

**2018 Mo-99 TOPICAL MEETING ON
MOLYBDENUM-99 PRODUCTION TECHNOLOGY DEVELOPMENT**

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**In-Situ Production of Radionuclide Molybdenum-99 (Mo-99) without
Uranium**

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ABSTRACT

A method and apparatus for producing Mo-99 from Mo-100 for the use of the produced Mo-99 in a Tc-99m generator without the use of uranium is presented. Both the method and apparatus employ high-energy gamma rays for the transformation of Mo-100 to Mo-99. The high-energy gamma rays are produced by exposing a metal target to a moderated neutron output of between 6 MeV and 14 MeV. The resulting Mo-99 spontaneously decays into Tc-99m and can therefore be used in a Tc-99m generator. In parallel Mo-98 is bombarded with neutrons and thus irradiated into Mo-99, which can then follow the same decay process to Tc-99m. The poster will discuss these two in-situ production processes.