Update on Activities at CNEA in Pandemic

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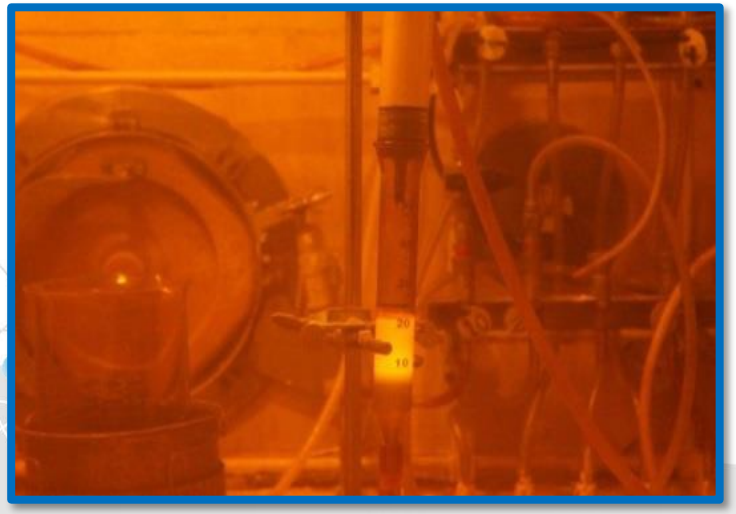
From March 2020 to the present the activities of the Fission Radioisotope Production Plant were carried out in two ways:

On-site: Exclusively dedicated to the production of Molidenum-99 and Iodine-131.

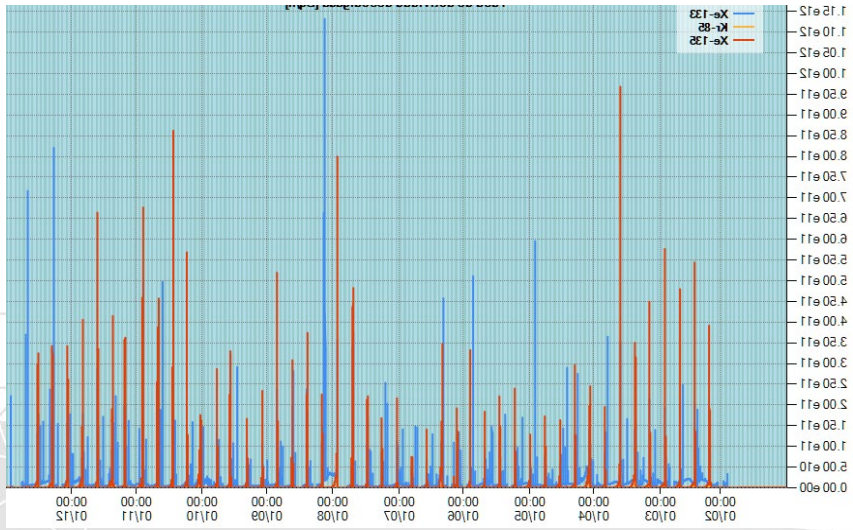
Virtual: - -Annual retraining for staff license renewal
-Protocols related to COVID
-Projects discussion



On-site: **Production of molybdenum and iodine**

Production process preparation
Production process
Waste management
Installation maintenance
Supply logistics

Weekly production guarantees the supply of these radionuclides to the Nuclear Medicine Centers in Argentina.

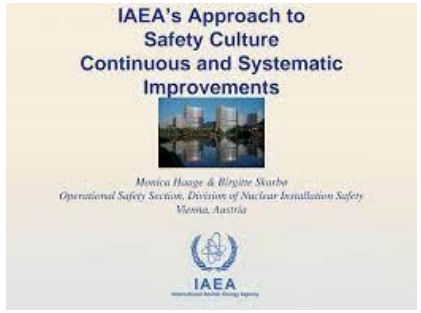


Production in 2020 compared to 2019: 60%

Noble gas emissions in 2020 compared to 2019: 85%

There was a relative growth of emissions with respect to production

Virtual: --**Annual retraining for staff license renewal**



Topics: - Radiation Protection.
- Safety Culture
-Changes and revision of Mandatory Documentation
- Plant and operation improvements with safety in mind.
- Accident drill

-- **Covid Protocols**

:-**Basic Training**

Face Mask
Distance
Time
Hand washing
Cleanliness of the place

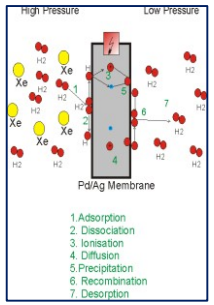
- **Specific instructions for the workplace**

Personnel transportation
Maximum number of people to eat per turn
Maximum number of people in each place
Changes in some activities

