

Record of Proceedings, Including Reasons for Decision

In the Matter of

Applicant TRIUMF Accelerators Inc.

Subject Application to Renew the Operating Licence for
the TRIUMF Particle Accelerator Facility

Hearing
Dates December 13, 2006 and March 7, 2007

RECORD OF PROCEEDINGS

Applicant: TRIUMF Accelerators Inc.

Address/Location: 4004 Wesbrook Mall, Vancouver, BC, V6T 2A3

Purpose: Application to Renew the Operating Licence for the TRIUMF Particle Accelerator Facility

Application received: November 8, 2006

Date(s) of hearing: December 13, 2006 and March 7, 2007

Location: Canadian Nuclear Safety Commission (CNSC) Public Hearing Room, 280 Slater St., 14th. Floor, Ottawa, Ontario

Members present: L.J. Keen, Chair J.A. Dosman
A.R. Graham A. Harvey

Secretary: M.A. Leblanc
General Counsel: J. Lavoie
Recording Secretary: S. Dimitrijevic

Applicant Represented By		Document Number
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CNSC staff		Document Number
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Intervenors		Document Number
See appendix A		

Licence: Renewed
Date of Decision: March 7, 2007

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Introduction

1. TRIUMF Accelerators Inc. (TRIUMF) has applied to the Canadian Nuclear Safety Commission (CNSC¹) for the renewal of the Class IB operating licence for the TRIUMF particle accelerator facility, located on the campus of the University of British Columbia (UBC) in Vancouver, British Columbia. The current operating licence PA1OL-01.05/2007 expires on March 31, 2007. TRIUMF has requested a five-year licence term.
2. The TRIUMF facility is used for research in the fields of nuclear and particle physics and for the production of various radioisotopes mainly for use in medical facilities. TRIUMF operates a suite of five cyclotrons and two linear particle accelerators.
3. A third linear accelerator has been recently completed and commissioned as a Class II accelerator facility. TRIUMF is requesting and CNSC staff is recommending that this facility licence be consolidated with the Class IB² site licence. The Class II licence also expires on March 31, 2007.

Issues

4. In considering the application, the Commission was required to decide, pursuant to subsection 24(4) of the *Nuclear Safety and Control Act*³ (NSCA):
 - a) if TRIUMF is qualified to carry on the activity that the licence would authorize; and
 - b) if, in carrying on that activity, TRIUMF would make adequate provision for the protection of the environment, the health and safety of persons and the maintenance of national security and measures required to implement international obligations to which Canada has agreed.

¹ In this *Record of Proceedings*, the *Canadian Nuclear Safety Commission* is referred to as the “CNSC” when referring to the organization and its staff in general, and as the “Commission” when referring to the tribunal component.

² Class I and Class II facilities are defined in the *Class I Nuclear Facilities Regulations* (S.O.R./2000-204) and the *Class II Nuclear Facilities and Prescribed Equipment Regulations* (S.O.R./2000-205), respectively.

³ S.C. 1997, c. 9.

Public Hearing

5. The Commission, in making its decision, considered information presented for a public hearing held on December 13, 2006 and March 7, 2007 in Ottawa, Ontario. The public hearing was conducted in accordance with the *Canadian Nuclear Safety Commission Rules of Procedure*⁴. During the public hearing, the Commission received written submissions and heard oral presentations from CNSC staff (CMD 06-H28, CMD 06 H28.A and CMD 06-H28.B) and TRIUMF (CMD 06-H28.1, CMD 06 H28.1A and CMD 06-H28.1B). The Commission also considered written submissions from 5 intervenors (see Appendix A for a detailed list of interventions).

Decision

6. Based on its consideration of the matter, as described in more detail in the following sections of this *Record of Proceedings*, the Commission concludes that TRIUMF is qualified to carry on the activity that the licence will authorize. The Commission is also satisfied that TRIUMF, in carrying on that activity, will make adequate provision for the protection of the environment, the health and safety of persons and the maintenance of national security and measures required to implement international obligations to which Canada has agreed. Therefore,

the Commission, pursuant to section 24 of the *Nuclear Safety and Control Act*, renews the Class IB Operating Licence to TRIUMF Accelerators Inc. for its particle accelerator facility located in Vancouver, British Columbia. The licence, No. PA1OL-01.00/2012, is valid from April 1, 2007, until March 31, 2012.

