8th EUTERP Workshop

-Optimizing radiation protection training-

April 10 - 12, 2019 | Qawra, Malta

POSTER SESSION

C. Llorente, M. Marco - CIEMAT, Spain

Radiation Protection Expert Technician course
10 years of online experience, innovation and improvement

OBJECTIVES

- The Radiation Protection Expert Technician in Spain has been defined in the Nuclear Safety Council Instruction IS-03. The RPET works in a RP service under the responsibility of the RPE. The CIEMAT's Virtual Classroom developed a "blended learning" course to get this recognition in 2008 for radioactive facilities, and then extended the scope to other course for the nuclear facilities with the aim of:
  - Offering a specialized RP training course, accessible to the workers needing.
  - Overcoming barriers - place, pace, time.
  - Promoting tailor learning to individual needs: Instant feedback, track student performance.
  - Tendering expert knowledge with good knowledge management systems.
  - Issuing recognized proof of completion and certification.

MAIN ACHIEVEMENTS

- In Spain today there are 86 RP Services and 41 Technical RP Units. In ten years CIEMAT has trained 317 students for the radioactive facilities area and 96 for the nuclear area (+30 that are studying now.)
- The average success for the radioactive facilities course is 90.4% and 94.8% for the nuclear area course, with very little not-apt-students (1.5% in radioactive and 2% in nuclear) and little level of dropout rate (6% radioactive and 2% nuclear) compared with >>15% in High education e-learning scene.
- The average course overall rating is 4.4/5 for radioactive facilities and 4.6/5 for nuclear facilities course.

MAIN CONCLUSION

- The experience of 10 years has demonstrated a great interest, a high level of success and very little dropout rate, consequence of the continuous improvement and actualization of contents and multimedia materials, as well as a high coordination activity supporting the course.

A. Bajinskis - University of Latvia, Latvia

Strengthening knowledge and skills in radiotherapy quality and safety in Latvia

Objective

- To develop training infrastructure to provide practical training on radiation safety and quality for radiotherapy and improve the skills and knowledge of radiotherapy radiographers

Achievements

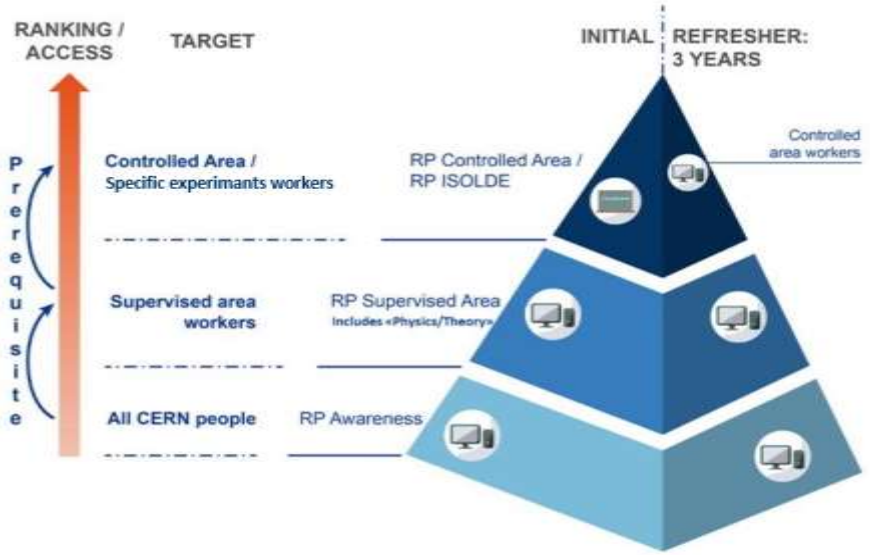
- Completed initial expert mission to evaluate current status and provide expertise on way forward for training aspects and required equipment specifications
- National train the trainers course for 15 participants (2018), including 2 RTTs
- Procured simulation software
- Procured patient setup laser system

M. Chniba, Y. Donjoux – CERN, Switzerland

Radiation Protection Awareness Challenges at CERN

- The aim of this poster is to introduce the history of the radiation protection training at CERN and the challenges we are facing during the Long Shut Down 2 of CERN's facilities

- Main challenges
  - Implementation of the modular approach
  - Continuous improvements



M. Suric Mihic, I. Prlic, Z. Veinovic, A. Mostecak – Croatia

RP education and training in Croatia: current situation and needs

- **Current situation in RP education in Croatia**
  - RPEs – formal national E&T system - non existing (a presumption in regulations but not established yet), individual responsibility of a RPE (available training courses organized by the IAEA, professional associations etc., on the job training, conferences,..)
  - RPOs and radiation workers – e-learning + on-line test, no interaction with a trainer

- **Needs**
  - A curriculum for E&T for RPEs should be established + Train the trainers course with help of foreign experts (based on the ENETRAP III recommendations) – **PARTNERS NEEDED!**
  - E&T course for RPOs and radiation workers – modular approach with on-line phase (theoretical knowledge) + on site phase – specific training suitable for a certain practice performed by the RPE

M. Gisnac, C. Chitu, A. Nedelcu, D. Dumitrescu – Cernavoda NPP, Romania

Radiation Protection Workers' Continuing Training Program at CNE Cernavoda NPP

- Successful training and qualification programs means well qualified, competent personnel to safely and reliably operate nuclear power stations. Line managers are actively involved in identifying training needs, developing and implementing initial and continuing training programs.

