IAEA Support for Non-HEU Mo-99 & Tc-99m Production

T. Hanlon and J. Osso
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“Our motto is Atoms for Peace and Development. Transferring nuclear technology to developing countries, working to prevent the spread of nuclear weapons, and serving as a global platform for nuclear safety and nuclear security, are core Agency business and most important areas of our work.”

Yukiya Amano
Director General, IAEA
As an autonomous international organization within the United Nations system, IAEA is the global centre for cooperation in the nuclear field.
IAEA at A Glance

170 Member States
(as of June 2018)

2,500+ staff
from
over 100
countries

- HQ in Vienna
- Laboratories in Seibersdorf, Monaco and Vienna.
- Regional offices in Toronto and Tokyo.
- Liaison offices in New York and Geneva
Mechanisms for Assistance

- Coordinated Research Projects
- Training Events
- Technical Meetings
- Publications
- Conferences
- Technical Cooperation Projects
Department of Nuclear Sciences and Applications

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CRP: Sharing and Developing Protocols to Further Minimize Radioactive Gaseous Releases to the Environment in the Manufacture of Medical Radioisotopes, as GMP

- 2014 - ongoing
- Initiated as result of a request from a five Member States - May 2014
- First Research & Coordination Meeting - August 2015
- Second Research & Coordination Meeting – 06-10 March 2017
- Participants and observers from Australia, Belgium, Canada, France, Germany, Indonesia, The Netherlands, Poland, Rep. of Korea, USA.
CRP: New Ways of Producing Tc-99m and Tc-99m Generators

- First Meeting: 13-17 November 2017
- 14 approved proposals
- Recommendation from Technical Meeting on same topic (March 2016)
- Aimed as use of low specific activity Mo-99 for generator preparation and accelerator production of Tc-99m (Mo-100 ($\gamma$,n) reaction)
Interregional Training Courses & Workshops

- **Round Robin Workshop**
  - To explore the use of Tc-99m radioactivity concentration units and high capacity absorbers for Mo
  - Timing to be discussed

- **Kazakhstan (Institute of Nuclear Physics)**
  - Performed in tandem with the closing of the round robin activity
Technical Cooperation Projects

• **Regional Project for Latin America region RLA6/0/76**
  – *Mejora de las Capacidades de Producción de Mo-99 (n,gamma) y otros radisótopos médicos seleccionados en Reactores de Investigación e Instalaciones de Procesamiento de la Región*
  – Chile, Mexico and Peru
  – 2016-2019

• **National Project in Peru**
  – Planned for 2018-2019, to produce gel generators based on the technology of Kazakhstan
Department of Nuclear Energy

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Global Capabilities for the Manufacture of Mo-99 Targets

• 23 – 24 October 2018
• Expect 15 Member States + EU Commission
• Discuss current and upcoming techniques and capabilities for the manufacture of targets used in the production of Mo-99

LEU foil target (USA)
Irradiation baskets (Belgium)
Meeting in Cooperation with CNEA (Argentina)

• 26 – 28 November 2018
• Buenos Aires
• Management of wastes (legacy and new) from fission Mo-99 Production
Publications on Mo-99/Tc-99m

- Publication in progress
- Reference Plan for Self Sufficiency in the Supply of Selected Radioisotopes Produced in Research Reactors: Latin America Case Study
Thank you!