

May 21 and 22, 2003

Minutes of the Canadian Nuclear Safety Commission (CNSC) Meeting held from 8:30 a.m. to 12:15 on Wednesday May 21 and from 4:25 p.m. to 6:02 p.m. on Thursday May 22, 2003 in the Public Hearing Room, CNSC Offices, 280 Slater Street, Ottawa, Ontario.

Present:

L.J. Keen, Chair

C.R. Barnes

J.A. Dosman

Y.M. Giroux

A. Graham

L. MacLachlan

M.J. McDill

M.A. Leblanc, Secretary

I. V. Gendron, Senior Counsel

C.N. Taylor, Recording Secretary

CNSC staff advisers were A. Alwani, F. Ashley, R. Aubrey, B. Beaudin, J. Blyth, P. Dubé, P. Fundarek, I. Grant, B. Howden, K. Lafrenière, R. McCabe, M. McKee, P. Thompson and A. Vachon.

Other contributors were:

- Atomic Energy of Canada Limited: J.-P. Labrie
- Bruce Power Inc.: D. Hawthorne
- Cameco Corporation: J. Jarrell, M. Quick
- Emergency Management Ontario: N. McKerrell
- Health Canada: H. Griffiths
- Hydro-Québec: M. Désilets, M. Beaudet
- McMaster University: C. Heysel, L. Schime
- Ministère de la Sécurité publique : B. Dubois
- New Brunswick Emergency Measures Organization: A. Skaling
- New Brunswick Power: J. Connell, B. Shank
- Ontario Power Generation Inc.: G. Smith, G. Brown, B. Robinson
- Saskatchewan Labour: E. Becker
- TRIUMF : Dr. A. Shotter, L. Moritz

Adoption of the Agenda

1. The agenda, CMD 03-M26.A, was adopted as presented.

DECISION

Chair and Secretary

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

Constitution

3. With the notice of meeting having been properly given and a quorum of Members being present, the meeting was declared to be properly constituted.
4. Since the meeting of the CNSC held April 10, 2003, Commission Member Documents CMD 03-M25 to CMD 03-M37 had been distributed to Members. These documents are further detailed in Annex A of these minutes.

Minutes of the CNSC Meeting Held April 10, 2003

5. The Members approved the minutes of the April 10, 2003 Commission meeting (reference CMD 03-M27) without change.

DECISION

With reference to paragraph 52 of the minutes, the Members questioned whether staff had any further information on the type of disciplinary action taken by New Brunswick Power (NB Power) towards one of its operators at the Point Lepreau NGS for repeatedly not following procedures. Staff replied that, following formal and informal disciplinary proceedings and discussions with the unions, NB Power decided to reassign the individual to a position where he would be more closely supervised and would not be as intimate with the reactor operation. Staff indicated that it is satisfied with how NB Power dealt with the situation.

Significant Development Report

6. Significant Development Report (SDR) no. 2003-4 (CMD 03-M28 and CMD 03-M28.A) was submitted by staff. Staff reported on the following with reference to the SDR.

Overexposure of a Radiographer – Syncrude Canada

7. With reference to CMD 03-M28, staff described a radiation overexposure incident that was reported to the CNSC on April 16, 2003. The incident involved two radiographers employed by Canspec Group who were working at Syncrude Canada's operation at Fort McMurray, Alberta, one of whom received a high acute

exposure to his fingers while attempting to retrieve a source capsule that had become detached from the exposure device. Staff reported that the radiographers initially failed to assemble the equipment properly, did not perform the required safety checks, and did not follow procedures in responding to the event.

8. Staff reported that the licensee (Canspec Group) has taken corrective action, including a 1-week suspension of the radiographers from active duty, and the retraining of these and other radiographers who use this type of device. In addition, the supplier of the device has been contacted to evaluate its design and assembly in an effort to prevent future accidents.
9. Staff further reported that, to date, there are no physical manifestations of the overexposure on the hands of the affected radiographer. Staff indicated that this suggests that the initial dose estimate may have been conservatively high. Staff has requested a copy of the medical report. A further medical examination by a dermatologist is scheduled in mid-June.
10. The Members questioned staff on whether they believed the behavior of these experienced radiographers was motivated by a fear of disciplinary action by the employer. In response, staff stated that it is looking into the human factors of the incident, including the time pressures under which the work was being performed. Staff is also examining whether the response of the employer to suspend the workers could reflect or foster a negative safety culture. The Members stressed the importance of a positive safety culture that encourages the reporting of errors and adherence to proper procedures.

