Minutes of the Canadian Nuclear Safety Commission (CNSC) Meeting held Wednesday, December 8 and Thursday, December 9, 2010 beginning at 9:05 a.m. at the Public Hearing Rom, 14th floor, 280 Slater Street, Ottawa, Ontario.

Present:

M. Binder, President
A. Graham
A. Harvey
R.J. Barriault
M. J. McDill

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

CNSC staff advisors were: G. Rzentkowski, T. Schaubel, K. Lafrenière, P. Elder, B. Thériault, K. Klassen, R. Garg, R. Jammal, R. Barker and P. Thompson.

Other contributors were:

- Ontario Power Generation: P. Tremblay, L. Swami, K. Nash, K. Shaver, S. Russell, T. Doran, D. Jones, H. Wake, N. Mahalak and P. Pasquet
- Region of Durham Emergency Management Office: I. Ciuciura
- Emergency Management Ontario: M. Morton
- Bruce Power Inc.: N. Sawyer, M. McQueen and F. Saunders
- Hydro-Québec: C. Gélinas
- NB Power : C. Hickman

Constitution

1. With the notice of meeting, CMD 10-M65, having been properly given and a quorum of Commission Members being present, the meeting was declared to be properly constituted.

   Since the meeting of the Commission held November 3, 2010, Commission Member Documents CMD 10-M65 to CMD 10-M74 were distributed to Members. These documents are further detailed in Annex A of these minutes.

Adoption of the Agenda

2. The revised agenda, CMD 10-M66.A, was adopted as presented.

Chair and Secretary

3. The President chaired the meeting of the Commission, assisted by M. Leblanc, Secretary, and M. Young and D. Major, Recording Secretaries.

Minutes of the CNSC Meeting Held November 3, 2010

4. The Commission Members approved the minutes of the November 3, 2010 Commission Meeting as presented in CMD 10-M67.

STATUS REPORTS

Early Notification Reports

5. With reference to CMD 10-M68, CNSC staff stated that there were no new events to report.

Status Report on Power Reactors

6. With reference to CMD 10-M70, CNSC staff presented the Status Report on Power Reactors, which included updates on the following nuclear generating stations (NGS):
   - Bruce A and Bruce B;
   - Darlington;
   - Gentilly-2;
   - Pickering A and Pickering B; and
   - Point Lepreau.

7. CNSC staff provided further details regarding Gentilly-2, which was operating at 94% of full power; Pickering A Unit 4, which was returning to service following a forced outage and was at 0.1% of full power; and Pickering B Unit 7, which was returning to service following a planned outage.

8. The Commission asked for more information regarding the forced outage at Pickering A. CNSC staff responded that the outage was due to governor valve oscillations that may affect stability of the Primary Heat Transport system. A representative from Ontario Power Generation Inc. (OPG) explained that they repaired mechanical issues with the governor valves. OPG noted that the outage and governor valve repair were not related to previous significant development reports.

9. The Commission asked for more information regarding the fuel channel installation at Bruce A Unit 2. CNSC staff responded that Bruce Power had installed 380 fuel channels and had 100 remaining to be installed. CNSC staff noted that they expect Bruce

Power to complete the fuel channel installation in early 2011.

Updates on items from previous Commission proceedings

Ontario Power Generation Inc. (OPG): Update on Requests and Actions from the Commission regarding Pickering A and B NGS

10. With reference to CMD 10-M71, OPG presented information regarding the Update on Requests and Actions from the Commission regarding Pickering A and B NGS. OPG presented information on the Pickering B Continued Operations Plan (end-of-life management), Pickering fish impingement and siren installation in Pickering, Ontario. CNSC staff provided comments regarding the Pickering B Continued Operations Plan.

11. The Commission asked for more information regarding the fitness for service of the Pickering B NGS. OPG responded that they have a life management plan to validate fitness for service. OPG noted that the fuel channels are the most life-limiting component of the NGS, and that they need to be demonstrated to be fit for service. OPG stated that they are committed to ensuring that plant will continue to be maintained and run safely. CNSC staff stated that in 2014 Pickering B Will approach its assumed design life, and that some pressure tubes will have to be replaced to ensure continued safe operation beyond 2014.

