December 5 and 6, 2007

Minutes of the Canadian Nuclear Safety Commission (CNSC) Meeting held Wednesday, December 5, 2007 beginning at 1:09 p.m. and Thursday, December 6, 2007 beginning at 8:36 a.m. in the Public Hearing Room, CNSC Offices, 280 Slater Street, Ottawa, Ontario.

Present:

L.J. Keen, Chair
A. Graham
C.R. Barnes
M.J. McDill
A. Harvey

M. Leblanc, Commission Secretary
S. Maislin Dickson, Acting General Counsel
M. Young, Recording Secretary

CNSC staff advisers were: B. Howden, H. Rabski, P. Thompson, P. Elder, T. Schaubel, T. Viglasky, K. Lafrenière, B.R. Ravishankar, M. O'Brien, K. Scissons, D. Howard, J. Mecke and P. Corcoran

Other contributors were:

- Cameco Corporation: T. Gitzel, A. Oliver, J. Jarrell, A. Thorne, D. Neuberger and K. Vetor
- Bruce Power: F. Saunders and P. Hunt
- Ontario Power Generation Inc.: M. Elliott, M. Tulett
- New Brunswick Power Nuclear: G. Thomas, D. Parker, K. Stratton, R. Eagles, K. Duguay and C. Hickman
- Atomic Energy of Canada Limited: B. McGee, B. Shorter, D. Scott
- Hydro-Québec: N. Sawyer
- Zircatec Precision Industries Inc.: A. Pant
- Golder Associates: T. Mclelwain

Adoption of the Agenda

1. The revised agenda, CMD 07-M36.B, was adopted as presented.

Chair and Secretary

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

Constitution

3. With the notice of meeting, CMD 07-M35, 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 September 13, 2007, Commission Member Documents CMD 07-M35 to CMD 07-M44 were distributed to Members. These documents are further detailed in Annex A of these minutes.

Minutes of the CNSC Meeting Held September 13, 2007

5. The Commission Members approved the minutes of the September 13, 2007 Commission Meeting without modifications. **DECISION**

6. The Chair noted that the portion of the minutes dealing with regulatory documents under agenda item 5 and as presented in CMD 07-M33, 07-M33.A, 07-M33.B and 07-M33.C of the September 13, 2007 meeting were approved at a previous meeting of the Commission held on October 5, 2007.

7. The Commission sought an update on the status of Ontario Power Generation Inc.'s (OPG) Pickering Nuclear Generating Station (NGS) A Units 1 and 4. OPG stated that it had completed interim modifications and verified that other similar issues did not exist at the Pickering NGS A. OPG stated that, following CNSC approval of the interim modifications to the Inter-Station Transfer Bus (ISTB), Unit 4 was restarted while Unit 1 remained shut down as it went into its planned outage.

8. OPG noted that it has completed a root cause evaluation of the event and has since put in place a third-party design review of all important design work at Pickering A.

9. The Commission sought comments from CNSC staff concerning OPG's update on Pickering A. CNSC staff stated that it has performed a focused inspection relating to OPG's actions and corrective actions. CNSC staff further stated that it will continue to follow the progress of the installation of the permanent solution and will report back to the Commission concerning this matter at the next scheduled meeting. **ACTION**

10. The Commission inquired about the independent facilitators at the facility. OPG responded that they are all former OPG employees except for one. OPG further noted that it does not currently have anyone outside of the nuclear industry as a facilitator. CNSC staff noted that there is a concern that most of the independent facilitators are former OPG employees, and CNSC staff will consider a follow-up on that issue in its report.

11. With respect to the implementation of a new behaviour program at the Pickering NGS A, the Commission asked OPG what systems it has in place to measure the outcomes of this program. OPG responded that it will track its progress in this area in monthly reports. OPG also noted that the behaviour change is aimed at supervisors and managers.

12. The Commission noted that OPG should consider its actions on this matter within the broader structure of safety management. In this respect, the Commission expects OPG to develop a plan to address the broader implications of its actions within the company's corporate safety management program.

STATUS REPORTS

Significant Development Report

13. The Commission considered the Significant Development Report (SDR) no. 2007-5, submitted by CNSC staff as documents CMD 07-M38, 07-M38.A and 07-M38.B.

14. With reference to item 4.1.3 of CMD 07-M38 on the Update on Order Issued to ESI Resources Limited (ESIRL) and Follow Up, the SDR was submitted by CNSC staff to inform the Commission on the CNSC designated officer Order issued to Western Cooperative Fertilizers Limited (Westco) on November 19, 2007. The Commission further noted that, pursuant to the requirements of the *Nuclear Safety and Control Act*, the Order has been referred to the Commission for review and an opportunity to be heard on this matter will be provided to the affected party. The Commission stated that in order to ensure fairness and the integrity of the opportunity to be heard at a future proceeding, the Commission will consider the matter at that time.

15. With reference to item 4.1.1 of CMD 07-M38 on the Update on Containment Isolation Due to a Defective Fuel Bundle at Bruce B Nuclear Generating Station, CNSC staff made the following correction to the SDR: the bundle was removed in mid-October, not September 11 as was indicated in the SDR. The latter date was when the defect was discovered. CNSC staff explained that the time between these two dates represented the time needed to find the specific channel containing the defect and to remove the defect. CNSC staff reported that further bundles have been found to have visible weld defects, which will be subject to further examination.

