Mo-99 2016 TOPICAL MEETING ON MOLYBDENUM-99 TECHNOLOGICAL DEVELOPMENT

SEPTEMBER 11-14, 2016 THE RITZ-CARLTON ST. LOUIS, MISSOURI

Technical Aspects of Non-HEU Mo-99 & Tc-99m Production: An IAEA Update

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ABSTRACT

Technetium-99m (Tc-99m), the daughter of molybdenum-99 (Mo-99), is the most utilized radioisotope in diagnostic nuclear medicine. The IAEA facilitates numerous activities to support its Member States in various technical areas relating to Mo-99/Tc-99m, such as: (i) the Mo-99 high enriched uranium (HEU) minimization project, (ii) a Coordinated Research Project (CRP) on the direct production of Tc-99m, (iii) the Peaceful Uses Initiative project on supporting the global deployment of Mo-99 production capacity without using HEU, (iv) a CRP aiming at the creation of guidelines on how to reduce radioactive gaseous releases during the production of radioisotopes, (v) an upcoming CRP on "New Ways of Producing Tc-99m and Tc-99m Generators", (vi) a Round Robin exercise aimed at providing experimental results on production capabilities of (n, γ)Mo-99 and (vii) an upcoming Round Robin aimed at the use of high capacity Mo adsorbers and Tc-99m concentration devices. All activities will be discussed along with future planning.