7. The Commission includes in the licence the conditions recommended by CNSC staff, as set out in the draft licence attached to CMD 06-H28 and CMD 06-H28.B.
8. With this decision, the Commission requests that CNSC staff present a status report to the Commission on the performance of the facility during the first half of the licence term. The status report will be presented at a public proceeding after the mid-point of the licence term, in the spring of 2010.

⁴ S.O.R./2000-211.

Issues and Commission Findings

9. In making its licensing decision, the Commission considered a number of issues relating to TRIUMF's qualification to carry out the proposed activities and the adequacy of the proposed measures for protecting the environment, the health and safety of persons, national security and international obligations to which Canada has agreed.
10. The findings of the Commission presented below are based on the Commission's consideration of all of the information and submissions available on the record for the hearing.

Radiation Protection

11. As part of its assessment of the adequacy of provisions for protecting the health and safety of persons at the particle accelerator facilities, the Commission considered the past performance and future plans of TRIUMF in the area of radiation protection.
12. In this regard, TRIUMF described the activities and monitoring programs for radiation safety that are in place at its facilities. TRIUMF explained that day-to-day safety is the responsibility of two groups within the Environmental, Health and Safety Office. The Safety System Group designs, builds and maintains cyclotron and accelerator personnel safety systems and radiation monitoring systems, and the Radiation Protection Group looks after the activities to do with radiation monitoring program.
13. CNSC staff reported to the Commission that TRIUMF had radiation monitoring systems and personal dosimetry programs in place. Radiation survey was routinely performed and workers' doses were within regulatory limits and in accordance with ALARA (As Low as Reasonably Achievable). CNSC staff further reported that the recorded doses to personnel at the facility have been consistently well below the regulatory limits.
14. The Commission inquired about median doses that have been reduced for all groups of personnel, except for the operations group. In response, TRIUMF noted that radiation fields outside of accelerator's shields represent the largest source of exposure to TRIUMF's staff and explained that the temporary increasing trend was associated with an unusual maintenance activity required in the cyclotron. CNSC staff noted that, during the licence period, TRIUMF had not exceeded the Action Level for personnel dose to workers of 15 millisievert per year (mSv/a) and that it rarely exceeded its own administrative limit of 10 mSv/a.

15. With respect to the protection of the public from radiation, TRIUMF noted that the radiological releases from the facility have been consistently low and well below the annual regulatory limit of 1 mSv. TRIUMF also noted that the maximum dose expected to a member of the future south campus community would be less than 10 mSv/a or 1 per cent of the annual limit for a member of the public.
16. Based on the information provided, the Commission is of the opinion that TRIUMF is making, and will continue to make adequate provisions for the protection of persons at the facility and the general public from the effects of radiation.

Environmental Protection and Monitoring

17. With respect to the protection of the environment, TRIUMF informed the Commission about implementation of its program on environmental protection and presented results of effluent analysis and monitoring. The results show that the largest contribution to the effluent releases comes from beta-plus (β^+) emitters from air activation effluents released continuously during operation of the 500MeV cyclotron. The total annual effluent releases are consistently less than 1% of Derived Release Limits (DRL) and well below the Action Level established at 5% of the DRL. The contribution of liquid effluents was below 0.001% of the DRL.
18. CNSC staff confirmed that only a very small amount of radioactivity is released from the facility to the environment and reported that TRIUMF maintains its DRLs up-to-date and in compliance with CNSC requirements. CNSC staff concluded that this program and its implementation met requirements.
19. CNSC staff informed the Commission that TRIUMF had submitted a revision of its Environmental Monitoring Program that adequately covers the objectives, environmental characteristics around the facility, significant radiation sources and principal pathways. However, it lacked some details about sampling methodology and procedures. CNSC recommended a new licence condition with respect to environmental protection requiring TRIUMF to meet the new CNSC regulatory standard S-296 *Environmental Protection Policies, Programs and Procedures at Class I Nuclear Facilities and Uranium Mines and Mills* (March 2006).
20. TRIUMF provided more details about gaseous effluent releases and informed the Commission about its new ventilation system that includes filtration for particulate and volatile active materials and that is equipped with a continuous air monitor and filters for particulate sampling. TRIUMF further informed the Commission about the implementation of its new procedure for annual calibration of air monitor sampling flow rota-meters.