16. CNSC staff provided the Commission with an update on the actions taken by the licensee and the CNSC since the writing of the SDR. CNSC staff stated that it has been determined that the defected bundles were manufactured on the same day at Zircatec Precision Industries Inc. (Zircatec), and as a result, Bruce Power is monitoring all bundles produced since November 2005.

17. CNSC staff stated that the root cause analysis is in a preliminary stage since there will no definitive conclusion on the cause of the defects until post-radiation examinations are completed. CNSC staff noted that it does not expect any results until late January or early February 2008.

18. CNSC staff stated that its special inspection of Bruce Power's fuel management program has shown no findings that require further corrective action from Bruce Power. CNSC staff further stated that the measures taken by Bruce Power were acceptable.

19. Bruce Power reported that it has approximately 15,000 fuel bundles in quarantine, 103 of which are higher risk. Bruce Power noted that a root cause analysis is being conducted at Bruce Power and Zircatec.

20. Bruce Power stated that there has been no increased risk to the public or workers from this event, and that the situation is being managed.

21. Concerned on how the defect may have occurred, the Commission asked Zircatec if oversight at its facility was adequate. Zircatec responded that the onsite quality assurance is monitored by Bruce Power contract personnel. Bruce Power responded that until it knows with certainty the cause of the defect, it cannot conclude if the quality assurance failed to identify the defect. Zircatec further noted that it has identified two possible causes: water ingress into fuel elements, and a potential mix-up of pellet type at one particular unit process. Zircatec also noted that it appears the defect occurred within a limited manufacturing period of three hours.

22. The Commission asked whether any of the bundles manufactured at Zircatec during this specific period were distributed to any other nuclear facilities. Zircatec responded that they were made specifically for Bruce Power and did not go to any other facility.

23. The Commission asked whether Bruce Power had completed any numerical models of the fuel bundles under various conditions of pressure and temperature. Bruce Power responded that it did not at this time, but it would provide the details to the Commission at a later date. **ACTION**

24. The Commission asked if this type of incident had occurred before. CNSC staff responded that weld failures have occurred over the last 10 to 15 years, but that this event of ten weld failures on one bundle is unprecedented.

25. The Commission, noting that the root cause assessments are being conducted, expects that there will be a focus on whether changes are needed in the licensees' programs and in the CNSC regulatory oversight at the Bruce Power and Zircatec facilities to prevent a reoccurrence of this event.

26. The Commission inquired as to why Zircatec was not the subject of an SDR. CNSC staff responded that it is the responsibility of the reactor operators to ensure that the fuel used in the reactor meets the quality standards. The Commission asked CNSC staff to determine whether a SDR should be made specifically concerning Zircatec's role in this matter. **ACTION**

27. The Commission will expect an update from CNSC staff at an appropriate time on both the Bruce Power and the Zircatec follow up on this event. **ACTION**

28. With reference to item 4.1.4 of CMD 07-M38 on the Pickering A – Unit 4 Reactor Trip on Heat Transport System Overpressure, CNSC staff stated that it had nothing to add to the SDR. OPG stated that it is in agreement with the SDR as prepared by CNSC staff. CNSC staff stated that it is satisfied with OPG's handling of the incident and that there was no increase in risk during that time. CNSC staff stated that it is satisfied that the proposed changes to the procedures will reduce the likelihood of similar events.

29. The Commission asked OPG why it had not addressed the known problems with the speeder gear in the turbine controls. OPG responded that it discovered the root cause of the problem in May, 2007 during a reactor shutdown, but that the problem only occurred under unique circumstances. OPG noted that it has since changed its approach, and will shut the turbine down manually, and control the heat balance with the reactor and steamer jet valves.

30. The Commission asked if any other reactors are likely to have a similar problem. CNSC staff responded that Pickering A is the only reactor with a speeder gear.

31. Commission Member A. Graham recused himself from the following meeting item.

32. With reference to item 4.1.2 of CMD 07-M38 on the Unexpected Shutdown of the Point Lepreau Generating Station, CNSC staff reported that it has received and is reviewing the Detailed Event Report from New Brunswick Power Nuclear (NB Power). CNSC staff reported that NB Power is of the view that the event does not constitute a serious process failure, although CNSC staff has not yet made a determination on this matter. CNSC staff also stated that a correction should be made to its SDR, noting that the series of three disturbances occurred after a trip, not prior to the trip, as indicated in CMD 07-M38.

33. NB Power stated that through its root cause investigation, it was determined that the shutdown system activated based on the established operating margins and that the reactor control systems remained functional. NB Power stated that having clearly understood the reason for the event and after implementing the necessary corrective actions to prevent recurrence, the NGS returned to service.

34. The Commission inquired about the age of the wiring assembly with the cracked and damaged insulation. NB Power responded that the equipment was installed in the late-1970s. The Commission asked whether this would be an issue at other nuclear facilities in Canada. NB Power noted that through the operational experience program, it shares information with the nuclear industry. CNSC staff stated that aging management programs are monitored at all facilities, and this information would be useful in that regard. CNSC staff stated that it will report to the Commission on its follow-up analysis of this incident. **ACTION**

35. With reference to item 4.1.5 of CMD 07-M38 on the Update on Contaminants Discovered under the Uranium Hexafluoride (UF_6) Plant at Cameco Corporation's Port Hope uranium conversion facility, CNSC staff reported that following the discovery of the situation, Cameco Corporation (Cameco) has done a substantial amount of investigation and has provided the information to CNSC staff. CNSC staff stated that it has reviewed the information concerning direct causes, root causes and remediation measures. CNSC staff further noted that numerous meetings and inspections have occurred.

