

Radiation Protection training in a PET centre: Working the way towards Safety Culture P-S11-91

Mariella Terán², Andrea Paolino¹, Juan Pablo Gambini¹, Pablo Duarte¹, Eduardo Savio¹

¹Centro Uruguayo de Imagenología Molecular CUDIM

²Area Radioquímica-Facultad de Química-Universidad de la República

mterangretter@gmail.com

1 Background and Goal of the present work

The Uruguayan Centre for Molecular Imaging (CUDIM) is the only provider of PET diagnostic assistance and therapy with Lutetium-177 in Uruguay.



It is also a regional reference centre in research and development of new positron-emitting radiopharmaceuticals with potential use in oncological, neurodegenerative and infectious diseases through the training of undergraduate and postgraduate students in collaboration with leading institutions in the country.

All these activities are framed in the development of the safety culture in the institution, with particular emphasis on the training of all its workers in radiological protection (RP).

The aim of this work is to present the curricula and evolution of the education in RP through twelve years of operation of the centre.

2 General experimental

The training courses encompass different levels of responsibility including both the personnel who handle radioactive material and the administrative and managerial staff.

2.1. Basic induction course

Aimed at: all personnel who have just joined CUDIM to provide service and maintenance tasks, Duration: 3 hours
Includes concepts of radioactivity and operating procedures linked to their specific tasks, at the end of the course the learning objectives are:

Ten workers are averagely trained per year.

Objectives of the course

- To know the different types of radiation
- To know the fundamental activities carried out in CUDIM with ionizing radiation
- To differentiate between Principles and Criteria in radiation protection
- To identify the different areas of work with ionizing radiations

2.2. Basic course in Radiation Protection

- Syllabus
- Interaction of radiation with matter
 - Chemical and biological effects of radiation
 - Basic safety regulations
 - Fundamental, dosimetric and operational magnitudes.
 - Transport, reception and storage of radioactive material. Final waste disposal.
 - Radiological Protection Program. Written procedures and organization.

Theoretical/practical course aimed at cyclotron technical maintenance personnel.
Duration 18 hs
Mandatory final evaluation

Two workers are averagely trained per year.

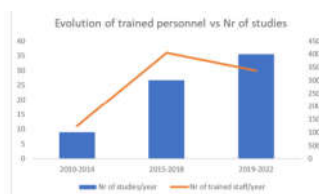
2.3. Refresher course in radiological protection

This theoretical/practical course has a duration of 4 hs and dictated for all occupationally exposed personnel of the centre every 2 years. This course has mandatory evaluation and 26 workers are averagely trained, syllabus varies depending on the needs detected in the period, for example:

- Review of the centre's RP manual
- Surface contamination measurement methods.
- Dosimetric and operational magnitudes
- Calculations for disposal of waste and national regulations, among others.

2.4. Training for management and administration personnel

Aimed at the centre's administrative and managerial personnel with a duration of 4.5 hours: The curriculum includes Introductory Concepts to the Safety Culture, Basic Principles of Radiological Safety, Quality Management, Current National Regulations,



The figure shows that the number of trained personnel grew proportionally to the number of studies performed along the 12 years of operation of the centre.

All courses are evaluated in agreement with the Radiochemistry Department of the Faculty of Chemistry (University of the Republic) and they are accepted by the National Radioprotection Regulatory Authority to obtain working licences with radioactive material.

3. Conclusions

Although this training program does not constitute, by itself, a guarantee of safe behaviour typical of a solid Safety Culture, it is a fundamental step for its construction and it is the only initiative currently developed in the country.

The work carried out until now is a fundamental pillar for the establishment of a safety culture in the institution and that it creates a valuable precedent in training in radiation protection at the region.