

Radioisotopes Production in Argentina: Change of HEU to LEU and Improvements to Reduce the Emissions of Radioxenon

Argentina was the first country in the world to change the Molybdenum 99 production process from HEU (high enrichment Uranium) to LEU (low enrichment Uranium) bearing in mind commitment towards the Treaty on Non-Proliferation of Nuclear Weapons (NPT) and world initiatives for stricter control of nuclear material. In 1985 the Radioisotope Production Plant from Fission (PPRF) began to produce commercially Molybdenum-99 with HEU targets and in 2002 it was changed to LEU. The production process start with the dissolution of the uranium / aluminum alloy targets in an alkaline medium and continues with 4 purification steps. In this type of process three main ways of emission of radioxenon to the environment can be distinguished. These ways are air, hydrogen and production process, they are analyzed and quantified. The PPRF taking into account the recommendations of CTBTO and IAEA is developing and implementing actions to reduce emissions of radioxenon. For this purpose, the volume of the decaying tanks will be increased, the separation of the hydrogen from the noble gases will be carried out and improve have been made during the production process. The details of these changes will be presented in the Poster.

Primary author: CARRANZA, Eduardo Carlos (Comision Nacional de Energía Atómica)

Presenter: CARRANZA, Eduardo Carlos (Comision Nacional de Energía Atómica)

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