similar event.

Status Report on Power Reactors

32. With reference to CMD 07-M11 on the Status Report on Power Reactors, CNSC staff did not have any additional information or updates.

Mid-Term Status Reports

33. With reference to CMD 07-M12 and CMD 07-M12.A, CNSC staff presented a mid-term report on NB Power's Solid Radioactive Waste Management Facility (SRWMF). CNSC staff provided a brief description of the facility, an update on issues that were raised during the last licence renewal hearing in 2003, an update on the construction activities at the SRWMF, and an overview of the licensee's performance during the current operating licence.

34. NB Power provided a summary of the information submitted in CMD 07-M12.1, which included a brief description of the facility, communication with the public, construction and operational activities, proposed licence amendments and activities planned for the remainder of the licence period.

35. The Commission enquired on the capacity of the facility. NB Power answered that the facility could provide sufficient space to accommodate the waste generated by an additional 25 to 30 years of operation with the refurbished station.

36. The Commission asked whether the containers were ergonomically designed to minimize risks to workers. NB Power answered that the design of the structures included a review of human factors and ergonomics. CNSC staff concurred with NB Power, and confirmed that it reviewed the waste handling equipment and the procedures used to transfer the waste. CNSC staff noted that the operating procedures for the new structures are very similar to the existing structures.

37. The Commission asked several questions regarding NB Power's public information program, and specifically on public information meetings on the expansion project and stakeholder comments on the facility. NB Power explained that several information sessions were held throughout the province and presentations were made at a number of national events. NB Power added that stakeholder comments were dispositioned in the course of the environmental assessment of the project. NB Power also provided details on the nature of the concerns expressed by the stakeholders and added that this information is recorded in its information tracking system.

38. The Commission commented that the information provided on environmental monitoring was not sufficiently detailed, and requested more information on the presence of tritium in groundwater. NB Power explained that it found tritium marginally higher than the background levels in the surface runoff from the waste facility, and noted that it was not a groundwater issue for this facility. NB Power believes, from its investigation, that tritium is leaching from slightly wet material within the structures. NB Power stated that there is continuous monitoring, and that the results are communicated to CNSC staff. NB Power noted that the situation has slightly improved, and that concentrations remain significantly below action levels.

39. At the request of the Commission, NB Power also provided information on the boreholes that were installed as part of the expansion of the facility. NB Power noted that these boreholes would be monitored on an on-going basis as part of the environmental monitoring program.

40. The Commission asked whether there was anything of archaeological interest found during excavation. NB Power responded that, as part of the environmental follow-up program, a licensed archaeologist was hired and no archaeological items were found during excavation.

41. The Commission noted NB Power's interest in combining the waste facility and the power reactor operating licences. The Commission expressed the view that CNSC staff should analyze the feasibility of site-wide licences. CNSC staff noted that it acknowledges the importance to evaluate this potential approach to issuing licences.

42. With reference to CMD 07-M13 and CMD 07-M13.A on the mid-term status report on AREVA Resources Canada Inc.'s Cluff Lake Project, CNSC staff summarized the information provided in the CMD.

43. AREVA presented information on the decommissioned facility, providing details on the physical decommissioning work at the Cluff Lake uranium mine.

44. The Commission enquired on the Athabasca Chipewyan First Nation (ACFN)'s intention to relocate to the area downstream of the Cluff Lake Project. AREVA answered that there were several discussions with the ACFN over the last two years, and that there are indications that the ACFN is nearing final negotiations with the Province of Alberta to pay for the relocation costs. AREVA further indicated that the ACFN would relocate if it obtains proper financing.

45. Considering that the great majority of the decommissioning work is done, the Commission asked for how long the total value of decommissioning would remain in place. CNSC staff answered that it expects AREVA to request lowering the value of the financial guarantee at the time of the next licence renewal in 2009.

46. In response to the Commission's question on any precautions taken to protect people and wildlife from the steep banks of the open pits, AREVA explained that it still occupies the site as a licensee on a full-time basis with obligations to control access to the site. AREVA added that there are no risks associated with the steep banks since the pit is flooded.

47. The Commission further asked about the existence of a schedule for the decommissioning of the remaining camps. AREVA answered that the camps will remain as long as a permanent presence at the site is needed, and that it hopes that sufficient decommissioning progress and satisfactory monitoring results will allow it to come to the Commission in 2009 to request off-site monitoring.

48. The Commission asked for further explanation on CNSC staff's comment that more efforts might have been made to remove contaminated material to Claude Pit. CNSC staff explained that AREVA chose to cover residual contaminated material around the mill area instead of removing it, which would have been CNSC staff's preference. However, CNSC staff stated that the covered area met the closeout criteria, and that it does not expect the residual contamination to be an issue.