12. The Commission asked for more information regarding OPG's March 2011 update to the Commission on the Continued Operations Plan for beyond 2014 to 2020. CNSC staff responded that the March 2011 update will be a high-level regulatory approach and noted that there will be more details in OPG's licence renewal application in 2013.

13. The Commission inquired about OPG's planning regarding employment levels during the safe storage and decommissioning phases of the Pickering A and B life cycle, including socio-economic effects. OPG responded that they have held preliminary discussions with stakeholders and employee representatives, and that socio-economic factors are being considered and are included in OPG's planning.

14. The Commission noted that OPG included environmental assessments as part of the life cycle management plan, and asked about any future environmental assessments that may be necessary over the lifetime of the plant. CNSC staff responded that any project may trigger an environmental assessment, so CNSC staff will assess the scope of each project and determine whether and when an environmental assessment is required. CNSC staff further stated that they would be preparing a regulatory oversight plan,

including consideration for environmental assessments, based on what OPG has presented. OPG noted that, whether an environmental assessment is conducted or not, they will be consulting the public on the work that will be performed in the future.

15. The Commission asked if the Province of Ontario's recent long-term energy plan would affect OPG's Continued Operations Plan. OPG responded that the Province's plans are consistent with OPG's Continued Operations Plan. CNSC staff stated that they will continue their regulatory oversight of the Pickering NGS to ensure that their operation remains safe, no matter what age the reactors are. CNSC staff noted that they will likely increase the frequency of their inspections, with a focus on fitness for service and human performance.

16. The Commission asked if OPG has the funds available for the decommissioning phases of the Continued Operations Plan. OPG responded that the funds are set aside and they are monitored. OPG noted that they are reviewed every five years and the next review will be in 2012. CNSC staff stated that OPG currently has $12 billion in funds available for decommissioning. CNSC staff noted that all of the nuclear generating station operators have to pay money into a separate fund on an annual basis for the management of the fuel waste that they generate.

17. The Commission asked for more information regarding OPG's fish impingement strategy and the thermal plume from the Pickering NGS. OPG responded that they had completed a study on the effects of the thermal plume and provided it to CNSC staff. OPG noted that the study confirmed that the effects are consistent with what was predicted in the Pickering B environmental assessment, and that no additional work is required at this time.

18. The Commission asked OPG why barriers to mitigate fish impingement are removed in the winter and not used year-round. OPG responded that while the net, which is a two-kilometre ring around the water intake, is monitored year-round, it would be damaged in the winter, and it is impractical to maintain it during the winter due to the extent and amount of work required. OPG noted that they do not anticipate a significant amount of impingement during the winter.

19. The Commission asked for more details regarding the performance of the net. OPG responded that the net mesh is small (under half an inch), and that the maintenance of the net includes a power sprayer to remove algae and zebra mussels.

20. The Commission asked whether Fisheries and Oceans Canada (DFO) is satisfied with the work that OPG has done regarding fish

impingement. OPG responded that they will be presenting DFO with the results of the monitoring in February 2011, and that they expect to present the CNSC with a formal report in the fall of 2011. OPG noted that they could provide the Commission with an update on this matter in March 2011. The Commission expects OPG to provide more information on this subject in March 2011.

ACTION by March 2011

21. The Commission asked for more information regarding the use of sirens in the vicinity of the Pickering NGS and what other public notification plans OPG could have. OPG responded that the sirens are phase one of its public notification plan. OPG noted that they are also looking at newer tools and technologies to augment its public notification plan.

22. The Commission asked for more information from the Durham Region Emergency Management Office. The Durham Region Emergency Management Office responded that the Provincial government's Provincial Nuclear Emergency Response Plan requires that 100 percent of the people within a three-kilometre zone of the nuclear facility must be notified within 15 minutes in the event of an emergency. The Durham Region Emergency Management Office stated that sirens remain the best way to achieve this. The Durham Region Emergency Management Office further stated that, of the nine sirens needed to meet the public notification target, five sirens remain to be installed. The Durham Region Emergency Management Office stated that these sirens will be installed by March 2011. The Durham Region Emergency Management Office noted that they will test the nine sirens to ensure that they meet the public notification target, and that they would install additional sirens if they are required. The Commission expects that OPG and CNSC staff will provide an update on this matter in March 2011. The Durham Region Emergency Management Office offered to provide a presentation on offsite emergency preparedness.

