

**Mo-99 2015 TOPICAL MEETING ON
MOLYBDENUM-99 TECHNOLOGICAL DEVELOPMENT**

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**Considerations Regarding Full Cost Recovery in
Direct Production of ^{99m}Tc**

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ABSTRACT

Our consortium has demonstrated reliable commercial-scale (TBq) production of ^{99m}Tc via the (p,2n) reaction on ^{100}Mo -coated tantalum plates at energies up to 24 MeV. Our approach was recently approved by Health Canada to proceed into clinical trial. Efforts to establish a full cost recovery (FCR) process proceed in parallel.

Key considerations for FCR are the costs of the tantalum plates and the enriched molybdenum. In order to limit radioactive waste inventories, and in recognizing the need for specialized target manufacturing equipment, we seek to establish a centralized recycling program. Due to the presence of other minor molybdenum isotopes, and with the interaction of the proton beam with the tantalum plate, there exists Tc, Mo, Nb, W and other radionuclides in the processed target solutions and backing plates. The impact of these various radionuclides on the recycling process will be discussed in the context of overall project progress.