Cameco McArthur River Mine – Water Inflow

11. With reference to CMD 03-M28.A, staff provided the Members with an update of a significant development at the McArthur River Mine in Saskatchewan that was initially reported to the Commission at its meeting of April 10, 2003. Staff reported that water continues to enter the mine at a relatively constant rate, and that Cameco has managed to increase its mine water pumping, retention and treatment capacity to deal with the additional ingress of water.
12. In response to a question from the Members on the reported spill of 500 litres of untreated mine water to the environment on May 7, 2003, staff explained that the spill was caused by loose bolts on a pipe connection. Staff concluded that the spill had no significant

environmental consequence and that Cameco responded appropriately.

13. In response to a question from the Members on the adequacy of the materials used to construct the new water retention dam on the surface, staff noted that the materials selection, sorting and compaction, including the management of frozen soil, was carefully supervised by contract engineers. CNSC staff also carried out 2 inspections during the construction period. Staff expressed its satisfaction that the dam has been properly constructed.
14. In response to further questions from the Members on the capacity of the surface water retention and treatment facilities, Cameco described how it has effectively doubled its treatment capacity by converting the system from a batch-release process to a continuous flow-through water treatment system. Cameco added that the effluent water quality from the modified system remains at a very high quality and below regulatory limits.
15. With respect to the Members' questions on the need for any enhancements of downstream monitoring, staff reported that it, in consultation with Environment Canada, has required that Cameco increase the frequency of its environmental monitoring and conduct additional effluent toxicity testing. Further monitoring of the effects in the bog area that is currently being used for surplus mine water retention is being planned for after the event has passed.
16. Staff and Cameco also reported that additional radiation protection measures have been implemented and that they have been effective. In response to a follow-up question from the Members on radiation protection, Cameco added that, while it expects that a number of individuals will receive exposures greater than 5 mSv during the event, it does not anticipate any exposure will approach the regulatory limits.
17. Staff expressed its view that Cameco's response to the event is being carried out in a manner that provides for the protection of health and safety of persons, and the environment. Staff noted that it is working closely with Saskatchewan Environment and Saskatchewan Labour, and that these provincial departments have also expressed satisfaction with the adequacy of Cameco's activities to date.
18. With respect to the above-noted process of government consultation, the Members sought staff's view on how the recently

signed agreement between the CNSC and the Government of Saskatchewan has affected the regulatory response to this incident. Staff expressed the view that the agreement has facilitated the coordination of regulatory activities and has assisted with the efficient use of the technical expertise within the respective departments. Staff added that the regulatory response to the incident has been done using a team approach involving all of the responsible federal and provincial departments. A representative from Saskatchewan Labour also noted that the government coordination has been good and that this is expected to continue.

Darlington NGS – Update on Steam Door Modification

19. With reference to CMD 03-M28, staff reported on progress being made by Ontario Power Generation (OPG) to correct an unacceptable design modification that was previously made to a number of steam doors at Darlington NGS. Hatches had been cut in the doors to allow the periodic passage of cables into the steam protected rooms. Staff reported that it has approved OPG's proposal to remove the hatches and install CamLock power connectors where needed. The modifications are planned for June 2003.
20. In response to a follow-up question from the Members on this incident, OPG acknowledged its misinterpretation of the CNSC's requirements when the hatches were first installed, and that OPG now has a clear understanding of the CNSC staff position.

Darlington NGS – Station Condition Record: D-2003-03914 – Maintenance in Wrong Unit

21. With reference to CMD 03-M28, staff described an incident that occurred at Darlington NGS on April 16, 2003. The incident involved maintenance personnel initiating work on Unit 3 rather than on the outage Unit 4. CNSC staff noted that there were neither personal injuries nor impact on the plant operations as a result of the error.
22. Staff outlined the actions OPG has taken to prevent this type of error recurring in the future, including improved communications, signage, training, briefings, barriers and procedures.
23. Staff indicated that it is continuing to examine the root causes and possible implications for other stations.