ACTION by March 2011

Alpha Radiation Contamination Update for CANDU Nuclear Power Plants

23. With reference to CMD 10-M72, CNSC staff presented information regarding the Alpha Radiation Contamination Update for CANDU Nuclear Power Plants. Bruce Power Inc. (Bruce Power) provided an update on the 2009 alpha contamination event at Bruce A Unit 1 and the improvements they have made as a result of the event. CNSC staff also provided an update on the Bruce Power alpha contamination event, as well as information regarding corrective actions that all nuclear power plant licensees must have in place to enhance their radiation protection programs. OPG, Hydro-Quebec and NB Power Nuclear (NB Power) also provided comments on the matter.

24. The Commission sought further details regarding the doses received by workers during the Bruce Power alpha contamination event. Bruce Power responded that they have received results for 551 of the 557 potentially-exposed employees, and the six remaining results are expected to be low doses. Bruce Power further stated that it is not possible to graphically represent the worker exposures because the work was conducted over a four-week period and workers were in many different locations over this time period. Bruce Power noted that the primary exposure occurred for a small group of workers working on the fuelling machine.

25. The Commission asked for more information regarding the retrospective analysis that Bruce Power is performing. Bruce Power responded that they have completed about half of the sampling of the nearly 800 workers selected for retrospective analysis, and that they expect to have results by the fall of 2011.

26. The Commission inquired about the status of the long-term corrective action regarding personal protective equipment and clothing for employees to prevent future exposures. Bruce Power responded that protective clothing has been in place since January 2010 but CNSC staff approval of the associated procedural documentation, which was submitted in early December, is currently outstanding. CNSC staff concurred with Bruce Power. Hydro-Quebec stated that they have temporary procedures in place to ensure the safety of employees until their documentation is completed. NB Power stated that they are also using protective equipment, and that they are reviewing their programs to see if they can make any improvements.

27. The Commission asked for more information regarding fuel handlers as they have been identified as having potentially been exposed to alpha radiation. Bruce Power responded that a small number of the fuel handlers who have been tested have been identified as having been exposed to alpha radiation, so Bruce Power is investigating their historical cumulative doses, as well as performing additional sampling of other workers of the same category. Bruce Power noted that they tested several worker groups and the only group that tested positive for alpha radiation was the fuel handler maintenance staff. Bruce Power further noted that, due to the greater risk involved in fuel handling, those workers have been protected and monitored.

28. The Commission asked if Bruce Power will be performing follow-up testing on employees, and if Bruce Power tracks former employees for this purpose. Bruce Power responded that they would perform follow-up testing after a year to ensure that the levels are as expected. Bruce Power further stated that they have a system in place to notify former workers or contractors. The Commission expects Bruce Power to provide an update on the

ACTION
by
Spring 2012

follow-up testing in approximately one year.

29. The Commission asked if other licensees have had any experience regarding alpha radiation contamination. Hydro-Quebec stated that they have detected alpha radiation surface contamination but they have not had any cases of a worker testing positive. NB Power responded that they tested five individuals from the fuel handling group who are within NB Power's highest lifetime dose group, and they had no evidence of alpha radiation contamination. OPG stated that they have initiated a retroactive testing program and that they are performing analysis to determine which workers will require further testing.

30. The Commission noted that the alpha radiation contamination event at Bruce Power was a result of refurbishment work, and asked why NB Power had not had similar issues. Bruce Power responded that the event arose due to the timing of the work. Bruce Power stated that beta radiation is more easily detected and in greater quantities than alpha radiation, and protection against beta radiation will also protect against alpha contamination. Bruce Power further stated that alpha radiation is longer lasting than beta radiation, and, in this case the beta radiation was low at the Bruce Power unit, which led to the contamination event. Bruce Power stated that, as a result of this event, they have also updated their controls in the operating units to avoid exposure to alpha radiation.

31. The Commission inquired about the development of a lab for testing workers for alpha contamination. Bruce Power responded that they have initiated a project to pursue this over the next two years. Bruce Power noted that they expect to provide an update to the CNSC on this matter, as well as on their worker testing regime, by the end of January 2011.

