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to Reduce the Emission of Radioactive Noble Gases from Fission Radioisotopes Production Plants

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The Medical Isotope Production (MIP) by fission release radioactive noble gases into the environment.
These emissions increase the environmental background and could hinder the mission of the International Monitoring System (IMS) to detect early a nuclear explosion.
Argentina has been producing radioisotopes by fission since 1985 from the irradiation of Highly Enriched Uranium (HEU) targets. In 2002, taking into account the country's commitment with nuclear non-proliferation, the targets were changed to Low Enriched Uranium (LEU), becoming the first country in the world to achieve this goal.
Fission radioisotope production processes that dissolve targets in a basic medium generate two emission streams, air and hydrogen. Both must be treated separately.
There are a variety of devices to reduce radioactive noble gas emissions.
The poster describes the history of molybdenum production in Argentina and the conversion from HEU targets to LEU targets. The origin of the different emission streams of radioactive noble gases into the environment and their relative abundance are examined. Finally, different devices to reduce their emissions are presented, analyzing their advantages and disadvantages.

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Promotional text

The objective is to show different alternatives to reduce the emission of noble radioactive gases into the environment from a Medical Isotopes Production by Fission. Some devices are applicable to hydrogen and others to air. A comparative analysis between them is carried out.

Oral preference format

in-person

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