24. The Commission expressed its concern about what appears to be gross carelessness on the part of the individuals involved in this incident and sought further information from OPG on what it is doing to correct this behaviour. OPG stated that it is looking closely at the human factors and human performance issues involved in the incident. OPG noted that disciplinary action has been proposed for the specific individuals and that negotiations with the union are proceeding in this regard. The Members noted that disciplinary action in such circumstances must be applied carefully so to not have unintended negative impacts on a safety culture that encourages open reporting of errors.
25. In response to a follow-up question from the Members, OPG emphasized that it is taking this event very seriously and that the highest levels of management, including the Board of Directors, accepts overall responsibility for performance. OPG also pointed out that its human performance program has resulted in a significant drop in this type of error since 2001.
26. Staff added its view that, with the many thousands of tasks and people involved in maintaining and operating these facilities, human performance is, and will continue to be, a challenge in the nuclear industry. Staff expressed the view that, while it is important to continuously improve human performance, the generating stations are designed to accommodate such errors without high-consequence accidents resulting.

The *Electricity Act* - New Brunswick

27. With reference to CMD 03-M28, staff reported that the *Electricity Act* in New Brunswick has received Royal Assent, but that it is awaiting proclamation.

Pickering 'B' – Reactor Trip

28. With reference to CMD 03-M28, staff reported that Unit 5 at Pickering NGS 'B' was safely shutdown on May 1, 2003 following a reactor trip caused by a computer controller failure. Staff reported that the fault was corrected and the reactor was returned to service a few days later.

Pickering 'B' – Overcooling Event

29. With reference to paragraphs 23 to 26 of the minutes of the Commission meeting held on February 26, 2003 (i.e., concerning an event at Pickering 'B' NGS that involved water pipes freezing

when the Powerhouse Emergency Venting (PEV) panels were opened during very cold weather to dissipate a suspected accumulation of hydrogen), staff reported that all affected systems have since been refurbished or dispositioned and that staff consider them fit for service. Staff further noted that the procedures for dealing with a suspected hydrogen accumulation in that area have been modified. Staff expressed its satisfaction with the short-term actions taken by OPG; however, longer-term corrective actions still require planning and execution. Staff agreed to provide the Commission with a further update on this event when those longer-term actions have been accepted and initiated.

ACTION

Gentilly-2 NGS – Power Reductions Due to Algae Build-up

30. Referring to CMD 03-M28, staff reported that operating power at the Gentilly-2 NGS was manually reduced to 59% of full power on April 16 while an accumulation of algae on the cooling water intake filters was removed. The reactors were returned to full power the following day.
31. In response to questions from the Members, a representative from Hydro Québec explained how the problem was detected and how it is linked to a natural phenomenon that occurs in the St. Lawrence River each spring. Hydro Québec noted that the problem has not occurred in the past because the station is normally on a planned outage at that time of year. Hydro Québec also noted that it had prepared for the event using experience from a similar event that occurred at OPG's Pickering NGS in 2001.

CNSC Staff Annual Report for 2002 on the Canadian Nuclear Power Industry

32. With reference to the annual report (INFO-0739) attached to CMD 03-M29, staff summarized the findings and conclusions contained therein. In summary, staff concluded that, although improvements are needed and underway in several areas, all nuclear generating stations in Canada operated safely in 2002.
33. Staff indicated that it is currently reviewing the content and format of the annual report for future years. This is due, in part, to the longer term licenses that have recently been issued by the Commission, and the corresponding increase in the Commission's and stakeholders' needs for interim performance information. It is also planned that future reports will provide more continuity in terms of the linkages to previously reported performance. Staff will be consulting with stakeholders in its redesign of the annual report.

