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Canadian Nuclear Society / Société Nucléaire Canadienne

*“Supporting nuclear science and technology for over 25 years”
“plus de 25 ans de promotion de la science et de la technologie nucléaires”*

“My Years as a Physicist at Chalk River Laboratories”

Dr. William (Bill) Diamond, recently retired from AECL, had a highly varied career. As an Accelerator Physicist he worked on technologies such as the plasma physics of ion sources, vacuum high-voltage insulation and the design of new electron accelerators. He was also involved in a number of other diverse projects including cyclotron ion source development; electron gun design and construction; development of miniature deuterium-tritium neutron generators and a 3.5 MeV electron linac for use in an oil well; the design, prototyping and commissioning of the injector of the superconducting electron accelerator at the Thomas Jefferson Laboratory; negative heavy-ion source development at Chalk River Laboratories; and R&D on the electrostatic deflector of the Chalk River Superconducting Cyclotron. He conceived the idea of using photo-fission to produce Radioactive Ion Beams for the TASCC facility and also proposed the use of photo-neutrons for ^{99}Mo production, an idea that is being re-visited today.

Bill obtained a B.Sc in Applied Physics (Waterloo, 1969) and Ph.D in Nuclear Physics (Toronto, 1974), and started his career as an accelerator physicist. After a short stint with AECL as an NSERC postdoctoral fellow, he became a researcher in private industry with Schlumberger-Doll (Massachusetts), then moved on to the Nevis Cyclotron Laboratories (New York) and a position as senior Accelerator Physicist at the high energy electron accelerator CEBAF (Virginia) before



returning to TASCC, Chalk River's own superconducting cyclotron, in 1989. During his career he made important contributions to ion source and electron gun development for accelerators, neutron sources for oil and gas exploration, and was the originator of the photo-fission method for producing radioactive ion beams at TASCC. From 1998 until his retirement in 2010, Bill was a Senior Researcher at the Fluid Sealing Technology Branch, involved predominantly in the creation of robots for CANDU irradiated fuel handling, in research for the Gen. IV reactor concept, and

on the potential use of photo-neutrons for ^{99}Mo production.



Bill Diamond
Retired Senior Researcher at AECL

Talk : 6:30 pm, Thursday July 29, 2010
Bennett / Mackenzie Room, J.L. Gray Centre

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