Canadian Nuclear Safety Commission | Commission canadienne de sûreté nucléaire

CMD 22-H6.6

File / dossier : 6.01.07
Date: 2022-02-07
Edocs: 6733962

Written submission from the McMaster University

Mémoire de l'Université de McMaster

In the Matter of the

À l'égard de

TRIUMF Accelerators Inc.

TRIUMF Accelerators Inc.

Application by TRIUMF Accelerators Inc. for renewal of operating licence for its particle accelerator facilities

Demande de TRIUMF Accelerators Inc. pour le renouvellement de son permis d'exploitation pour ses installations dotées d'un accélérateur de particules

Commission Public Hearing

Audience publique de la Commission

March 23, 2022

23 mars 2022

Canada

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February 4, 2022

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To Whom it May Concern:

McMaster University and TRIUMF have long collaborated in many aspects of nuclear science, safety, and policy – and with TRIUMF's re-licensing application process underway, I would like to provide my complete and enthusiastic support for renewal.

For some background on my perspective, both McMaster and TRIUMF have decades of operational experience of large-scale nuclear facilities. McMaster's nuclear reactor became operational in 1959 and was the first university-based multi-use research reactor in the British Commonwealth. That facility has grown to not only include the 5 MW open-pool light water reactor, but also adjoining Centres for Advanced Nuclear Systems, Neutron Activation Analysis, and Accelerator and Cyclotron Facilities. These facilities all house equipment that enable researchers to undertake neutron diffraction and scattering experiments, perform research and high-level radioisotope work and support current and future reactor technologies in our Hotcell Facility. Because of this, McMaster remains a leader in many aspects of neutron and accelerator science.

Less than a decade after McMaster, a vision for TRIUMF was born, and in 1968 the laboratory was officially founded around what remains as the world's largest cyclotron which became operational in 1974. TRIUMF too has built out an impressive infrastructure based around the 500 MeV cyclotron, which feeds accelerated proton beams into subatomic and nuclear physics experiments, materials science and isotope production efforts along its main beamline, but also rare isotope production for the Isotope Separator and Accelerator (ISAC1 and ISAC2) facilities. With incredible depth and expertise, TRIUMF has also added several sub-30 MeV cyclotrons that fuel an advanced radioisotope production program, and a superconducting elinac accelerators providing beam to the Advanced Rare IsotopE Laboratory (ARIEL). With people and equipment of the likes, TRIUMF is truly a global leader in the particle accelerator realm.

TRIUMF and McMaster have long collaborated on policies, procedures and best practices when it comes to operating and maintaining Class 1 nuclear facilities, and have enjoyed more than 10 years of formal cooperation on nuclear safety and security. Indeed, McMaster's Director of Nuclear Operations & Facilities, Chris Heysel, is as a member of TRIUMF's Board of Directors Safety and Security Committee, and I am pleased to serve on TRIUMF's Board of Governors. In all, our institutional interactions run deep as both remain valuable partners for one another, and major leaders in the Canada's nuclear research community.

Beyond governance and safety, our institutions also support several scientific interactions that include molecular and material sciences, as well as expanding efforts in large scale therapeutic isotope production. TRUIMF's recent efforts to produce and distribute the emerging isotope, actinium-225 is a case in point. McMaster researchers and facilities were an important part in the formation of Fusion Pharmaceuticals, an early stage targeted radiopharmaceutical development company. In the recent past, McMaster was also a key member of the consortium of institutions lead by TRIUMF to develop and commercialize large-scale cyclotron-based production of technetium-99m – a technology now translated into the commercial realm in the form of ARTMS, Inc.

Our continued collaborations reach well beyond our institutions, as all Canadians benefit from our technological developments and our ability to establish and advance best policies for the safe operation of our facilities.

TRIUMF is a major contributor and significant asset to Canada's research and innovation landscape and I fully support in its relicensing application.

Sincerely,

Karen Mossman
Vice-President, Research