34. In its general comments on the report, the Members recommended that the title of future annual report explicitly state that it is a report on *performance*. The Commission also noted that the report contains very little discussion of the issues, and that the opening summary statements do not adequately identify the several known performance deficiencies that currently exist. The Members also requested that future reports provide a better indication of whether the licensees are taking the appropriate initiatives to address the noted deficiencies.
35. With reference to the specific information contained in the report, the Members noted that the number of unplanned transients appears to have been significantly higher in 2001 and questioned if this is within a normal range of expectation. Staff responded that the variation is not unusual and that it may be the result of more units having started up from outages in that year – a time when more trips at very low power levels are generally more common. To assist in the interpretation of this data in the future, staff stated that it is attempting to better measure all perturbations as they occur from initial criticality to 100% power.
36. The Members questioned the reason why the reported accident severity rate in the year 2002 was much higher at Gentilly-2 NGS than at the other stations. In response, a representative of Hydro Québec reported that the majority of the accidents in that year occurred in the administration building and that one accident in particular (involving a fall on the stairs) contributed to the higher rate. Hydro Québec also noted that, since the most recent licence renewal for the station, Hydro Québec, in cooperation with the unions on the site, has taken several positive steps to improve safety and safety culture at the station.
37. Further with respect to trends in accident severity rates in general, the Members noted a dramatic decrease in the rate from 1999 (1329) to 2002 (343). The Members questioned whether this reflects an actual trend, or whether the rate in 1999 was an anomalous year. Staff agreed to examine the accident severity data for 1999 and earlier if possible and report back to the Commission at a future meeting.
38. The Members questioned why the single-unit stations (Gentilly-2 and Point Lepreau) appear to have performed less well than the multi-unit stations in Ontario. In response, a representative of Hydro Québec acknowledged that it has had to face greater challenges in the areas of radiation protection and conventional health and safety, including the need to address identified cultural

ACTION

and behavioral attitudes of some of its staff towards safety procedures. Hydro Québec reiterated that significant progress is being made in this regard with the assistance of the unions. Hydro Québec expressed the view that its deficiencies in quality assurance are similar to those at other stations and that measures are being taken to meet the CNSC requirements within the specified time frames. A representative from New Brunswick Power (NB Power) also expressed the company's commitment to address all areas that are rated as below requirements as quickly as possible.

39. Further with respect to performance at Point Lepreau NGS, the Members sought an explanation for why there has been a performance decline in Emergency Preparedness implementation. In response, NB Power noted that this was related to a problem in the completion of the requisite documentation due to other demands placed on administrative staff. Resources have since been realigned to complete this work by June 20, 2003. NB Power also noted that the performance rating for the *program* aspects of Emergency Preparedness at Point Lepreau NGS had increased from "meets requirements" to "exceed requirements" in the same time period.
40. In response to a follow-up question from the Members, both Hydro Québec and NB Power indicated that the availability of resources is not a factor that is impeding progress in their improvement initiatives.
41. Further in response to this line of questioning by the Members, staff stated that there is no fundamental reason why a multi-unit station would perform better than a single-unit station. Staff noted, however, that it is reasonable to expect that a larger utility, such as Ontario Power Generation, will have access to a generally broader and deeper pool of expertise and resources.

Status Report on Power Reactors

42. With reference to CMD 03-M30, staff provided information on the current status of all power reactors. As an update since CMD 03-M30 was issued, staff reported that Bruce Power Inc. has now submitted 38 of the 55 prerequisites for the restart of Unit 4 at Bruce 'A' NGS; staff has confirmed 23 items as being complete and 9 requiring only field verification. With respect to the planned restart of Unit 3 at the same station, staff reported that Bruce Power Inc. has submitted 32 of the 55 required items; 22 of which staff has confirmed as complete.

43. In response to a follow-up question on the status of the Bruce 'A' restart project, Bruce Power Inc. stated that it expects to submit the remaining items for Unit 4 to CNSC staff for review on May 23, 2003; the request to remove the guaranteed shutdown state (GSS) will be made at the same time. Bruce Power Inc. also stated that the request to remove the GSS at Unit 3 will follow in approximately 4 weeks.
44. In response to a question from the Members on the current status of the Pickering 'A' NGS Unit 4 restart, a representative of Ontario Power Generation (OPG) noted that, while the GSS had been removed at Unit 4 with CNSC approval, the unit was returned to the shutdown state to correct minor problems identified in the initial low power tests. The approach to critical is expected to continue in a few days. A re-authorization by CNSC to remove the GSS is not required.

Nuclear Emergency Preparedness and Response in Canada

45. With reference to the report appended to CMD 03-M31 titled, "*Proceedings of the Workshops on Nuclear Emergency Management: November 2002 to February 2003*", staff provided a summary of the proceedings and participant recommendations from a series of multi-jurisdictional workshops on nuclear emergency management held in Ontario, Quebec and New Brunswick. The workshops were held at the request of the Commission following the related presentations made to it at its May 23, 2002 public meeting.
46. Staff reported that the workshops were well attended and provided the participants with an excellent opportunity to openly discuss their views on best practices, strengths, issues and areas requiring improvement in the nuclear emergency management network. Feedback from the participants showed that they found the opportunity useful and that they would like to have similar meetings in the future.
47. From the general description of the workshop participants, the Members questioned whether Agriculture Canada had been involved. In response, staff noted that the relevant federal departments, including Agriculture Canada, participated in the workshops.
48. In summarizing the results, staff stated that nothing from the workshops has caused staff to change its conclusion that nuclear emergency preparedness in Canada is generally effective.