21. TRIUMF also informed the Commission about its current effort to improve environmental monitoring and to study potential impact of its effluent releases on the environment and surrounding population by collecting vegetation and surface water samples.
22. The Commission inquired into the difficulties associated with monitoring the release of short-living airborne species and the potential ways to overcome this problem. TRIUMF responded that these species have a half-life significantly shorter than the sampling frequency and a low intensity of radiation, which is only about 1% stronger than the natural background activity. TRIUMF explained that, to overcome the problem, continuous air monitoring results would need to take into consideration atmospheric conditions and background fluctuations and be correlated with operation parameters of the facility. CNSC staff concurred and noted that TRIUMF has an acceptable effluent monitoring and environmental monitoring program and thus the air monitoring was not a requirement, but rather the licensee's proposal for their facility program.
23. The Commission is satisfied that TRIUMF is making, and will continue to make adequate provisions for the protection of environment and continuous monitoring of effluent gases.

Operational Performance

Compliance Activities

24. During the licence period, CNSC staff performed eight compliance inspections. CNSC staff reported that the licensee's annual compliance reports were consistent with the data collected during compliance verification activities. The trend of inspection performance showed a steady improvement in terms of compliance over the licence period, as demonstrated by the most recent inspection done in August 2006 where no non-compliance items were found. CNSC staff also noted that a large number of program documents had been produced and put in place by the licensee during this period. CNSC staff concluded that the overall performance of the licensee meets requirements.
25. CNSC staff reported on the deficiencies observed in radiation protection practices in the waste management facility and the absence of a waste management program document. CNSC staff noted that TRIUMF has since upgraded the facility and that further inspections did not reveal any issues with respect to the waste management area. CNSC staff acknowledged the upgrades and continued to monitor the performance.

26. The Commission inquired whether the waste management facility was big enough to accommodate the waste produced during the proposed licence period. TRIUMF responded that it had expanded and upgraded the waste management area. TRIUMF added that it had not envisaged an increase in waste production during this licence period and that the facility would be adequate.
27. The Commission further inquired whether all the waste was kept on site permanently. TRIUMF responded that the waste was shipped off site periodically, following the existing procedure and schedule.

Conventional Safety

28. CNSC staff reported that two small incidents, with no serious consequences, have been noted during the current licence period. One incident exposed deficiencies in the design of the interlock system, in the implementation of procedural control and in the incident investigation system. The other incident revealed deficiencies in training, warning signs, availability of adequate drawings and in work control. TRIUMF responded to CNSC staff's request to submit its own assessment and response to these incidents and submitted a revised report to CNSC staff in January 2007. CNSC staff confirmed that TRIUMF's report recognized its shortcomings and the licensee took immediate actions to improve high voltage safety and related training practice and documentation.
29. The Commission is satisfied with the progress TRIUMF has made in the area of waste management. The Commission is of the opinion that TRIUMF has improved its approach to conventional safety and safety and that it will continue to make adequate provisions for safe operation of the facility.
30. National Superconducting Cyclotron Laboratory (NSCL) at the Michigan State University and Indiana University Cyclotron Facility, in their written submissions, expressed their positive opinions on the safety culture as witnessed during their visits to the TRIUMF facility.

Performance Assurance

The Commission examined performance assurance, including aspects of QA, organizational structure and training, as a further indication of the adequacy of TRIUMF's qualifications and protection measures.