32. The Commission asked for clarification regarding the dosimetry. CNSC staff responded that workers wear dosimeters to measure radiation outside of the body, and urinalysis and fecal bioassay are performed to measure radionuclides in the body. CNSC staff noted that the Health Canada National Dose Registry is a directory of all doses received by workers. Bruce Power stated that the only way to measure the alpha dose to an individual is through a bioassay sample. Bruce Power noted that air samplers are used to detect the presence of alpha radiation in the workplace.

33. The Commission asked if the information about this event has been shared internationally. CNSC staff responded that they have shared information with international regulators through the International Atomic Energy Agency's Web site and through a CANDU Senior Regulators meeting. Bruce Power responded that information has also been shared with operators through the CANDU Owners

Group.

34. The Commission, noting that the World Association of Nuclear Operators (WANO) had raised the need to improve radiation protection programs in relation to alpha radiation monitoring, inquired about operating experience. Bruce Power responded that they review operating experience on a daily basis, and explained that because there is limited operating experience for refurbishment projects, Bruce Power is now providing operating experience to others. CNSC staff stated that they incorporate international regulatory experience into their regulatory requirements, and noted that they are being regularly reviewed.

INFORMATION ITEMS

Nuclear Waste Management Organization – Status of Implementing Adaptive Phased Management

35. With reference to CMD 10-M73, the Nuclear Waste Management Organization (NWMO) provided an update on the implementation of a Canadian plan for the long-term management of used nuclear fuel. The NWMO presented an overview of the project, which included the results of the study of alternatives, a description of Adaptive Phased Management (APM), an overview of the technical program, the site selection criteria, the status of community engagement, international exchange agreements, pre-project review, and transportation plans. CNSC staff presented a high-level overview of CNSC's role and involvement in the pre-project phase of the NWMO's APM project.

36. In response to a question from the Commission in regards to how the NWMO plans to maintain a leadership role over a lengthy project timeline, the NWMO explained that programs to train and develop young employees, as well as university chairs, are in place to promote organizational growth.

37. The Commission inquired regarding the independence of the organization on completing project requirements. The NWMO explained that their mandate is clearly defined by the federal government and, although the Minister of Natural Resources can, through Parliament, comment on the plan in place, the NWMO has the freedom to operate within that plan.

38. The Commission also inquired about the extent of public awareness of the plan for the long-term storage of used nuclear fuel. The NWMO responded that information sessions had been held across the country to speak broadly to interested Canadians. The NWMO further stated that they conducted telephone surveys to monitor and track public expectations of the NWMO as an

organization. The NWMO noted that they publish journal articles and that they are promoting public awareness through the media.

39. The Commission questioned the NWMO's views on the challenge of obtaining public acceptance associated with transporting high-level nuclear waste through communities to a deep geological repository site and asked what plans are in place to deal with this challenge. The NWMO responded that they understand the extent of the challenge and that they understand that a feasibility study must be performed during the site selection process to investigate issues regarding questions of transportation, logistics and communications along the transportation route.

40. In regards to the transportation aspect of the APM project, the Commission asked the NWMO if they understand the magnitude of the issue of transporting nuclear fuel waste from the utilities to the repository site. The NWMO responded that they recognize the challenging aspect of the work and that they have plans in place.

41. The Commission inquired about the licensing requirements of the APM project. CNSC staff explained that the APM project will require licensing and that the transportation plan will be included in the public hearing.

42. The Commission asked who the lead agency would be with regards to the environmental assessment (EA) for the APM project. CNSC staff responded that the CNSC would be the responsible authority and would play an important role in the EA for the project.

43. The Commission requested information on the source of funding to the NWMO for the APM project. The NWMO explained that utilities that produce used nuclear fuel are required to contribute to a trust fund, and to approve and provide the necessary funding. The NWMO also clarified that the funds are independent investments; separate from the utilities' decommissioning guarantees, and that the utilities also have a separate fund for the NWMO's day-to-day operations.

44. The Commission requested further information regarding the NWMO's and the CNSC's involvement with international organizations. The NWMO stated that they have exchange agreements with international organizations in Sweden and Finland, and that they are actively involved in demonstrations of underground technology, experiments and research at international laboratories. CNSC staff added that they are involved with international organizations from the prospective of geo-science and regulatory processes.

45. The Commission also asked the NWMO if the geology of the Swedish and Finnish repository sites is similar to Canadian

geology. The NWMO confirmed that the geology at the Swedish and the Finnish repository sites is of the nature that is expected in Canada. The Commission further inquired about the exchange of information with the United States. The NWMO responded that, while the geology in the United States is different, there is an exchange of information with that country.