Consequently, staff is viewing the issues raised during the workshops as opportunities for improvement, rather than as fundamental deficiencies.

49. Staff, while noting that the CNSC has limited jurisdiction in off-site emergency preparedness and response, indicated that it will continue to be engaged with the other authorities and stakeholders in following-up on the recommendations from the workshops. As examples, staff stated that it will continue to actively participate in the upcoming planned major exercises and will be working to finalize and publish the CNSC's current draft guides on emergency preparedness.
50. On the above-noted "follow-up" on the workshop results, the Members stressed the importance of strong and coordinated leadership, particularly in light of the multi-jurisdictional environment. The Members noted that the public expects fully coordinated plans and responses and will not accept disputes over jurisdictional boundaries if an emergency arises.
51. In this regard, and following a discussion of how CNSC staff, Health Canada, OCIPEP and the respective provincial emergency authorities will move forward and lead in their respective areas of responsibility (including commitments to continue building informal partnerships), the Members expressed the view that more is needed in the way of a specific governance framework for coordinated improvement in this area. The Members expressed concern that, without a more concrete action plan, the hard work and concerns of the workshop participants may fade from the attention of the higher management levels of the responsible departments and governments. In this regard, the Members requested CNSC staff to bring the responsible parties together and arrive at a more defined action plan to address the workshop results – a plan that all parties can commit to and work together on. The action plan should also incorporate the other provinces where appropriate. It should also focus specifically on the key issue of funding and resources.

ACTION

The Commission noted that, by tasking CNSC staff with this action, it is again asking staff to facilitate actions that are beyond the strict jurisdiction of the CNSC. In this respect, the Commission respectfully requested the continued cooperation and commitment of the other federal and provincial partners at the highest levels in this endeavour.

52. Prior to concluding this item, the Members invited the representatives of the provincial authorities in attendance to comment on their impressions of the workshops. Representatives from Emergency Management Ontario - EMO, Quebec Ministry of Public Safety, and New Brunswick Emergency Measures Organization each provided statements (the full texts of which are available on the transcript of the meeting). In summary, the provinces found the workshops to be useful and informative, both in terms of the information about the current systems that was tabled and shared among participants, and in terms of what needs to be better communicated to address some issues that may be perceived as opposed to actual. Each of the provincial representatives took the opportunity to reiterate the high priority being placed on emergency preparedness in their jurisdictions, including reviews of the respective provincial legislation and policies that set out the requirements and bases for current improvement initiatives. The three provinces also expressed a general desire and willingness to continue to work actively with the CNSC, other federal departments, and other provincial counterparts in improving the overall system.
53. In response to follow-up questions from the Members to CNSC staff, staff described its duty officer and emergency notification list system that is reviewed and updated on a regular basis, and how designated CNSC staff would assemble and become engaged in the early stages of a nuclear emergency, both at its Emergency Operations Centre in Ottawa, and at the affected site or facility. Staff further stated that its response procedures are regularly exercised. Mr. McKerrell of Emergency Management Ontario added that the notification network lists in Ontario are also continually updated and validated periodically. Mr. McKerrell further extended an invitation to the Members to observe the next major exercise at Pickering that is planned for October 2003.
54. In closing this discussion on emergency preparedness and response, the Members acknowledged the statements made earlier by the staff and other contributors concerning the effectiveness of the current emergency preparedness and response arrangements. The Members also acknowledged the commitments and evidence of continued vigilance on the part of all parties involved. The Members, however, reiterated the importance that it is placing on the need to keep the actions for continued and coordinated improvement clearly on the agenda of all of the federal and provincial partners. The Members further expressed its sincere thanks and appreciation to all those who participated in, and contributed to the success of the workshops.

The Meeting adjourned at 12:15 on May 21, 2003.

The Meeting resumed at 4:25 p.m. on May 22, 2003.