36. CNSC staff stated that the next stages in the regulatory process include further submissions from Cameco on the following three key issues: changes to the UF_6 plant to resolve problems related to the handling of processed liquids; further action to address root causes and proposed corrective actions; and a revised remediation plan to mitigate the consequences of the event. CNSC staff stated that the submission dates for these documents range from December 7 to December 14, 2007.

ACTION

37. CNSC staff reported that the UF_6 plant remains shut down. CNSC staff further reported that work continues on delineating the contamination in the environment in order to fully characterize the impacts or potential impacts and implement appropriate remediation measures. CNSC staff stated that it will continue with its enhanced regulatory oversight of the facility to ensure the protection of the health and safety of persons and the environment.

38. Cameco stated that since its last appearance before the Commission, it has examined its plans and progress with respect to the three issues that the Commission has identified as priority concerns: governance, quality and safety culture. Cameco stated that it is making significant progress on several fronts and has identified the human behavioural aspect as an area on which to focus. Cameco elaborated on how it will apply the human behaviour factor to each of the three priority areas, providing examples of its efforts.

39. Cameco noted that it has retained Golder Associates to assist with the investigation, has installed 77 monitoring wells to delineate the plume, and drilled three test wells to develop pumping performance data.

40. Cameco stated that the profiles of the uranium plume have been more complex than initially expected, due to what appears to be more than one contamination source and a more porous channel towards the south of the site. Cameco noted that more wells are needed to fully understand the extent of the contamination.

41. Cameco stated that interim corrective actions have been taken to intercept groundwater flow with test wells that provide data for the design of the long-term collection system and the prevention of further contamination flow away from the facility. Cameco noted that it provides daily updates to CNSC staff, as well as regular updates to Cameco employees and the community.

42. Cameco stated the root cause investigation shows the event was caused by corrosive chemicals and other liquids contacting floor structures that were not designed for holding liquids over extended periods. Cameco noted that it is changing its practices to ensure that greater attention is paid to the proper use and maintenance of in-ground structures. Cameco also stated that it is developing a plan to implement the correcting action recommendations resulting from the root cause analysis. Cameco proceeded to explain some of its corrective measures.

43. Cameco stated that its risk assessment has indicated that the event poses no unreasonable risk to the public or the environment, and the risk to workers directly involved in responding to the event can be managed with appropriate measures and protective equipment.

44. In discussing its plans going forward, Cameco stated that it has submitted an initial environmental management plan to CNSC staff. Cameco proposes to rehabilitate the UF_6 plant to prevent processed liquids from entering the sub-surface, follow a risk-based approach to possible removal of soil and source materials, implement a system to prevent contaminated groundwater from moving at the perimeter of the UF_6 plant, and implement additional groundwater control and remediation measures to address the plume. Cameco also proposes to intercept and remove the contaminated groundwater and, before the plant can start up, remove the contaminated materials, including the soil.

45. Cameco stated that, to date, it has removed approximately 4,500 cubic feet of soil and 5,500 cubic feet of concrete to prepare for corrective reconstruction. Cameco stated that it is working to ensure that it has examined all options to address the groundwater and soil contamination. Cameco noted that it is following the principles of keeping exposure to radiation As Low as Reasonably Achievable (ALARA), as well as making risk considerations in developing the comprehensive plan.

ACTION

46. The Commission asked how Cameco is involving the community in its plans. Cameco stated that it provided the community with an update on the event as part of its public information program, and it has appeared before the town council. Cameco stated that it has answered specific questions from individuals and placed those answers on its Web site. Cameco noted that it has found the community generally supportive of Cameco, and would continue to communicate with the community to maintain this support.

47. CNSC staff noted that it has met with the Mayor and senior officials of the Municipality of Port Hope to keep them informed on the issue from a regulatory perspective. CNSC staff stated that it has also responded to individuals who have requested information or have had questions.

48. The Commission sought further information concerning the impact of the event on the community from the Mayor of the Municipality of Port Hope (Mayor). The Mayor stated that both Cameco and CNSC staff have provided the Municipality of Port Hope with detailed information, which has been made available to the public, on a regular basis. The Mayor stated that the community wants the remediation process to move forward.

49. The Commission sought further information from Cameco concerning the quality assurance and quality control responsibility. Cameco responded that it has restructured its organizational structure and now has a vice-president responsible for Safety, Health, Environment and Quality. CNSC staff stated that it will be doing a formal review of Cameco's new structure for quality assurance oversight.

50. Based on the information currently available, the Commission asked Cameco to estimate the rate of migration of the southbound plume. Cameco responded that based on the current information, the migration velocity to the south is approximately 10 meters per year, and is approximately one to two metres per year to the east and west. Cameco added that the plume had reached approximately 100 meters.

51. The Commission, considering that the sourcing contamination has been in progress for at least 10 years, asked CNSC staff why the potential for this problem had not been recognized earlier.

