

**2017 Mo-99 TOPICAL MEETING ON
MOLYBDENUM-99 PRODUCTION TECHNOLOGY DEVELOPMENT**

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Development of Accelerator-Based Production of Mo-99

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ABSTRACT

Argonne National Laboratory (Argonne) is supporting NorthStar Medical Radioisotopes LLC and SHINE Medical Technologies in their efforts to become domestic producers of important medical isotope, ^{99}Mo . NorthStar Medical Radioisotopes, LLC is utilizing the photonuclear reaction on enriched ^{100}Mo target for the production of ^{99}Mo . In this approach, a high-power electron accelerator is used to produce the required flux of high-energy photons through the bremsstrahlung process. Argonne progress on development of beam line for production facility, beam diagnostic, target development and latest ^{99}Mo production irradiation will be reported. SHINE Medical Technologies is planning to produce ^{99}Mo using a D/T-accelerator driven fission of non-critical target solution of aqueous uranyl sulfate. Argonne is assisting SHINE in development and optimization of ^{99}Mo separation and purification technologies. Production experiments are conducted using a high power/medium energy electron LINAC at Argonne. In this presentation, we will review recent progress in developing Argonne Molybdenum Research Experiment (AMORE).

This abstract has not been through the Argonne clearance system. Once approved, a revised and cleared abstract will be submitted.