Quality Assurance

31. CNSC staff reported that the audit performed by CNSC staff in 2006 resulted in seven Directives, seven Action Notices and one Recommendation, which were issued to address identified deficiencies. TRIUMF has been requested to work on the identified deficiencies and to report on its acknowledgement of the report as well as on the action plan.
32. CNSC staff noted the considerable improvement in TRIUMF's attitude towards quality assurance (QA), pointing out that the quality management program and its implementation have improved steadily during the current licence period. However, the gaps that still exist in TRIUMF's quality management program prevent the program from being used as a uniform system that assures protection of health and safety of persons and the environment. CNSC staff concluded that the program meets requirements, but its implementation was rated below requirements.
33. TRIUMF outlined the efforts made regarding the development and implementation of its QA program, which included the appointment of an interdivisional task force and the hiring of an independent consultant and a QA manager. TRIUMF further noted the implementation of new document management software to form a unified data base, the extensive documentation updates to conform to its Standard Operating Procedures and the implementation of a site-wide non-conformance reporting.
34. The Commission asked what specific steps TRIUMF planned to take to improve the implementation of its QA program. Triumph explained the action plan to address the directives and action notices from the QA audit of September 2006. TRIUMF stated that good progress had already been made and that a majority of the issues had already been addressed. The completion of the remaining items was expected by the summer of 2007. TRIUMF added that the processes and procedures have evolved together with the growing facility and that the new QA program was designed to bring these various partial processes into a common process.
35. CNSC staff stated that it was satisfied with the progress of the licensee on their QA program and that it expects the implementation of the corrective measures will result in significant improvement to the quality management system.
36. The Commission queried TRIUMF on its plan to employ a QA specialist. TRIUMF responded that it was in the process of making a decision whether to proceed with hiring one or several persons. The Commission expressed the view that the additional hiring of personnel in this area was a sign of TRIUMF's commitment to improve its QA.

37. The National Superconducting Cyclotron Laboratory (NSCL) at the Michigan State University and the Indiana University Cyclotron Facility, in their written submissions, referred to the TRIUMF's QA program as being an exemplary one.
38. The Commission is pleased to see that similar facilities of international stature are looking at TRIUMF's facility and its practices in the area of QA and safety in general. The Commission encourages this informal benchmarking and exchange of experience with internationally recognized institutions.
39. The Commission is satisfied with TRIUMF's commitment to improve its QA program and its demonstration of continuous progress in this area. The Commission is of the opinion that, with the planned improvements, TRIUMF will make adequate provisions for an appropriate quality management practice.

Organizational Structure

40. TRIUMF and CNSC staff reported that, on September 1, 2006, TRIUMF Accelerators Inc. was incorporated as a non-share capital corporation. TRIUMF Accelerators Inc., as the licensee and corporate entity, is ultimately responsible for all regulatory aspects under the NSCA and the regulations. It is to assume regulatory responsibility as well as control over the assets and operations of the nuclear facility. The same board of management and executives essentially control the new entity. CNSC staff noted there is a transition period to fully define and establish the new entity along with its relationship with the operating organization, the university members of the current joint venture, as well as the owner of the land, i.e., the University of British Columbia. As a result, CNSC staff recommended a licence condition to ensure the timely completion of the corporate restructuring plan and the provision of a financial guarantee within a reasonable period. Further discussion on the financial guarantee is found in the section entitled Financial Guarantee and Preliminary Decommissioning Plan of this *Record of Proceedings*.
41. CNSC staff also noted the organizational changes within TRIUMF aimed mainly at enhancing safety and regulatory oversight at the facility. Immediate changes that have been implemented are the creation of two oversight panels reporting to the Director of TRIUMF: one for Priorities and one for Safety and QA. In addition, other immediate changes have been to create a safety officer position reporting directly to the Director and changing the reporting of the QA to outside the safety group. CNSC staff expressed the view that this restructuring to enhance safety is a positive development.