52. CNSC staff responded that chronic issues may not be detected through regular compliance inspections. CNSC staff stated that it will be launching a 'lessons learned' on this event. CNSC staff noted several areas where it would apply the lessons learned, including checking the plant operation against the safety analysis report.

53. The Commission inquired about the depth of the plume. Cameco replied that the depth ranges from four metres below the floor through to the surface of the underlying bedrock at a depth of six to eight metres. Cameco noted that, to date, it has no evidence of any material impact in the groundwater in the bedrock. CNSC staff noted that further information may be required to characterize the site, both in the overburden and the bedrock.

54. The Commission asked whether the issue of aging management is pertinent for this event. Cameco responded that it is aware of the issue of aging management from both a physical plant and operational points of view. CNSC staff stated that aging management is a factor in the assessment of the root cause analysis.

55. The Commission asked Cameco to explain the three areas of higher concentration in Cameco's diagram of uranium in the groundwater. Cameco responded that there are multiple point sources related to the trenches in the Building 50 operational area. Cameco noted that some may also be historical sources. CNSC staff stated that it is waiting to receive the information concerning the site characterization as part of a holistic approach.

56. The Commission asked if Cameco is planning on having a three-dimensional numerical simulation of the groundwater flow. Cameco responded that it intends to have a working model available to CNSC staff by December 14, 2007.

57. The Commission, noting a specific comment by CNSC staff in a letter concerning housekeeping issues, asked CNSC staff to explain the safety ratings for the licensing of the Cameco site. CNSC staff responded that housekeeping is part of the overall assessment on which the rating is based. CNSC staff noted that housekeeping was determined to be a contributing factor to the cause of the event.

58. The Commission asked if any other buildings onsite may be contributing to the contamination. Cameco responded that it has not yet done analysis concerning other buildings as it has been focusing its resources on the corrective actions for the UF_6 plant. In that regard, the Commission asked if Cameco should address any potential contamination from the other buildings. CNSC staff responded that it needs to be addressed on a priority basis, although CNSC staff recognizes that Cameco has to stage the use of its resources at this time. CNSC staff stated that it expects Cameco to address this issue for other buildings, and CNSC staff will follow-up.

59. The Commission asked what the timeframe would be for the completion of this work. Cameco, acknowledging that it is an urgent matter, stated that it cannot provide a timeframe at this time.

60. The Commission expects updates from CNSC staff on this matter at an appropriate future date. **ACTION**

61. With reference to item 4.1.7 of CMD 07-M38.B on the Level 3 Emergency Event (Eagle Point Mine Water Handling) at Cameco Corporation's Rabbit Lake Operation, CNSC staff stated that it had nothing to add to the SDR.

62. Cameco stated that site crews at the Rabbit Lake mine site noticed water entering a mine area on November 26, 2007. Cameco stated that it tested the water quality and found it to be close to the Saskatchewan surface water quality objective. Cameco further stated that the inflow was collecting in one of the contingency storage areas. Cameco noted that it upgraded its water handling system and has been able to remove and treat the water. Cameco further noted that it has installed bulkheads to seal off the area with increased water flow. Cameco stated that it expects to seal off the area in the first quarter of 2008. Furthermore, Cameco noted that it is following its contingency plans and has adequate space in the designated underground water storage areas.

63. In response to the Commission's enquiry on the capacity of the water treatment plant, Cameco responded that the capacity is 720 cubic metres per hour (m^3/h), and that it is currently pumping an average of 307 m^3/h into the water treatment plant.

64. The Commission, noting that Cameco indicated that additional action would be taken in the event that the concentration of radon gas exceeds 15,000 Becquerels per cubic metre (Bq/m^3), asked what was the current level of radon gas in the mine and what additional action would be taken in this event.

65. Cameco responded that it the level of radon has ranged from 4,000 Bq/m^3 to 13,000 Bq/m^3. In the event that it would exceed 15,000 Bq/m^3, Cameco's ventilation engineers would alter the ventilation system to better remove any radon gas from the working area to the exhaust area of the mine. Cameco noted that the work could be done within a 12-hour work shift at the site.

66. The Commission asked whether the flow rate of the water into the mine has stabilized. Cameco responded that the flow rate is consistently 110 to 120 m^3/h.

67. The Commission inquired about the timeframe for correcting the event. Cameco responded that through the construction of the bulkheads, it expects that the water inflow should stop by the end of January 2008.

68. The Commission asked Cameco to explain its water storage system. Cameco described the storage workings, noting that it has a total storage volume of 150,000 m^3. Cameco stated that it is currently storing 6,000 m^3.

69. The Commission inquired about the long-term plan for the Eagle Point Mine. Cameco responded that the mine life continues to be extended, and Cameco is currently developing mine plans around new zones.

70. The Commission sought confirmation from CNSC staff that the fast-tracked mine to mill extension did not introduce any new risk. CNSC staff described the plan for upgrading the mine water handling circuit and stated that it was completed satisfactorily and without incident.