46. The Commission asked if other CANDU owners, such as China or India, are looking into the use of a deep geological repository for the storage of used nuclear fuel. The NWMO responded that China has shown interest in using a deep geological repository. CNSC staff noted that both China and India are members of the international nuclear safety conventions.

47. The Commission asked for more information regarding the project timeline. The NWMO responded that the timeline defined for this project is similar to that of other deep geological repository projects in other countries, such as Finland and Sweden. The NWMO explained that a large amount of time is required during the pre-project phase for educating potential host communities.

48. The Commission questioned the site selection process, asking if military bases could be considered as a host site for the deep geological repository. The NWMO responded that Crown land could be considered, however, the Crown would have to come forth and show interest in becoming a host site. The NWMO added that a project of this type on Crown land has not been successful in the past. The NWMO is looking for a willing and informed community to come forth.

49. The Commission asked how the NWMO is planning to adapt to changing technology over the span of the APM project, due to the lengthy timeframe for project completion. The NWMO responded that changes in technology are built into their program and that they survey emerging technologies on an annual basis. The NWMO stated that they have also included the concept of retrievability of stored fuel in their plan in the event that a fuel recycling method is developed in the future.

50. The Commission questioned whether the long time frame for the APM project is due to a lack of urgency and asked if the NWMO thought there would be more acceptance from Canadian communities once this type of project is proven internationally. The NWMO agreed that the long timeframe is most likely due to the fact that Canadian utilities produce sound and safe storage structures for used fuel. However, the NWMO added that Canadian utilities also recognize the need for a deep geological repository and are showing commitment to that extent. The NWMO also agreed that public confidence should increase when the method is

proven internationally.

51. The Commission asked CNSC staff if there is regulatory clarity between the CNSC and Transport Canada for the transportation of spent nuclear fuel to the repository site. CNSC staff explained that the CNSC has a Memorandum of Understanding with Transport Canada on this matter and that, at the staff level, they are working together to establish regulatory clarity.

52. The Commission inquired about the use of rosewood in the shipping containers and the impact protection it provides. The NWMO explained that rosewood is the accepted material for transportation due to its hard properties. The Commission sought further information regarding the transportation cask. The NWMO explained that, in the late 1980's, a transportation cask was developed, built, and tested by Ontario Hydro and certified by the CNSC and that this type of transportation container remains certified to this day, permitting the transport of nuclear fuel waste off-site. The NWMO continued by saying that they are focussing on defining the actual transportation route and obtaining social acceptance.

53. The Commission asked CNSC staff if there is a plan to update or revise the design of the transportation cask to current standards. CNSC staff responded that the design has to be recertified every five years to ensure that it meets the current regulations for the transportation of nuclear fuel waste. CNSC staff noted that there is a grandfathering clause permitting the recertification of the transportation container as long as there have not been any hardware changes, which applies in this case.

54. The Commission emphasized the importance of the transportation container for the APM project and asked if tests are conducted on the container as part of the recertification process. CNSC staff explained that, during certification, the transportation container must meet the requirements under international regulations. CNSC staff added that safety requirements are updated to international standards during each certification process review. The Commission requested a presentation on the certification process and the requirements. ACTION by March 2011

55. The Commission asked CNSC staff to clarify how fuel bundles will be taken out of the current storage containers and put in transportation containers. CNSC staff responded that the details will be sorted out in the future as the project progresses, and assured the Commission that the containers that cannot be moved to the deep geological repository can be unloaded to enable the transfer of spent fuel.

56. The Commission asked for information regarding the research budget and asked if research results are published. The NWMO explained the research budget and said that research results are peer-reviewed and published. The NWMO stated that technical publications are also available on the company's web site and copies are submitted to CNSC staff and to national organizations.

57. Finally, the Commission inquired as to how the NWMO defines a host community's "social acceptance" for their project. The NWMO responded that they require a compelling demonstration of willingness from a host community and broad community engagement. The NWMO noted that they are also looking for social acceptance in the region surrounding the host community.

