

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

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**Engineering and Design Activities at Los Alamos National
Laboratory Supporting Commercial U.S. Production of ^{99}Mo
without the Use of HEU**

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ABSTRACT

Los Alamos National Laboratory (LANL) is supporting the commercial U.S. production of ^{99}Mo as part of the National Nuclear Security Administration (NNSA) office of Materials Minimization and Management (M^3) program to accelerate the establishment of a reliable domestic supply of ^{99}Mo without the use of highly enriched uranium (HEU). In partnership with several other national laboratories, we are currently providing engineering design and support to NorthStar Medical Radioisotopes and SHINE Medical Technologies. The NorthStar technology uses an electron beam from an electron accelerator incident on enriched ^{100}Mo targets to produce ^{99}Mo through the (γ, n) photonuclear reaction. The SHINE technology uses a subcritical accelerator-driven uranium solution to produce fission product ^{99}Mo . LANL personnel are providing engineering and design support to both of these companies as part of the M^3 program. This presentation will give an overview of the two technologies, our support activities, and recent experimental results.