71. With reference to item 4.1.6 of CMD 07-M38.A on the National Research Universal (NRU) Reactor in an Extended Shutdown Due to the Facility Status Not Matching the Safety Analysis Report, CNSC staff reported that Atomic Energy of Canada Limited (AECL) has provided CNSC staff with its preliminary plan on the work to be done to connect the Emergency Power Supply (EPS) to the two Main Heavy Water Pumps (MHWPs). CNSC staff stated that it is currently planning to conduct verification to ensure that the work is done correctly and safely so that when the reactor returns to service, it will operate at the expected level of safety. CNSC staff noted that it has assigned a high priority to this work. CNSC staff further noted that AECL has stated that the root cause analysis report will be available at the end of December on this matter. CNSC staff stated that the measures that AECL is currently taking to assure nuclear safety are appropriate, as AECL has extended its shutdown and the reactor is not in operation.

72. AECL stated that it decided to extend the current planned outage to perform what were, in its view, the safety-related modifications that would ensure the safe and long-term operation of the NRU reactor. AECL stated that it is currently in the process of conducting two important initiatives: connecting the EPS to the two MHWPs as quickly and safely as possible, and performing the root cause analysis of the situation. AECL stated that with both EPS connections in place, it would then be in full compliance with its licensing basis.

73. AECL committed to update CNSC staff on its progress.

74. AECL further stated that, during the scheduled maintenance shutdown of the week starting November 19, 2007, a disconnect between the physical plant status and the design basis and licensing basis for the facility was confirmed. AECL stated that when it realized that there was a conflict between the physical plant and the licensing basis, immediate action was taken to align the reactor with the licensing basis and the design basis. AECL stated however that it was of the view that the connection between the EPS and the MHWPs was a safety-related enhancement to the reactor that was not part of the original scope of the safety upgrades that constituted part of the safety case in the licensing basis submitted with the licence renewal application. That stated, AECL decided to keep the reactor in a safe shutdown state to install the EPS connections to the two pumps.

75. The Commission asked CNSC staff to describe the circumstances surrounding the discovery of the significant event. CNSC staff stated that during routine inspections, documentation was reviewed that raised the question that the connection had not been made. CNSC staff stated that it raised the issue with AECL, who then decided to shut down the reactor until it completed the connection.

76. The Commission sought more information on the time it took to report the incident once it was discovered on November 8, 2007. AECL responded that following the discovery of the event, it held ongoing discussion with CNSC staff in order to understand the nature of the event and prepare a formal report. CNSC staff confirmed that during that seven-day period, there were extensive discussions between CNSC staff and AECL.

77. The Commission asked AECL if it was of the view that the NRU was operated without the necessity for the EPS. AECL responded that while it considered the reactor to have been operated safely, it believes that, because the physical plant is not in full alignment with the safety case nor with the licensing basis, it would be safe and prudent to keep the reactor shut down in order to complete the upgrades.

78. AECL stated that while it may be possible to make a safety case on operating the reactor with only one of the MHWPs upgraded, it has explored that possibility and believes that the most expeditious and prudent route, from a safety perspective, is to perform the upgrades to both MHWPs.

79. The Commission noted that the NRU is 50 years old and, as an aging reactor, required significant upgrades to meet modern standards. The Commission asked CNSC staff to explain the reason for the lack of communication with AECL that led to the significant event. CNSC staff explained that facilities need to improve on a continuous basis, which means that the level of safety has to meet modern expectations. CNSC staff stated that AECL committed in its work to upgrade the NRU reactor and in subsequent licence renewal to upgrade the reactor, and that these upgrades were needed to determine that the upgraded reactor would not pose an unreasonable risk to people and the environment, for its continued operation.

80. In response to the Commission's query, CNSC staff stated that it could not provide further information concerning AECL's failure to complete the upgrade. CNSC staff noted that it considered the connection of the EPS to the MHWPs to be a necessary part of the upgrades package, not an enhancement. CNSC staff further noted that the AECL root cause analysis report would likely explain the processes that AECL followed.

81. The Commission sought confirmation that it was clear in CNSC staff's written documentation that the upgrade was necessary. CNSC staff responded that it was clear and the documentation was recorded on files of the CNSC.

82. The Commission stated that its decision to renew the operating licence for the facility in 2006 was based on the fact that the necessary upgrades to the aging facility were, or would be, completed. The Commission further stated that the connection of the EPS to the MHWPs was a necessary condition of the licence, and, in light of AECL's failure to complete the connection, AECL is in violation of the requirements of its licence in order to operate the reactor.

83. In this regard, the Commission sought clarification from CNSC staff and AECL on what were their understandings of the timing to complete the upgrades. CNSC staff responded that the upgrades were expected be done very close to the time of the licence renewal.

84. AECL responded that it had planned to complete the upgrades over a series of outages and that the timeline to complete the connection between the EPS and the MHWPS was in the 12 to 14-month range. AECL also stated that it believed it was operating within the safety case and the licensing basis without the upgrades.

85. The Commission asked whether AECL had the necessary equipment now to complete the work. AECL responded that it is currently expediting the acquisition of parts from around the world to complete the upgrades on the second MHWP so that both pumps will be connected before the reactor returns to service. AECL reconfirmed its intention to have both pumps connected before the return to service.

86. The Commission continued its line of questioning concerning AECL's plans going forward to complete the upgrade. AECL responded that it is currently preparing for the final commissioning activities on one of the MHWPs. In addition, AECL stated that there is a 75% probability that the reactor will be in service by the end of December, and a 95% probability that it will be in service by the end of the first week of January, 2008 as it will have completed the upgrades and its safety assessments.

87. AECL stated that it is aware of the impact that the NRU reactor shutdown is having on the isotope supply stream, and it is putting its efforts into expediting work schedules.