STATUS REPORTS (CONTINUATION)

Ontario Power Generation (OPG): Interim Status Report on OPG's Darlington, Pickering and Western Waste Management Facilities

58. With reference to CMD 10-M74 and CMD 10-M74.1, CNSC staff and representatives of OPG presented a consolidated interim status report of the operational performance at OPG's Darlington Waste Management Facility (DWMF), Pickering Waste Management Facility (PWMF) and Western Waste Management Facility (WWMF) for the period from June 2007 to June 2010.

59. OPG provided an overview of their safety performance, their management systems and their improvement initiatives. OPG also provided an explanation of their financial guarantee and decommissioning costs pursuant to questions raised during the NWMO's earlier presentation (CMD 10-M73).

60. CNSC staff reported that OPG's waste management facilities operated in a satisfactory manner during the review period, and that OPG addressed issues that arose in a timely manner.

61. The Commission asked OPG how they qualified ultrasonic testing which has replaced radiography for the inspection of the dry storage container lid closure welds. OPG responded that ultrasonic testing was put in place following an extensive testing program. CNSC staff added that OPG adequately demonstrated that the new testing method is equal to or better than radiography in detecting flaws.

62. The Commission requested a description of the changes that were made to the design of the dry storage container and asked if the new design was recertified to reflect the changes. OPG listed the changes and explained that they were completed to reduce worker exposure to radiation. CNSC staff responded that the CNSC is not

required to certify packaging used for on-site transportation and therefore recertification was not required following the design change. However, CNSC staff stated that they did review the design changes and confirmed that the changes will improve radiation protection.

63. The Commission asked OPG whether the resin liner remediation project was executed as part of an expected aging management event or because the design did not perform as originally expected. OPG responded that, during an inspection, deterioration of the wall thickness was found to be occurring earlier than they had anticipated, which prompted them to take corrective measures. CNSC staff added that when OPG evaluated their resin liners, they found no indication of any significant degradation and there was no evidence of contamination being released. CNSC staff stated that OPG took proactive measures to deal with the issue before it became a problem.

64. The Commission asked for the extent of the liner deterioration and the new design life with the improvements. OPG responded that the degradation was found before the end of the original life expectancy of the resin liners, but could not provide an exact number of years. OPG noted that the new life expectancy is 50 years.

65. The Commission asked where the resin liner storage is located. OPG responded that they are at the Western Waste Management Facility.

66. The Commission inquired about the Dry Storage Modules (DSM) and asked why a rubber membrane was applied to the surface of the asphalt and what the inspection plan is for this rubber membrane. OPG staff responded that the rubber membrane was applied after deterioration of the paint on the asphalt area around the DSMs was identified during a CNSC inspection. OPG explained that the combination of the asphalt and the rubber membrane are used as a primary sealant to contain spills from the DSMs. OPG also confirmed that there is an inspection program to ensure the integrity of the rubber membrane.

67. The Commission asked for information regarding the covers that were found missing on the DSMs. OPG explained that the covers found missing were inspection port covers that do not provide a containment boundary or radiological barrier to the DSMs. CNSC staff agreed with OPG, and stated that the covers are cosmetic covers and that there is no evidence of any structural problem.

68. The Commission asked OPG how long they can continue operating without having the need for a deep geological repository (DGR) for

low and intermediate level waste. OPG responded that if additional storage space is required prior to having a DGR available, they will proceed with additional environmental assessments to expand the existing storage sites.

69. On the same topic, the Commission asked if the DGR for low and intermediate level waste, as proposed by OPG, is satisfactory to address the volume and quality of waste and if a national DGR would be useful for OPG. OPG responded that the currently proposed DGR will address all the generated waste for the operation of the reactors in the province of Ontario and is for OPG liability only.

70. The Commission asked for clarification regarding OPG's focus on Human Performance. OPG clarified that they are focussing on both psychological and physical ability to work.

71. The Commission inquired about how OPG plans to restrict access to existing buildings from contractors working on additional storage buildings. OPG explained that the qualification of contract personnel (depending on their level of work) is required to meet the same requirements as nuclear energy workers.

72. The Commission asked OPG for information regarding steam generator storage at the WWMF and whether there is enough space on site to store all 16 steam generators. OPG responded that the steam generators are located in a steam generator storage building, a refurbishment waste storage building and a low-level waste building, and confirmed that these buildings have enough storage capacity for the refurbishment of Bruce A units 1 and 2. OPG noted that, to accommodate further refurbishments of the Bruce Power reactors, additional buildings will be built. OPG also added that if the Darlington refurbishment proceeds, a storage building will be built specifically for components from that facility.

