

**Mo-99 2015 TOPICAL MEETING ON
MOLYBDENUM-99 TECHNOLOGICAL 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 (^{99}Mo), iodine-131, and xenon-133. The SHINE system is more cost-effective and creates less waste than conventional methods, and produces ^{99}Mo compatible with the existing supply chain. Partnerships with National Laboratories have resulted in the production of commercial-purity product, and demonstrated greater-than-anticipated separation and purification yields. In 2014, SHINE signed supply agreements with GE Healthcare and Lantheus Medical Imaging, becoming the only US-based producer of new technology to have executed supply agreements with customers. In May 2015, the NRC issued a draft Environmental Impact Statement for the SHINE facility, concluding SHINE's impact to the environment will be minimal and recommending SHINE be issued a permit to construct. Issuance of the NRC construction permit is expected in Q1 2016.