88. The Commission asked AECL when it expects isotopes to be available. AECL responded that it would take several weeks following the start-up of the reactor, which would be late January or early February.

89. The Commission asked CNSC staff whether AECL's expectations of the schedule are realistic, or if there may be any other issues that need to be addressed. CNSC staff responded that it believes that the schedule is realistic. CNSC staff noted that its focus will be on the results of the process rather than the timing of the work, in order to ensure that the work is done correctly. CNSC staff stated that its site staff at Chalk River will be supported by other CNSC project officers and technical specialists to expedite reviews.

90. The Commission asked if AECL has a work plan in place for completing the upgrade. AECL responded that it had a work plan in place that was based on the assumption that the work would be completed over a series of outages. AECL further stated that the work it is currently performing is based on that work plan.

91. In response to the Commission' enquiry, CNSC staff stated that it had reviewed the work plan as submitted in 2005. As for the revised work plan, CNSC staff noted that it had received a high-level, preliminary plan on December 5, 2007.

92. In this regard, the Commission asked AECL when it plans to provide CNSC staff with the detailed plans. AECL responded that it would make them available to CNSC staff immediately. Although it had not yet provided the revised detailed plan, AECL noted that it had been in regular communication with CNSC staff and as such, it had been providing CNSC staff with its schedule on a transactional level.

93. The Commission inquired as to whether any further upgrades would be required over the licence period. AECL responded that, based on its preliminary assessment, there were no further upgrades that would be considered critical. AECL noted its plan to do a more thorough assessment of the licensing requirements as part of its pre-start up activities. CNSC staff added that it is not aware of any other upgrades but would be performing an audit in January 2008.

94. The Commission sought confirmation that CNSC staff would be available to assess the completed upgrade and review, on a 24/7 basis as to whether the physical plant status meets the licensing basis and expedite regulatory approvals for the return to service. CNSC staff responded that it was available.

95. The Commission sought further confirmation that, if it was demonstrated that the reactor was brought into compliance with the licensing basis, CNSC staff could authorize the restart of the reactor rather than require a Commission hearing. CNSC staff confirmed this statement.

96. The Commission expects to have a follow-up on the matter at the next scheduled Commission meeting and is prepared to hold a special meeting to receive timely updates or make any decisions if required. **ACTION**

Information Items

97. Commission Member A. Graham recused himself from the following two meeting items.

98. With reference to CMD 07-M42.1 and CMD 07-M42.1A on the New Brunswick Power Nuclear 2008 Refurbishment Outage Update, NB Power presented information concerning the status of the work related to the 2008 refurbishment outage for the Point Lepreau NGS. NB Power stated that the refurbishment outage is planned to start in April 2008.

99. NB Power described the work involved in the refurbishment. NB Power stated that the principal activity during the outage will be the replacement of all 380 fuel channels, calandria tubes and feeders. NB Power noted that the refurbishment activities are listed in Appendix J of the operating licence for the Point Lepreau NGS. NB Power stated that it has developed a plan for future safety improvements and is incorporating them into the long term planning process.

100. NB Power noted that it had completed two significant objectives to date: the construction of the new site office building and the new structures in the waste management area.

101. NB Power stated that the scope of the outage covers the following three categories of work: the retubing of the reactor, work to support the retubing and refurbishment activities, and regular maintenance and capital work. NB Power presented a high-level update on the status of key work.

102. NB Power stated that throughout the project, it has maintained active communications plans with the objective to inform and receive feedback from the general public, stakeholders and representatives from Aboriginal peoples. NB Power stated that it plans to continue to keep both CNSC staff and the Commission fully informed of the progress on the project, including a proposed series of periodic updates to the Commission, in June and October 2008, which will provide current information regarding progress. **ACTION**

103. NB Power noted that, at the appropriate time, it intends to submit a request to load fuel in the reactor. NB Power stated that it expects to be ready to seek Commission approval in this regard at a hearing on this matter in January 2009. Pending approval from the Commission, this would allow for a return to service by March or April 2009.

104. With reference to CMD 07-M43 on the Radiation Practices Implemented at the Point Lepreau Generating Station During the Refurbishment Activities, CNSC staff stated that it had nothing further to add to its submission.

105. The Commission asked whether there were any elements of the refurbishment that would be dependent on the inspections to be held during the outage. NB Power responded that it conducted a condition assessment and is confident that it has identified and planned for the critical elements. NB Power noted several types of inspections that it would be conducting.

106. The Commission inquired about the age of the monitoring equipment. NB Power stated that some of the equipment would be replaced during the outage, and its planned aging management process will ensure that equipment is replaced at the appropriate time.

107. The Commission inquired about the expected level of experience of the workforce to be employed at the Point Lepreau NGS at the time the NGS is planned to be operational, in September 2009. NB Power responded that it has conducted succession planning for the post-refurbishment timeframe. NB Power stated that it will have the proper resources in place to resume the operation of the NGS for a long-term period.

108. The Commission sought information on how NB Power will manage the contractor, AECL, through the refurbishment period. NB Power described the management and quality assurance structure for the project. The Commission asked whether there is a specific person in charge of managing quality assurance and quality control. NB Power responded that there is one person in charge from AECL and one person in charge from NB Power.