49. AREVA disagreed with CNSC staff's comment on the efforts to remove contaminated material and explained that the cover is designed to make casual use of the area. AREVA also pointed out that the follow-up program contains provisions for monitoring the area for long-term migration of contaminants.

50. In response to a question from the Commission on whether there would be enough equipment on site to deal with potential incidents, AREVA explained that all of the necessary equipment and manpower is in place to resolve issues, including erosion problems. AREVA noted its commitment to have a geotechnical engineer perform a complete assessment of the site once per year to identify areas of weakness regarding drainage control.

51. The Commission sought further information regarding a contamination plume that developed from the Claude waste rock pile. AREVA provided an explanation of the groundwater monitoring activities near this area. AREVA added that there is a potential for contaminant transport in groundwater to go to all directions from the Claude waste rock pile, hence the need for an extensive array of monitoring wells.

52. The Commission expressed concerns that the organic sediments at the bottom of Claude Lake, which are used as a natural filter, could in turn become contaminants to the lake. AREVA pointed out that testing performed in a laboratory environment indicated that effective removal was achieved using this filter. AREVA added that it intends to continue monitoring.

53. The Commission enquired if there were any concerns related to the concentration of contaminants in the sediment of Island Lake. AREVA noted that there could be a release of certain chemicals as a result of oxidation processes. AREVA indicated that it implemented monitoring studies at the Island Lake fen to evaluate the potential of oxidation and the release of contaminants.

54. In response to the Commission's comment on the long delays in producing the report on data extracted from fieldwork, AREVA acknowledged the length of time it is taking, but noted that there were some difficulties in performing whole body fish analyses. AREVA stated that it is very close to producing these reports, and that it intends to have them before the end of the second quarter of 2007.

55. With respect to final remediation, the Commission enquired on the next steps to be followed once the reactive capacity of the permeable reactive barrier is reached. AREVA answered that the contaminants would be captured in an insoluble form, as a result of being a reducing environment, and contained with the peat material. CNSC staff recommended that once the reactive capacity of the trench is reached, the site should be decommissioned without trying to rebuild it and build another trench. CNSC staff considers this remediation method to be acceptable.

Closure of the Public Meeting

56. The public meeting closed at 5:07 p.m.

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Chair *Recording Secretary*

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Secretary

APPENDIX A

CMD	DATE	File No

07-M7 2007-02-13 (1-3-1-5)
Notice of meeting held on Wednesday, April 11, 2007 in Ottawa

07-M8 2007-03-28 (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 Wednesday, April 11, 2007

07-M9 2007-03-27 (1-3-1-5)
Approval of minutes of Commission meeting held January 25, 2007

07-M10 2007-02-20 (1-3-1-5)
Significant Development Report no. 2007-2 for the period of January 28, 2007 to February 20, 2007

07-M10.A 2007-03-23 (1-3-1-5)
Significant Development Report no. 2007-2 for the period of February 21, 2007 to March 22, 2007 – Supplementary Information

07-M10.B 2007-03-27 (1-3-1-5)
Significant Development Report no. 2007-2 for the period of March 23, 2007 to March 27, 2007 – Supplementary Information

07-M11 2007-01-09 (1-3-1-5)
Status Report on Power Reactors for the period of January 9, 2007 to March 27, 2007

07-M12 2007-03-27 (37-9-1-0)
Mid-Term Report on NB Power Nuclear's Class IB nuclear facility, the Solid Radioactive Waste Management Facility, under CNSC Waste Facility Operating Licence – Oral presentation by CNSC staff

07-M12.A 2007-03-28 (1-11-27-7)
Mid-Term Report on NB Power Nuclear's Class IB nuclear facility, the Solid Radioactive Waste Management Facility, under CNSC Waste Facility Operating Licence – Contains prescribed security information and is not publicly available

07-M12.1 2007-03-27 (1-3-1-7)
Mid-Term Report on NB Power Nuclear's Class IB nuclear facility, the Solid Radioactive Waste Management Facility, under CNSC Waste Facility Operating Licence – Oral presentation by New Brunswick Power Nuclear Corporation

07-M13 2007-03-27 (22-C1-123-1)
Mid-Term Status Report on AREVA Resources Canada Inc.'s Cluff Lake Project – Oral presentation by CNSC staff

07-M13.A 2007-03-27 (22-C1-123-1)
Mid-Term Status Report on AREVA Resources Canada Inc.'s Cluff Lake Project – Contains prescribed security information and is not publicly available

07-M13.1 2007-03-27 (1-3-1-7)
Mid-Term Status Report on AREVA Resources Canada Inc.'s Cluff Lake Project – Oral presentation by AREVA Resources Canada Inc.