Canadian Nuclear Safety Commission | Commission canadienne de sûreté nucléaire

CMD 22-H6.7

File / dossier : 6.01.07
Date: 2022-02-07
Edocs: 6733968

Written submission from the Canadian Nuclear Association

Mémoire de l'Association nucléaire canadienne

In the Matter of the

TRIUMF Accelerators Inc.

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

Commission Public Hearing

March 23, 2022

À l'égard de

TRIUMF Accelerators Inc.

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

Audience publique de la Commission

23 mars 2022

Canada

canadian nuclear association cna anc association nucléaire canadienne

February 7, 2022

The Canadian Nuclear Association (CNA) has over 120 members representing over 76,000 Canadians employed directly or indirectly in generating clean electricity, conducting research, producing nuclear medicine, exploring, and mining uranium and promoting Canada's worldwide leadership in science and technology innovation. Our members are committed to safety throughout the entire life cycle of their nuclear facilities and as such are supportive of TRIUMF Accelerators Inc.'s (TRIUMF) application to renew its 10- year Class IB operating license at its facility located on the campus of the University of British Columbia.

Every year in Canada, nuclear technology helps avoid 80 million tonnes of carbon dioxide emissions by displacing fossil fuels and in addition, nuclear technology supplies 70% of the global supply of cobalt-60, radioisotopes that are used to treat cancer and sterilize medical equipment, among other things. As a Tier One nuclear nation, Canada is involved in all aspects of nuclear technology and TRIUMF is an important part of that nuclear ecosystem. Under the current IB license, TRIUMF operates a suite of particle accelerators that enables world class nuclear physics, particle physics and astrophysics research, life sciences research, commercial production of medical isotopes and materials research.

In support of TRIUMF's licence application, the CNA would like to highlight several aspects of TRIUMF's operations:

- TRIUMF is Canada's particle accelerator centre, and unlike many licensees, is primarily a research facility. They are a major player in our nation's research and technology ecosystems, leveraging a national network of universities and talent to position Canada as a global leader in accelerator-based science.

- With over 50 years since its founding, TRIUMF is a national asset and international fixture in fundamental research, while also serving as a technological hub for critical contributions to industry, health care, and education across the country.

- Canada benefits tremendously from the intellectual capital and scientific innovation that TRIUMF enables; from playing a key role in developing next-generation medical isotopes for the treatment of metastatic cancers, to helping orchestrate the development of a novel ventilator for the Canadian government in response to the COVID-19 pandemic, TRIUMF directly improves the lives of Canadians.

- In the decades ahead, TRIUMF is positioned to advance its role as a multidisciplinary engine for both fundamental and use-inspired research across a diverse portfolio of programs that are poised to help Canada respond to pressing national needs and address major challenges, including the treatment of illnesses using next-generation medical isotopes and the development of novel technologies to combat climate change.

- TRIUMF has a long history of safe operations, and its number one priority is the health and safety of its employees, members of the public and the environment. TRIUMF's commitment to this has been clearly demonstrated through its strong performance across most Safety and Control Areas detailed in their license application. CNA would also highlight that TRIUMF has placed a major focus on upgrading management systems to achieve compliance with CSA N286-12.

- CNA would highlight that the total dose accrual for the entire facility has been trending downwards from 1991 to 2020. On average, each year, the public in Canada is exposed to 1.8mSv of natural background radiation however as outlined in the CMD , the average whole body dose accrual for Nuclear Energy Workers at TRIUMF has been trending downwards from 0.75 mSv in 2012 to 0.26 mSv in 2020. Additionally, the same can be said for non-NEW whole-body count with the average accrual in 2012 being 0.02 mSv to 0.004 in 2020. This is a strong representation of TRIUMF's commitment to continuous improvement of reducing radiation exposure

- Between 2012-2020 TRIUMF's administrative whole-body dose limit of 10 mSv has not been exceeded and are well below the regulatory limit of 50 mSv per year (100 mSv over 5 years). The annual average extremity dose has been trending downwards since 2012, with the maximum extremity nearly an order of magnitude below the regulatory limit of 500 mSv/year.

- TRIUMF has a strong history of applying as low as reasonably achievable (ALARA) principles across its facility and TRIUMF is committed to ALARA through its radiation protection program, detailed in section 3.1.7 of their CMD.

- The airborne releases of the TRIUMF facility from the years 2012-2020 inclusive, were well less than the regulatory limit of the Derived Release Limit (DRL)

- TRIUMF recognizes the criticality of Indigenous Engagement for its facilities and activities. TRIUMF is located on UBC's campus which sits on the unceded land of xʷməθkʷəyˈəm (Musqueam) First Nation. UBC provides regular updates to the Musqueam First Nation about activities and programs, including TRIUMF, related to land-use on campus. As part of the construction process of IAMI, TRIUMF hosted an open house and invited the Musqueam First Nation to learn about and provide input on the facility. TRIUMF, with UBC coordination, has disclosed to the Musqueam First Nation their plans for renewal of their current operating license.

- TRIUMF is committed to open communication and public disclosure. In 2018, TRIUMF initiated the development of the lab's Public Information and Disclosure Program (PIDP). This program presents a framework for policies and practices for how the lab discloses, disseminates, and shares information about lab activities with the public and other stakeholders. This effort increases the level of public understanding about TRIUMF and ensures key information related to the health, safety, and environment is effectively communicated to the public. TRIUMF's PIDP cane be found online at - https://www.triumf.ca/triumf-public-information-and-disclosure-program.

The CNA believes that as demonstrated through its proven track record of safe operations and its high environmental, health and safety standards, TRIUMF is a dependable and reliable operator, and the CNA is pleased to strongly recommend that the CNSC renew TRIUMF's 10 year operating licence for its Class IB facility.

Please feel free to contact me at couplands@cna.ca or 519-386-0704 © should you have questions or require additional information.

Sincerely,

Steve Coupland
Director of Regulatory and Environmental Affairs
Canadian Nuclear Association