73. The Commission asked if groundwater contamination has been identified anywhere onsite through the monitoring of the groundwater wells. OPG responded that there was an increase in tritium a number of years ago in well number 231 that did not reach the action level. OPG noted that they investigated the matter and found that this was the only well showing increased sampling results for tritium. CNSC staff added that the information regarding the wells was not included in the CMD for this meeting because the trend associated with well number 231 has remained relatively flat; showing no evidence of potentially exceeding the action level.

74. The Commission asked if traces of tritium remain in monitor well 231. CNSC staff confirmed that there are still traces of tritium but that it has never exceeded the action level for tritium on those

wells.

75. The Commission asked if, based on the sample results at other wells, a plume of tritium is or has been observed. CNSC staff responded that the slightly elevated concentration of tritium was only observed at that one sample well.

76. The Commission also asked how often the wells are tested and what type of reporting is made to the CNSC. OPG responded that all monitor wells are sampled on a monthly basis and the results for well 231 are sent to the CNSC on a monthly basis. OPG added that they have also performed an extensive pathway analysis in the last 12 months to better understand the pathway of tritium through the WWMF, and the report associated with this analysis was recently submitted to the CNSC.

77. The Commission requested that CNSC staff submit OPG's well monitoring results over the last 12 months to the Commission. ACTION due March 2011

78. In response to a question from the Commission asking if all of the high-level waste is now stored in the second design of dry storage containers OPG explained that all spent fuel is currently stored in both the first design and the second design of the dry storage containers.

79. Further, the Commission asked if there was a necessity to modify the first design. OPG responded no, because the first design is approved and certified, as is the second design. OPG noted that the design changes were only to reduce the dose and hazards to the workers.

80. The Commission inquired about the frequency of inspections of low-level waste storage. OPG responded that they have an aging management plan for all containers used for low-level waste where corrective action plans are prepared. OPG noted that, if the integrity of the container is in question, OPG overpacks the container to assure continued safe storage.

81. The Commission asked if consolidating the reporting for all three waste management sites will have an impact on the management itself of the three facilities and if that would have an impact on the security or the environment. OPG responded that ongoing operation will continue to meet the conditions of the operating licences.

82. The Commission asked CNSC staff to elaborate on how they are going to ensure that the importance of problems found at specific sites is not downplayed as a result of consolidating the reporting on all three sites. CNSC staff responded that inspection and

compliance verification activities will continue at all three sites, and when issues arise at one site, CNSC staff will ensure they are corrected by OPG at all three sites.

83. Further, the Commission asked if there would be a clear indication at which site problems originated in the consolidated report. CNSC staff replied that they would indicate where the problem was found, but the overall performance and rating will be for the three sites collectively to show the performance of OPG's programs.

84. The Commission questioned how licence renewals will be affected now that the reporting is consolidated and asked if a common licence renewal date should be chosen. CNSC staff noted that they have started looking into this matter and are having discussions with OPG as to whether or not the facilities should have one common licence. CNSC staff stated that they will present a recommendation as to whether OPG's three licences should be consolidated into one at the next licence renewal. ACTION due October 2012

85. The Commission also questioned if CNSC staff would have enough time to complete inspections and reporting if a consolidated approach is used for reporting. CNSC staff stated that a consolidated approach is better as it provides more time to work on compliance rather than reporting.

86. The Commission requested an explanation regarding the significant increase in stored activity in certain years, such as 2008. OPG explained that during 2007 and 2008, refurbishment waste and the steam generators were being received from Bruce Power, and the activity in the containers was significantly higher than any other waste OPG had received.

87. Further, the Commission asked if shipments from Darlington and Pickering were received at the WWMF on a regular basis. OPG responded that there is a constant transfer of low and intermediate level waste to the WWMF.

88. The Commission asked if OPG communicates with the public regarding these shipments and if there have ever been any issues or complaints associated with waste transportation. OPG explained that notification is given to the communities along the transportation routes and that these communities are kept informed about OPG's transportation program. OPG also explained that they conduct surveys and the results show that the public is aware of OPG's transportation activities and is generally satisfied with the level of information that is provided by OPG.