Atomic Energy of Canada Limited - Status Report on New Processing Facility Commissioning

55. With reference to CMD 03-M32, staff provided the Members with the ninth progress report on the completion of prerequisites for the commencement of active commissioning at the New Processing Facility (NPF) at the Chalk River Laboratories. In its earlier licensing decision on this matter, dated January 15, 2002, the Commission required staff to present status reports on this project at each regularly scheduled Commission meeting until staff had authorized the start of the active commissioning program.
56. Staff reported that only one prerequisite to active commissioning remains open. The remaining item involves an assumption in the safety case for the NPF concerning the availability of the active ventilation system. Staff further reported that AECL provided the requested revised safety case for this issue on May 12, 2003 and that the CNSC staff has accepted the revised safety case, conditional on AECL implementing identified commitments.
57. In response to a question from the Members on the final resolution of this issue, staff explained that, with the addition of an additional back-up diesel generator to support the cooling of the process equipment, staff considers that the safety margin has been increased such that the remaining risk is not unreasonable. AECL provided a further description of the additional action taken in this regard.
58. Staff stated that it anticipates authorizing the commencement of active commissioning at NPF during the week of May 26, 2003. Based on this information, and unless there are further unforeseen delays in the granting of the approvals for active commissioning, the Commission considers this reporting action to be closed.

Environmental Effects Monitoring in the Vicinity of Cameco's Port Hope and Blind River Facilities

59. With reference to CMD 03-M33, staff provided a report on the progress made in designing and implementing an environmental effects monitoring program for Cameco's Port Hope and Blind River facilities. In its *Records of Proceedings, Including Reasons*

for Decisions for the re-licensing of these facilities (both dated February 18, 2002), the Commission requested that this report be made.

60. Before addressing the Cameco facilities specifically, staff outlined its proposed *Risk-based Decision Framework for Setting Environmental Monitoring Requirements for Class I Nuclear Facilities and Uranium Mines and Mills*. The framework was developed in consultation with various stakeholders and will be used to determine the appropriate scope and complexity of a monitoring program based on applicable risk considerations. Staff noted that the framework will be issued as a draft regulatory document for public consultation in the current fiscal year.
61. Staff stated that, using the above-noted framework, the Cameco facilities were both identified as “medium risk”. Staff noted that such facilities are required to have an environmental monitoring program with only a pathways confirmation monitoring component. Based on this determination, staff described the modifications to the current monitoring programs at the Blind River and Port Hope facilities that are currently being considered.
62. In response to the Members’ questions on the special investigations described in CMD 03-M33, staff explained that those special investigations are being carried out to resolve some of the uncertainties that remain in the risk assessments. Staff added that none of the uncertainties are such that staff would anticipate a potential significant impact on biota, or change in the assigned medium risk designation. Staff also outlined the progress being made in the design and execution of the special investigations.
63. In response to a follow-up question from the Members on the distinction being made between humans and other biota in the environment, staff stated that in no case has the required monitoring information and other relevant information (such as health studies) shown potential effects to humans that would warrant direct biological monitoring of human populations. The current risk assessment uncertainties and new information being gathered is centred on populations of non-human species.
64. The Members asked how the issues concerning uranium in soils and its effect on invertebrates and vegetation (as discussed during the re-licensing hearings for these facilities in January 2002) will be addressed in the planned special investigations. Staff responded that this particular issue is being addressed in a separate research project that is expected to be concluded by March 2004. Based on

the results of that research, a decision on the need for additional work on toxicity of uranium to soil organisms will be made. Staff stated that, based on current knowledge of the low risks from the uranium concentrations in the soil, biological effects monitoring in the soils at Port Hope cannot be justified at this time.

65. The Members sought clarification from staff on the proposed modeling of the soil pathways for antimony and lead near Port Hope. Staff explained that those elements are from other industries that were present in Port Hope's history. Staff noted that, although Cameco was not responsible for the presence of antimony and lead in the environment, the assessment will help complete the picture of risk to exposed biota. Staff further noted that, although this is a data gap in the risk assessment, the levels of these contaminants are low and the value of pursuing this remains under consideration.