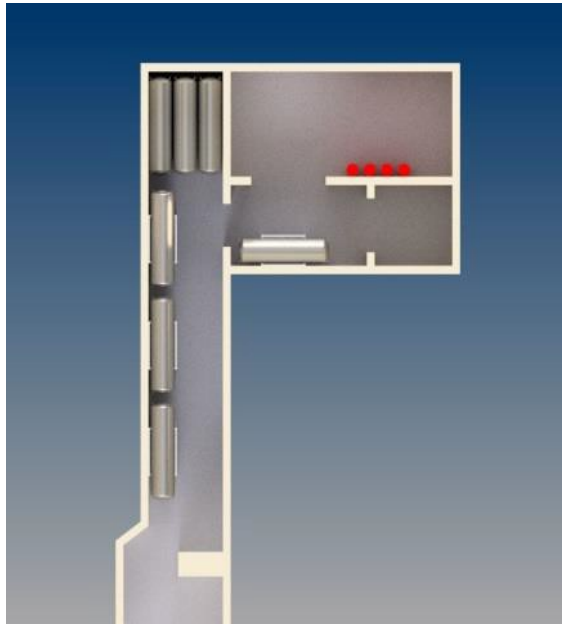
Virtual:- **Discussion on projects that are being developed in the Fission Radioisotopes Production Plant.**

Projects connected with the emission of noble gases:

1-Separation/capture of noble gases from Hydrogen



2-Replacement of gas containment tanks increasing the volume

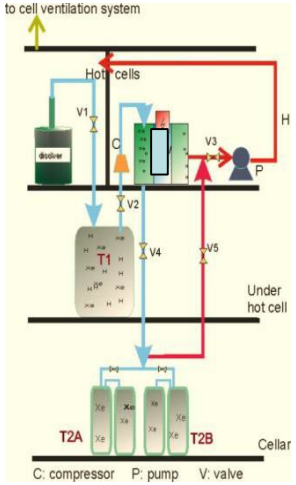


3-Installation of new (STAX) equipment to measure noble gases in the chimney

VIRTUAL
1-Separation/capture of noble gases from Hydrogen

A)Porous devices

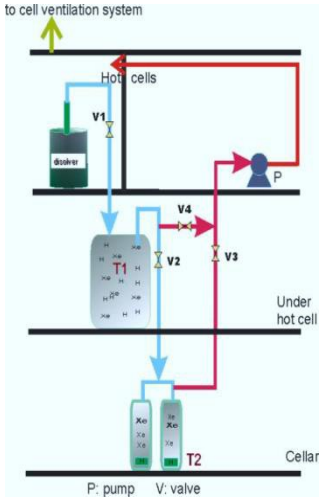
The method consists of separating the Hydrogen from other elements (e.g. Xe).
After passing through the Porous devices the hydrogen continues to the hot cell. The ventilation system release it to the atmosphere, after passage through charcoal and absolutes filters.
The other elements remain stored in a smaller volume and for longer,
allowing decreasing the emission of Xe-133 by decaying.



Porous device prototype working in control area

B) Hydrogen capturing devices

Has the ability to decrease the volume of Hydrogen.
The Hydrogen and the other elements are kept together in the container.
They are released after several weeks of decaying.



Hydrogen capturing devices

Both projects are developed by:
Materials Physicochemical Department
Bariloche Atomic Center
National Atomic Energy Commission

VIRTUAL
2) Replacement of gas containment tanks and increase the volume

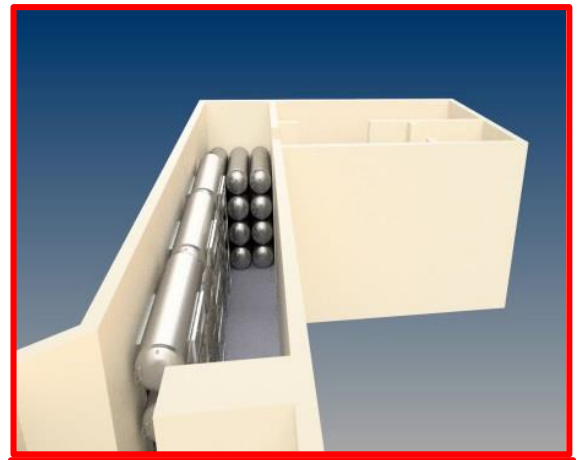
CURRENT TANK CONFIGURATION

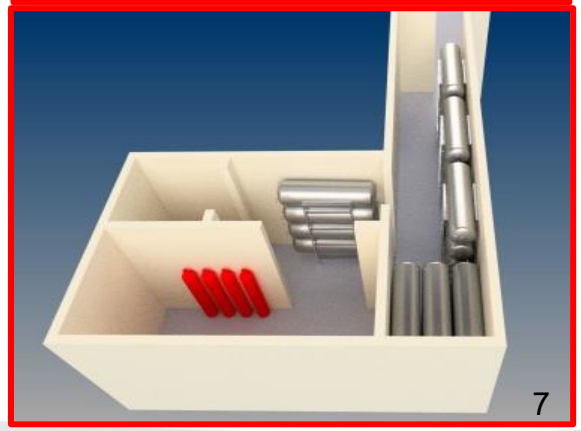
NEW STORAGE TANKS

STRUCTURE

MOCK-UP

FUTURE TANK CONFIGURATION
VOLUME INCREASES 60%





3- New equipment to measure noble gases in the chimney

INVAP is finishing the development of a new STAX monitor under a PNNL contract.

Staff from both institutions have held virtual meetings on the following topics during the past weeks:

- Location inside the plant	Analysis of alternatives
- Transport issues	Transport from Bariloche to Buenos Aires Lifting to the first floor of the plant Movements inside the plant
- Service issues	Electrical power supply Compressed air Internet
-Connections	Inlet and outlet of gases from the chimney

Once installed at our Plant in CAE, calibrations will be repeated with a "gas like" source during some time, and then the performance will be verified measuring the real plant emission levels.

Thanks you very much