109. The Commission sought further information concerning the makeup of the high-level oversight committee. NB Power responded that the committee is comprised of members of NB Power who liaise with AECL's implementation staff, implementation director and safety managers, and is co-chaired by a member of AECL and a member of NB Power. The Commission asked about the rationale of having a contractor as a co-chair of the oversight committee. NB Power responded that the two organizations share a common goal in ensuring that the protection of the health and safety of person and the environment meet the highest standard, and, in that context, the co-chairing of the committee is a way to manage the issues and ensure that the proper results are achieved.

110. The Commission asked CNSC staff whether it envisions any particular challenges in managing the project. CNSC staff, noting that the refurbishment is being done under an operating licence, stated that the focus of CNSC staff will continue to be on the operating reactor up until the refurbishment program is underway. CNSC staff stated that it has examined NB Power's quality management, internal audit groups and procurement processes and is satisfied that these are robust and should enable NB Power to adequately perform the activities during the refurbishment while maintaining the safety of the workers and the protection of the environment.

111. The Commission asked CNSC staff how it will be involved in the project once the new fuel is loaded. CNSC staff stated that it would provide oversight and ensure that NB Power meets its commitments.

112. The Commission sought further information concerning the transport of active tooling to the AECL warehouses in Saint John, New Brunswick. NB Power responded that the management of radioactive waste, as for all activity at the site, is conducted in accordance with the station's nuclear management manual. AECL also stated that it has a process in place for transportation. CNSC staff noted that all work must be completed in accordance with the requirement of the *Nuclear Safety and Control Act* (NSCA) and that the transport of radioactive materials is also subject to the requirements of the *Transportation of Dangerous Goods Act*.

113. The Commission noted that the Regulatory Document G-360, "Life Extension of Nuclear Power Plants" (May 2006) and the ALARA principle were taken into consideration by NB Power.

114. The Commission asked if there are any issues concerning security or safeguards. NB Power responded that it will be working to ensure that safeguards are in place and will also re-established prior to the reloading of the fuel. NB Power also stated that it has been involved in security planning for the refurbishment and is comfortable with the level of security. CNSC staff stated that regular oversight will continue for safeguards and security.

115. The Commission sought further information concerning the involvement of the community. NB Power stated that it has an open relationship with the community and has been providing updates to key stakeholders. NB Power stated that it invites the community to raise any concerns. NB Power noted that one particular concern regarding traffic was addressed during the public consultation on the environmental assessment for the project. CNSC staff stated that it keeps contact with the community through its community outreach program.

116. The Commission sought confirmation from NB Power that its priorities were on the refurbishment project as opposed to the potential construction of a new reactor (new build). NB Power stated that it is the focus of NB Power to refurbish Point Lepreau safely and successfully. NB Power noted that the consideration of a second reactor in New Brunswick is conditional on the successful completion of the refurbishment.

117. The Commission stated that if found the update very useful in monitoring the progress of this major project.

Status Report on Power Reactors

118. With reference to CMD 07-M39 on the Status Report on Power Reactors, CNSC staff provided a status update on the Bruce B and the Point Lepreau facilities.

119. The Commission asked whether there was an update with respect to the unplanned outage for Gentilly-2, operated by Hydro-Québec. Hydro-Québec responded that during its outage, it found several issues that it is currently addressing.

120. The Commission asked when Hydro-Québec expects to resume operation. Hydro-Québec responded that it expects to be operating by the end of December 2007.

121. The Commission asked if Hydro-Québec had experienced these problems previously. Hydro-Québec noted that it did not find any problems with the other heat exchanger that was inspected in 2003, and so this was the first time it experienced such an event. Hydro-Québec added that it could provide further information once it has completed its investigation.

DECISION ITEMS

Request for an Extension of the Temporary Exemption from Licensing for the Possession, Management and Storage of Nuclear Substances Located at the Deloro Mine Site

122. With reference to CMD 07-M44 on the Request for an Extension of the Temporary Exemption from Licensing for the Possession, Management and Storage of Nuclear Substances Located at the Deloro Mine Site, CNSC staff made an oral presentation to the Commission and recommended that the Commission grant an extension to the temporary exemption for a licence to possess, manage and store nuclear substances at the Deloro mine site.

123. The Ontario Ministry of the Environment (MOE), the operator of the site, described the progress that it has made concerning the environmental assessment required before the Commission could consider issuing a licence for the site. The MOE stated that it is expecting that the environmental assessment would be ready for a hearing of the Commission in January or February 2009.

124. The Commission inquired as to why the environmental assessment has taken so long. The MOE responded that the project is complex in nature and requires approvals to satisfy federal, provincial and agency requirements.

125. The Commission asked what the timeframe was for the project when the MOE applied for its licence in 2001. The MOE responded that it had planned on being in the construction phase in 2007.

126. The Commission expressed concern that without a detailed plan, the project would not be completed by the end of the proposed extension timeframe, December 31, 2010.

127. The Commission expressed concern that the Environmental Assessment Study Report (EASR) may not be completed according to schedule. CNSC staff acknowledged that the completion of the EASR is dependent on meeting the CNSC's its satisfaction prior to the project moving forward, and noted that it attempted to provide a reasonable timetable.

128. The Commission asked CNSC staff to comment on the idea of providing the Commission with an annual status report in order to update the Commission on the progress of the environmental assessment. CNSC staff stated that it could provide the Commission with an annual update on the progress of the EASR.