Training Program

42. TRIUMF informed the Commission about its efforts to improve the organisational aspects of the existing programs and to better document training activities. TRIUMF stated that its training coordinator had been working throughout this licence period with the various operations groups on implementation of the Systematic Approach to Training (SAT).
43. TRIUMF revised its standard operating procedure documents for the training program to address CNSC staff's recommendations following a January 2005 inspection. Several improvements were implemented with respect to the electrical safety and training, including draft of a safety note entitled "High Voltage Safety at TRIUMF", and other documents were reviewed to comply with provincial legislations and new electrical safety regulations. With respect to the crane and safety training, the procedures were aligned with provincial regulatory requirements.
44. CNSC staff reported on the significant improvements in TRIUMF's training program. CNSC staff reviewed TRIUMF's revisions and proposed actions on training, and found them acceptable. CNSC staff stated that the training program meets requirements, while its implementation was below requirements.
45. Considering that the training program was rated below requirements for implementation, the Commission sought more information on how TRIUMF perceives its ability to meet the appropriate requirements. In response, TRIUMF expressed its commitment towards improvement in this area. TRIUMF acknowledged that, due to the research and educational nature of the activities and associated dynamic demographic situation, it was important to adopt a more systemic approach to training in order to ensure continuity and transfer of safety culture and skills to new generations of workers.
46. National Superconducting Cyclotron Laboratory (NSCL) at the Michigan State University and Indiana University Cyclotron Facility, in their written submissions, expressed their esteem for the TRIUMF's training programs and informed the Commission about their intention to use the TRIUMF's experiences in their own training programs.
47. The Commission recognizes significant improvements in TRIUMF's training program and expects further progress in documenting the training process and in the implementation of a centralized training record system. Acknowledging that some aspects of the program could be further improved, the Commission is of the opinion that TRIUMF will make adequate provisions for training of personnel during the proposed licence period.

Emergency Preparedness and Response

48. TRIUMF reported on its Emergency Preparedness Plan and Emergency Response Plan. TRIUMF noted the improvements made as a result of CNSC staff's September 2006 inspection, in areas such as drill evaluations and exercises for emergency response personnel.
49. CNSC staff stated that TRIUMF's Emergency Plans were acceptable. CNSC staff noted that it will perform physical verification of future emergency drills and exercises. CNSC staff concluded that the Emergency Preparedness Program and its implementation meet requirements.
50. At Day One of the hearing, the Commission sought more information on TRIUMF's preparedness in specific situations such as earthquake or fire emergency, considering in particular the specific construction and maintenance of the facility. TRIUMF submitted an updated Emergency Preparedness Plan for Day Two of the hearing, that includes worst case scenarios with cases of off-site and on-site exposure, description of response and drills. TRIUMF also confirmed that the worst case scenarios include projected doses to the public from radiological emergencies.
51. In response to the Commission's inquiry regarding the building code applied during the construction of facility, TRIUMF stated that the building standards were the same as the standards applied for the construction of reactor buildings in California, and that the specification applied was similar, if not more stringent than, the actual building code.
52. The Commission also inquired into the modelling of the worst case scenarios and sought more information on parameters and assumptions used. In response, TRIUMF provided more detailed explanation on the physical radiation barriers in place at the facility as well as information on realistic levels of radiation, gaseous effluents and particulate emissions, which had been used for the modelling. The size, projected growth, location, direction of winds and other parameters were also taken into account during preparation of the emergency preparedness documentation.
53. The Commission queried TRIUMF about the growing population in the vicinity of the facility and its potential impact on the emergency preparedness analyses and planning. TRIUMF responded that the housing on UBC campus, with a few thousands residents located within a radius of 2 km from the accelerator facility, is the nearest community. The future south campus community would be located at approximately 0.5 km from the facility. TRIUMF assured the Commission that the current and planned communities surrounding the facility have been included in the analysis and the development of the emergency preparedness program.

54. The Commission requests that CNSC staff closely monitor the population growth and expansion of the community surrounding the TRIUMF facility. The findings should be included in the mid-term status report.
55. The Commission is satisfied with the improvements TRIUMF has implemented in its emergency preparedness procedures regarding drill evaluations and exercises for emergency response personnel. Based on the information received, the Commission concludes that emergency preparedness at the TRIUMF facility is adequate for the proposed licence.

Fire Protection

56. During this licence period, CNSC staff conducted an augmented fire protection inspection at the TRIUMF facility. CNSC staff concluded that, due to design deficiencies, there was an increased level of risk, primarily to the occupants of the facility and that corrective actions were required in order to prevent unreasonable risk. CNSC staff concluded that the fire protection program meets requirements, while the implementation of the program was rated below requirements.
57. TRIUMF informed the Commission that a preliminary response to the inspection findings has been provided to CNSC staff and corrective actions implemented. By the time of this licensing hearing, more than half of the deficiencies identified during the inspection have already been addressed. CNSC staff noted that it will continue monitoring the implementation of corrective actions.
58. Noting the importance of fire protection for the operational and overall safety of the workers and the environment, the Commission expressed its concern with the length of time taken to report on the inspection findings including the information provided to the Commission. CNSC staff responded that, as a result of the on-going direct communication between the licensee and CNSC staff, TRIUMF promptly began taking the required corrective actions, including those needed to meet the new requirements as set out in the standard NFPA-801 (2003)⁵. CNSC staff thus noted that it was satisfied with the management of risk and ongoing compliance carried out in this area. However, CNSC staff acknowledged that the information should have been available earlier and stated its commitment towards improvement in this regard.
59. The Commission views the improvements to the fire protection program as a priority and thus expects a expedited implementation of the corrective measures during the proposed licence period. The Commission expects a report on progress in the area of fire protection as a part of the mid-term status report.

