

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

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**Selective Gas Extraction: A Transformational Production  
Technology being Implemented by GA, MURR and Nordion**

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**ABSTRACT**

This collaborative project by GA, MURR, and Nordion utilizes a transformational radioisotope production system to produce the medical isotope Molybdenum-99 (Mo-99) by utilizing existing nuclear infrastructure located in the United States and Canada. The project uses innovative, reusable LEU irradiation targets and integrated gaseous extraction system to generate and selectively remove Mo-99 suitable for use in all existing Tc-99m generators.

The SGE targets will be installed in the MURR reactor reflector region where they receive neutrons from the reactor to produce Mo-99. The targets are designed to allow selective reaction of Mo-99 with a suitable extraction gas during the irradiation process. Mo-99 is mobilized as a gas, which is transferred outside the reactor for collection at MURR and purification at Nordion's existing cGMP facility in Ottawa. This technology does not require the targets to be removed from the reactor and consumed in a conventional sense, and production therefore continues in place for extended periods while generating minimum amounts of radioactive waste. SGE technology maximizes isotope production while minimizing the amount of LEU needed.

The presentation will provide an overview of the GA, MURR, Nordion collaboration, project goals, schedule, and Mo-99 production capacity.