89. The Commission asked OPG if there are any shipments of spent fuel from Darlington or Pickering. OPG responded that they do transport spent fuel in small quantities for research or inspection

purposes using a Type B transportation package. OPG noted that they do not use the irradiated fuel cask that was mentioned in the NWMO presentation earlier in the meeting.

90. The Commission asked if low-level material has been shipped to the United States and asked if the public was informed of those shipments. OPG confirmed that they periodically send liquid waste for incineration and Bruce Power sends low-level waste to the United States on a regular basis. OPG noted that the public is informed of these shipments and that the shipments are by land.

91. Finally, the Commission inquired about the nature of the refurbishment of PWMF Phase 1. OPG explained that the refurbishment is really a renovation of the building in order to extend the life of the facility, given that a DGR may not be available for decades.

Closure of the Public Meeting

92. The meeting closed at 12:37 p.m. on December 9, 2010.

Recording Secretary — JAN 2 6 2011 — Date

Recording Secretary — JAN 2 6 2011 — Date

Secretary — JAN 2 6 2011 — Date

APPENDIX A

CMD DATE File No

10-M65 2010-11-10 (Edocs 3632282)
Notice of Meeting of December 8 and 9, 2010

10-M66 2010-11--24- (Edocs 3639222)
Agenda of the meeting of the Canadian Nuclear Safety Commission to be held on Wednesday and Thursday, December 8 and 9, 2010, at the Public Hearing Room, 280 Slater Street, Ottawa, Ontario.

10-M66.A 2010-12-02 (Edocs 3642609)
Updated agenda of the meeting of the Canadian Nuclear Safety Commission to be held on Wednesday and Thursday, December 8 and 9, 2010, at the Public Hearing Room, 280 Slater Street, Ottawa, Ontario.

10-M67 2010-12-01 (Edocs 3641397)
Approval of Minutes of Commission Meeting held November 3, 2010

10-M67.A 2010-12-07 (Edocs 3644738)
Approval of Minutes of Commission Meeting held November 3, 2010

10-M68 2010-11-23 (Edocs 3639236)
Early Notification Report: No new events to report

10-M70 2010-12-01 (Edocs 3641695)
Status Report on power reactor units as of December 1st, 2010

10-M71.1 2010-11-30 (Edocs 3641714)
Update on items from previous Commission proceedings:
Ontario Power Generation: Update on Requests and Actions from the Commission regarding Pickering A and B Nuclear Generating Stations – Oral presentation from Ontario Power Generation

10-M72 2010-11-23 (Edocs 3628643)
Alpha Radiation Contamination Update for CANDU Nuclear Power Plants – Oral Presentation by CNSC staff

10-M72.A 2010-12-01 (Edocs 3640579)
Alpha Radiation Contamination Update for CANDU Nuclear Power Plants – Oral Presentation by CNSC staff – Supplementary Information

10-M72.1 2010-12-03 (Edocs 3643489)
Alpha Radiation Contamination Update for CANDU Nuclear Power Plants – Oral Presentation by Bruce Power

10-M73 2010-11-18 (Edocs 3639154)
Nuclear Waste Management Organization – Status of Implementing Adaptive Phased Management – Oral presentation by the Nuclear Waste Management Organization

10-M73 2010-12-08 (Edocs 3599582)
Nuclear Waste Management Organization – Status of Implementing Adaptive Phased Management – Oral presentation by CNSC staff

10-M74 2010-11-23 (Edocs 3638486)
Ontario Power Generation: Interim Status Report on OPG's Darlington, Pickering and Western Waste Management Facilities – Oral presentation by CNSC staff

10-M74.A 2010-11-22 (Edocs 3597431)
Ontario Power Generation: Interim Status Report on OPG's Darlington, Pickering and Western Waste Management Facilities – Oral presentation by CNSC staff – Contains prescribed security information and is not publicly available

10-M74.1 2010-11-18 (Edocs 3637064)
Ontario Power Generation: Interim Status Report on OPG's Darlington, Pickering and Western Waste Management Facilities – Oral presentation by Ontario Power Generation

10-M74.1A 2010-11-30 (Edocs 3641688)
Ontario Power Generation: Interim Status Report on OPG's Darlington, Pickering and Western Waste Management Facilities – Oral presentation by Ontario Power Generation – Supplementary Information