

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

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Next Generation Mo-99 Production: SHINE Update

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ABSTRACT

SHINE's advanced isotope production technology combines an accelerator-based neutron source with a high-efficiency liquid target. The target geometry is optimized for isotope production, resulting in high yield of medically-useful products including molybdenum-99 (Mo-99), iodine-131, and xenon-133. The SHINE system is more cost-effective and creates less waste than conventional methods, and produces Mo-99 compatible with the existing supply chain. With the help of Argonne National Laboratory, GE Healthcare has obtained pharmaceutical-grade Tc-99m from their Drytec generator, using Mo-99 produced by SHINE's innovative process. SHINE has supply agreements with GE Healthcare, Lantheus Medical Imaging, and HTA, making it the only US-based producer or new technology with executed customer supply agreements. The NRC issued SHINE a construction permit in February of 2016. Construction of the SHINE facility is expected to begin in 2018.