McMaster University – Decommissioning Plan and Financial Guarantee

66. With reference to CMD 03-M34, staff provided a status report on the *Preliminary Decommissioning Plan* (PDP) and financial guarantee for decommissioning of the McMaster Nuclear Reactor (MNR). The status report was requested by the Commission at the time it renewed the operating licence for the MNR in June 2002 (ref. *Record of Proceedings, Including Reasons for Decision* dated June 24, 2002).
67. Staff reported that McMaster University has proposed a two-part financial guarantee which CNSC staff has accepted in principle. The first decommissioning phase, covering the shutdown and removal of fuel and other radioactive components, will be covered by a fully-funded segregated financial guarantee. The second phase, involving the remaining non-radioactive work needed to render the facility to its final decommissioning end-state, will be covered by a fund into which McMaster will make annual payments. The payments may vary from year-to-year within established limits and will continue until the full cost of decommissioning is covered. Staff expressed the view that this plan provides an acceptable, balanced, risk-based approach to the financial guarantee for the MNR facility. Staff is proceeding with the legal and technical reviews of the PDP and financial guarantee prior to recommending that the Designated Officer amend the licence. The proposed new licence condition will be written so that the CNSC will have sufficient notice of any change in the circumstances at MNR to ensure that the risk continues to be adequately addressed by the financial guarantee. Staff indicated that it would inform the Commission when the licence has been amended.

ACTION

68. In response to questions from the Members on the specifics of the proposed funds, staff reported that the segregated trust for Phase-1 will initially contain \$3.57 million, but that this may vary depending, for example, on the status of the fuel inventory at any point in time. Staff also noted that the total estimated decommissioning cost for both phases is currently estimated to be in the range of between \$9 million and \$11 million, including contingencies. The trust funds (which are hard money accounts) are expected to cover the full decommissioning liability by the year 2019.
69. In response to the Members' question on the anticipated remaining life of the facility, a McMaster University representative stated that there is currently no projected shutdown dates for the MNR. McMaster University stated that it remains committed to continuing its related research and educational programs over the long-term – beyond the 15 years that the fund for Phase-2 decommissioning may be accumulated.
70. In response to follow-up questions from the Members on the fund, McMaster University stated that the fund currently contains \$3.7 million which is more than the estimated \$2.9 million cost for Phase-1. McMaster University also anticipates that if the return on the fund performs better than 2.5% annually, the fund may be fully funded in less than 10 years (i.e., before 2013 rather than by 2019 as currently assumed).
71. With respect to a question from the Members on the variations that may occur in the segregated trust as a result of changes in the fuel status, McMaster University stated that, for each new fuel assembly added to the core, an amount is added to the fund to deal with its ultimate disposal.

TRIUMF – First Year Status Report on Regulatory Performance

Commission Members Barnes and McDill excused themselves from this meeting item to avoid any perceived conflict of interest that could arise due to the relationship between the universities where they teach and TRIUMF.

72. With reference to CMD 03-M35, staff provided a report on the regulatory performance at the TRIUMF particle accelerator facility. The report addresses the areas of concern identified at the last licence renewal hearing. The Commission, in its *Record of Proceedings, Including Reasons for Decision* for the licence renewal (dated March 22, 2002) requested staff to present this first

year performance report.

73. Staff reported that the TRIUMF facility has been operated safely during the past year, and that a number of positive steps have been taken by the licensee to address previously identified deficiencies. Staff reported that the Quality Assurance Program is expected to remain below requirements until approximately the end of 2003. The required Preliminary Decommissioning Plan (PDP) is currently in development, but does not yet meet CNSC expectation (the PDP and related financial guarantee is expected to be in place within one year). Staff also reported good progress in the development and implementation of a training program that is based on SAT (Systematic Approach to Training) principles. Housekeeping problems previously identified have also been substantially improved in staff's opinion.
74. The Members sought further information on the status of negotiations with the federal government concerning the provision of the decommissioning financial guarantee. In response, TRIUMF stated that various decommissioning scenario cost estimates are being prepared in consultation with CNSC staff. The estimates will then need to be discussed with the National Research Council for funding decisions. Staff noted that its review of the cost estimates will likely be completed by the end of May 2003.
75. Staff also confirmed in response to a question from the Members that security measures at TRIUMF remain satisfactory.
76. In response to the Members' questions on the SAT-based training programs at TRIUMF, staff outlined the steps that have been followed by the licensee since this became a requirement. TRIUMF added that it has hired a Training Coordinator and that this has helped move the program forward considerably. TRIUMF acknowledged the benefits of SAT-based training in a facility of this size.
77. In response to the Members' questions on TRIUMF's commitment to safety culture, as illustrated by SAT-based training methods, TRIUMF responded that the organization has accepted and is embracing this as a new way of operating.
78. The Members questioned whether the 10 reported unplanned events were linked to, or caused by, the housekeeping issues discussed earlier. In this regard, the Members referred specifically to the event involving a serious injury that resulted from someone falling from a ladder. Staff responded that none of the events was

linked to the housekeeping issues. Staff stated that the injury from the fall was caused by the incorrect selection of equipment leading to a mechanical incident.