129. The Commission expressed further concern that the project is taking a long time to be completed. CNSC staff concurred with the Commission and stated that it is prepared to meet with the MOE in order to resolve any issues. The Commission stated its willingness to provide information to the MOE executives if that would clarify expectations and expedite the process.

130. In considering the information provided by CNSC staff, the Commission concludes that, pursuant to the *Canadian Environmental Assessment Act*, an environmental assessment is not required before the Commission may consider an extension to the temporary licence exemption.

131. The Commission concludes that, pursuant to section 11 of the *General Nuclear Safety and Control Regulations*, the proposed exemption would not pose an unreasonable risk to the environment or the health and safety of persons; would not pose an unreasonable risk to national security; and would not result in a failure to achieve conformity with measures of control and international obligations to which Canada has agreed.

132. The Commission, pursuant to section 7 of the *Nuclear Safety and Control Act*, exempts the Deloro Mine Site from CNSC licensing to possess, manage and store nuclear substances until December 31, 2009. **DECISION**

133. With this decision, the Commission requests that the MOE submit a detailed status report to the Commission at a public proceeding in or around November 2008. The report shall provide a status update on the environmental assessment and a detailed project management plan that will include timelines and information on the relevant regulatory authorities involved in the approval process for the proposed activities. **ACTION**

Proposed Improvements to the CNSC Staff Annual Report on the Safety Performance of the Canadian Nuclear Power Industry

134. Commission Members A. Graham and A. Harvey were not present for the following meeting item.

135. With reference to CMD 07-M40 on the Proposed Improvements to the CNSC Staff Annual Report on the Safety Performance of the Canadian Nuclear Power Industry (Annual Report), CNSC staff presented proposed improvements for the upcoming 2007 Annual Report, based on comments received from the Commission Members, licensees, the public and other stakeholders.

136. The Commission sought clarification concerning the proposed change to use a single safety rating for the safety performance in the nine safety areas, as opposed to the two used the previous year - a rating for the safety program and a rating for the implementation of that program. CNSC staff expressed the opinion that this single rating would be less redundant and clearer. The Commission requests that CNSC staff provide a more detailed explanation on the possible implications of a single safety rating, including for all applicable licensees. **ACTION**

137. The Commission commented that the Annual Report should not be referred to as simply the "industry report" by CNSC staff, as it only pertains to the nuclear power industry and the CNSC regulates many other industries, including the uranium industry.

138. The Commission expressed concern that the information contained in the Annual Report was not reaching a large portion of the general public.

139. The Commission further noted the importance of providing performance trends over several years within the Report.

140. The Commission suggested that CNSC staff work with the Secretariat to ensure that the Report is published early enough for the public to have an opportunity to review it before attending the information sessions held in their communities. **ACTION**

141. The Commission also suggested that CNSC staff work with Regulatory Advisory Committees (RACs) in order to provide a broader perspective within the report.

142. The Commission expressed the view that a broader proposal for the document be considered, including the objective, policies and results in order to determine how the Annual Report can be more meaningful to the stakeholders, including the public.

143. The Commission asked that this issue be brought back to the Commission at a later date, once CNSC staff has had a chance to consider the information discussed at this meeting. **ACTION**

Closure of the Public Meeting

144. The public meeting closed at 4:28 p.m. on December 6, 2007.

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Chair Recording Secretary

_____

Secretary

APPENDIX A

CMD	DATE	File No

07-M35 2007-11-06 (6.02.01)
Notice of meeting of December 5 and 6, 2007

07-M36 2007-11-21 (6.02.02)
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 and Thursday, December 5 and 6, 2007

07-M36.A 2007-11-28 (6.02.02)
Updated 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 and Thursday, December 5 and 6, 2007

07-M36.B 2007-12-04 (6.02.02)
Updated 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 and Thursday, December 5 and 6, 2007

07-M37 2007-11-28 (6.02.03)
Approval of minutes of Commission meeting held September 13, 2007

07-M38 2007-11-20 (6.02.04)
Significant Development Report no. 2007-5 for the period of September 11 to November 20, 2007

07-M38.A 2007-11-28 (6.02.04)
Significant Development Report no. 2007-5 for the period of September 11 to November 28, 2007 – Supplementary Information

07-M38.B 2007-12-04 (6.02.04)
Significant Development Report no. 2007-5 for the period of November 29 to December 3, 2007 – Supplementary Information

07-M39 2007-11-22 (6.02.04)
Status Report on Power Reactors units for the period of August 28 to November 19, 2007

07-M40 2007-08-23 (2.01)
Proposed Improvements to the CNSC Staff Annual Report on the Safety Performance of the Canadian Nuclear Power Industry

07-M42.1 2007-11-15 (6.02.04)
NB Power Nuclear - 2008 Refurbishment Outage Update

07-M42.1A 2007-11-28 (6.02.04)
NB Power Nuclear – 2008 Refurbishment Outage Update – Supplementary Information

07-M43 2007-11-15 (4.01.01)
Radiation protection practices implemented at the Point Lepreau Generating Station during the Refurbishment Activities

07-M44 2007-11-23 (2.05)
Request for an extension to the temporary exemption from licensing for the possession, management and storage of nuclear substances located at the Deloro Mine Site