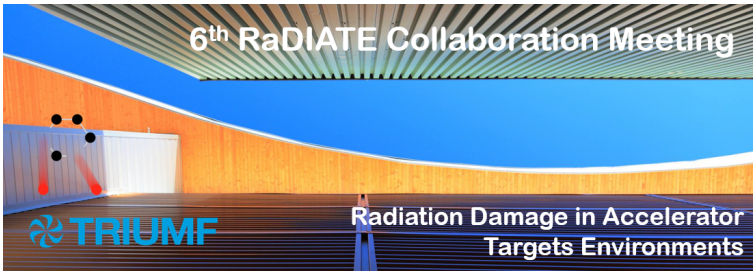

Contribution ID: **54** Type: **not specified**

Radiation resistance studies on vacuum seals

Tuesday, 10 December 2019 17:00 (2 hours)

In the pursuit of increased research capacity, TRIUMF is constructing the Advanced Rare Isotope Laboratory (ARIEL), intended to multiply TRIUMF's scientific output by a factor of 2-3. The ARIEL facility will provide two target stations, one driven by a proton beam and the other by an electron beam. The target stations use a modular design which requires actuated, radiation hard, high performance, reliable, and reusable vacuum seals, to interface the beam pipe between modules. TRIUMF has developed a novel solution to this unique challenge, which has been dubbed the Pillow Seal. The Pillow Seal's purpose is to remotely, and reliably, connect vacuum space between removable modules. In addition, the expected dose rates may be as high as 10 MGy/hr within the target stations of ARIEL facility, requiring sealing solutions that do not consist of elastomers or rubbers. Due to the modular design of the target stations, limited space is available for sealing solutions, producing a challenge for the required clamping forces needed for metal seals. An investigation into the radiation hardness of Spring Energized PEEK seals is being conducted to evaluate them as a potential sealing solution.

Presenter: Mr MCEWEN, Sam (TRIUMF)

Session Classification: Poster session