⁵ National Fire Protection Association, NFPA-801: *Standard for Fire Protection for Facilities Handling Radioactive Materials*, 2003 edition.

60. Based on the information received, the Commission concludes that fire protection at the TRIUMF facility is adequate for the proposed licence. The Commission approves the new licence condition proposed by CNSC staff regarding fire protection set out in CMD 06-H28.B.

Security

61. The Commission considered in a closed session the CNSC staff's report on the security inspection conducted in 2003 and noted that all outstanding security issues have been resolved.
62. While it would not be appropriate for the Commission to discuss security matters in detail in a public document, such as this *Record of Proceedings*, the Commission is satisfied that TRIUMF's performance with respect to maintaining security at the facility has been acceptable.
63. Based on the information provided, the Commission concludes that TRIUMF has made, and will continue to make, adequate provisions for ensuring the physical security of the facility.

Safeguards

64. CNSC staff noted that during the current licence period, TRIUMF has provided the CNSC, on a timely basis, with all reports and information necessary for safeguards and has complied fully with International Atomic Energy Agency (IAEA) and CNSC requests. CNSC staff stated that the safeguards program and implementation meet requirements.
65. Based on the information received, the Commission is satisfied that TRIUMF has made, and will continue to make, adequate provisions in the areas of safeguards at its facility that are necessary for maintaining national security and measures necessary for implementing international agreements to which Canada has agreed.

Financial Guarantee and Preliminary Decommissioning Plan

66. CNSC staff informed the Commission that the final version of the TRIUMF Preliminary Decommissioning Plan (PDP) had been submitted in July 2004. The document has been found acceptable and in compliance with the CNSC Regulatory Guide G-219 "*Decommissioning Planning for Licensed Activities*". The cost estimate for eventual decommissioning of the facility has been revised in 2006 to \$38 million.

67. TRIUMF informed the Commission that the Board of Management of TRIUMF is committed to having the required financial guarantee in place as required before April 1, 2008. The Commission understands that TRIUMF was advised by the National Research Council (NRC) that the Central Agencies of government would release \$6.2 million to provide for the preliminary conformity cost as part of the global decommissioning fund that would be required for the ultimate decommissioning of the nuclear facility. The Commission is aware that the release of the related funds by the Central Agencies would be conditional upon TRIUMF providing the CNSC with the related financial guarantee and undertakings of the six full member universities that are part of the joint venture, for a total of \$10 million that would be in place prior to April 1, 2008 for safe shutdown state.
68. The Commission expects that CNSC staff and TRIUMF officials will continue their discussion to ensure that a formal and documented agreement is in place and reflects the necessary financial guarantee and commitments that will satisfy the CNSC. A licence condition will reflect these requirements in accordance with subsection 24(5) of the NSCA.
69. It is the responsibility of the licensee to ensure that the financial guarantee and the related long-term decommissioning funds are in place. The long-term funding strategy and plan is to be provided to the CNSC prior to April 1, 2008 in accordance with the costs outlined in the decommissioning plan and commitments made by TRIUMF as part of its written and oral submissions to the Commission during this hearing. CNSC staff is to ensure that the financial guarantee and the establishment of the decommissioning fund will be sufficient to meet the costs of the safe shutdown state of the nuclear facility and the ultimate cost of its decommissioning during the related period of time. The Commission expects the licensee to provide CNSC staff with the related financial agreements and funds in a timely manner in order to meet the required deadline in accordance with the decision by the Commission and the related licence conditions.