79. With reference to the hiring of a new Training Coordinator and Quality Assurance Manager, the Members asked whether these would be permanent positions. TRIUMF responded that the positions would be permanent.
80. In response to a question from the Members on the previously reported radiation doses involving targets, TRIUMF reported that all of the target stations where this was a concern either have been, or will be, replaced.

Closure of the Public Meeting

The public portion of the meeting closed at 6:02 p.m. and the Commission moved in-camera for the remaining items that involved confidential information.

New Cost Recovery Regulations

81. With reference to CMD 03-M36 with attachments, staff described the purpose of, and consultation process that was followed in developing, the proposed new *Canadian Nuclear Safety Commission Cost Recovery Regulations*.
82. Following consideration of the matter, the Commission resolved to make the *Canadian Nuclear Safety Commission Cost Recovery Regulations* as set out in the schedule annexed as Attachment 2 to CMD 03-M36.
83. The Commission requests staff to forward the regulations to the Special Committee of Council for approval.

DECISION

ACTION

Nuclear Security – Review of CNSC Order 01-1

84. With reference to CMD 03-M37, staff provided the Members with a status report on CNSC Order 01-1. The Order remains in effect.

Chair

Recording Secretary

Secretary

ANNEX A

CMD	DATE	File No
03-M25	2003-04-16	(1-3-1-5)
Notice of Meeting held on Wednesday and Thursday, May 21 and 22, 2003 in Ottawa		
03-M26	2003-05-07	(1-3-1-5)
Agenda of the meeting of the Canadian Nuclear Safety Commission (CNSC) held in the Public Hearing Room, 14th floor, 280 Slater Street, Ottawa, Ontario, on Wednesday and Thursday, May 21 and 22, 2003		
03-M26.A	2003-05-16	(1-3-1-5)
Revised 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, May 21 and 22, 2003		
03-M27	2003-05-06	(1-3-1-5)
Approval of minutes of Commission meeting held April 10, 2003		
03-M28	2003-05-06	(1-3-1-5)
Significant Development Report no. 2003-4		
03-M28.A	2003-05-07	(1-3-1-5)
Significant Development Report no. 2003-4 - Supplementary Information		
03-M29	2003-05-05	(26-1-0-0-0)
CNSC Staff Annual Report for 2002 on the Canadian Nuclear Power Industry		
03-M30	2003-05-06	(1-3-1-5)
Status Report on Power Reactors		
03-M31	2003-05-06	(1-14-0, 1-14-2)
Nuclear Emergency Preparedness and Response in Canada		
03-M32	2003-05-06	(24-1-3-0)
Atomic Energy of Canada Limited : Status Report on Approval to Commence Active Commissioning of the New Processing Facility		
03-M33	2003-05-06	(36-3-0-0)
Cameco Corporation: CNSC Staff Report on the Design and Implementation of an Environmental Effects Monitoring Program in the vicinity of Port Hope and Blind River Facilities		

03-M34 2003-05-06 (26-1-1-1-0)

Status Report on the McMaster University Nuclear Reactor Preliminary Decommissioning Plan and Financial Guarantee

03-M35 2003-05-09 (29-1-1-0-0)

TRIUMF: First Year Status Report on Regulatory Performance under CNSC Nuclear Facility Particle Accelerator Operating Licence

03-M36 2003-05-06 (20-1-17-0, 1-1-19-0)

New *Canadian Nuclear Safety Commission Cost Recovery Regulations* **[In closed session]** (This document contains prescribed information and is not publicly available)

03-M37 2003-05-05 (1-11-21-3)

Nuclear Security: Review of CNSC Order 01-1 **[In closed session]** (This document contains prescribed information and is not publicly available)