Public Information Program

70. CNSC staff stated its satisfaction with TRIUMF's public information program. CNSC staff noted that there were no public concerns or interest in licensing or compliance issues expressed by the public during this licence period.
71. TRIUMF submitted a list describing different components of its outreach program. The list of activities encompasses public tours, Scientists-in-the-Schools Program, Saturday Morning Lectures, Undergraduate Student Program, Teacher Programs, High School Student Programs, Community Involvement, TRIUMF Newsletter and Technology Transfer Bulletin.

72. British Columbia Association of Physics Teachers (BCAPT), in its written submission, emphasized the high quality of TRIUMF's scientific outreach program, organized site visits, frequent lectures to high-school students and to the general public, its research programs for teachers and its collaboration and cooperation with BCAPT.
73. The Commission is satisfied that TRIUMF continues to inform the public on its activities and is thus satisfied that TRIUMF's public information program is adequate.

Cost Recovery

74. Based on the information provided by CNSC staff, the Commission is satisfied that TRIUMF is in good standing with respect to the payment of fees.

Application of the *Canadian Environmental Assessment Act*

75. Before making a licensing decision, the Commission must be satisfied that all applicable requirements of the Canadian Environmental Assessment Act (CEAA) have been fulfilled. In this case, the renewal of a licence under paragraph 24(2) of the NSCA is not listed as a "trigger" under the *Law List Regulations*⁶ of the CEAA.
76. The Commission therefore concludes that an environmental assessment of the proposed operations of TRIUMF's facility, pursuant to the CEAA, is not required before the Commission may make a decision on the licence application.

Licence Length and Interim Reporting

77. TRIUMF applied for a 5-year operating licence. CNSC staff expressed the view that a five-year licence is appropriate for this type of facility and recommended that the Commission approve a five-year licence term in this case. In order to inform the Commission of progress made on the issues raised during the course of this hearing, CNSC staff offered to provide a mid-term status report to the Commission after the mid-point of the licence term, by the end of spring 2010.
78. Based on the information received, the Commission decides that a five-year licence term would be appropriate in this case. The Commission also decides that the proposed mid-term performance report will be presented after the mid-point of the licence term, in the spring of 2010.

⁶ S.O.R./94-636.

Conclusion

79. The Commission has considered the information and submissions of TRIUMF, CNSC staff and intervenors as presented in the material available for reference on the record.
80. The Commission concludes that an environmental assessment under the Canadian Environmental Assessment Act is not required before the Commission may make its decision with respect to the application for the renewal of the licence.
81. The Commission is of the opinion that the risks posed to the environment, to the health and safety of persons and to national security, given the measures and safety programs that are in place or will be in place by the licensee to control hazards, are not unreasonable.
82. The Commission is of the opinion that TRIUMF is qualified to carry on the activities that will be permitted under the licence. Furthermore, the Commission is of the opinion that in carrying on those activities, TRIUMF will make adequate provision for the protection of the environment, the health and safety of persons and the maintenance of national security and measures required to implement international obligations to which Canada has agreed.
83. The Commission therefore renews, pursuant to section 24 of the *Nuclear Safety and Control Act*, the Class IB operating licence for the TRIUMF particle accelerator facility located at Vancouver, BC. The Commission approves the renewal of the operational licence for the recently commissioned ISAC II accelerator facility and its consolidation with the site licence, as set out in the draft licence attached to CMD 06-H28.B.
84. The Commission includes in the licence the conditions recommended by CNSC staff as set out in the draft licence attached to CMD 06-H28 and CMD 06-H28.B.
85. The Commission requests that CNSC staff present a status report to the Commission on the performance of the facility during the first half of the licence term. The status report will be presented at a hearing after the mid-point of the licence term, by the end of spring 2010.

Linda J. Keen,
President
Canadian Nuclear Safety Commission

Date of decision: March 7, 2007

Date of release of Reasons for Decision: May 2, 2007

Appendix A – Intervenors

Intervenors	Document Number
Michigan State University –National Superconducting Cyclotron Laboratory (NSCL)	CMD 06-H28.2
British Columbia Association of Physics Teachers	CMD 06-H28.3
BC Cancer Agency Care and Research	CMD 06-H28.4
MDS Nordion	CMD 06-H28.5
Indiana University Cyclotron Facility	CMD 06-H28.6