- Continuing training is used to refresh and improve the application of knowledge and job-related skills.
  Radiation protection training program is part of plant personnel training process.
  CNE Cernavoda personnel have RP qualification according to necessities: 3 RP qualification levels, with different skills and responsibilities.
  Each RP qualification level requires a refresh course at 5 years.
  Practical abilities of workers with higher RP qualification - tested twice between refreshing courses.
  RP continuing training - advertising materials (RP fundamentals flyers, RP Info Bulletins, RP Subject of the month, "Info Supervisor").
  Advertising materials are updated and disseminated into organization and they address the most actual RP issues identified by abnormal conditions reports, trend analysis of performance indicators.

S. Economides, Z. Thrapsanioti, K. Karfopoulos, E. Carinou – GAEC, Greece

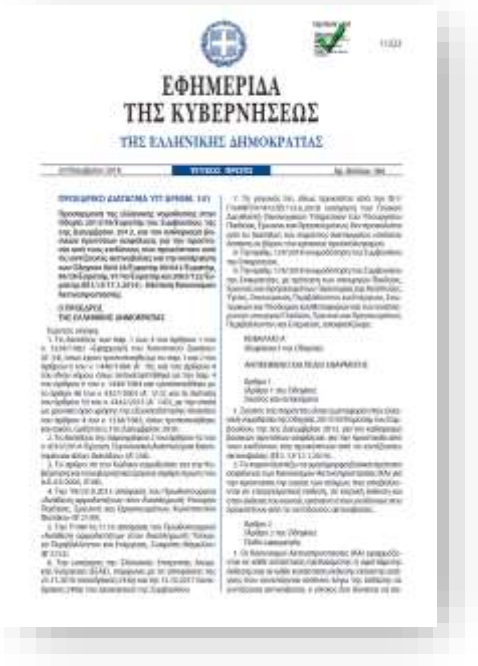
E&T requirements for the recognition of RPEs and MPEs: the Greek experience

About

The European Directive 2013/59 introduces the concepts of the Radiation Protection Expert (RPE) and the Medical Physics Expert (MPE) as well as their roles and responsibilities. Related provisions are transposed to the national legislations of the Member States together with requirements concerning the criteria and the mechanisms for their recognition.

Main results

- The European Directive 2013/59 was recently transposed to the Greek legislation with the Presidential Decree (No 101/2018) which establishes, among others, the roles of RPEs and MPEs and defines their responsibilities.
- A Common Ministerial Order sets the criteria for the recognition of the RPEs and MPEs including specific E&T requirements (postgraduate studies, non-formal education, etc.).
- The mechanism for the recognition of the RPEs and MPEs will be defined in a separate EEAE decision.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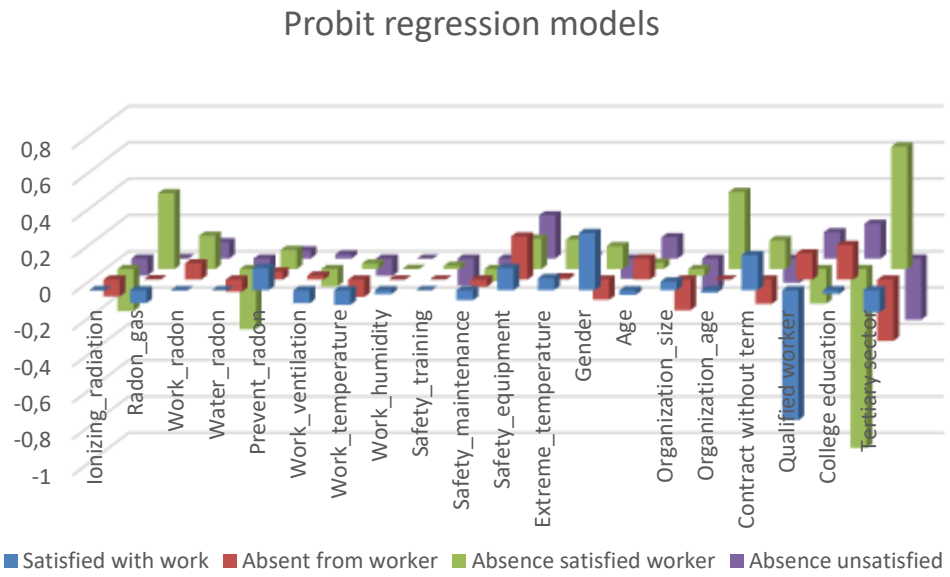
ΤΗΣ ΕΛΛΗΝΙΚΗΣ ΔΗΜΟΚΡΑΤΙΑΣ

S. Soares, D. Pereira, M. Marques - Portugal

Does workplace environmental conditions affects worker's absenteeism and job satisfaction? A European perspective.

- The main purpose of this study was to understand how the workplace environmental conditions, such as, physical and safety conditions, radiation exposure, prevention and training, may influence workers' absenteeism and satisfaction.
- Results



Graphic 1. Probit regression results to model 1(dependent variable of satisfied at work), model 2 (dependent variable of absent from work), and models 3 and 4 (dependent variable of absent from work to satisfied workers and unsatisfied workers, respectively)

T. Cechak, T. Trojek – Czech Technical University, Czech Republic

System for educating Radiation Protection in the Czech Republic

Radiation Protection as an interdisciplinary subject involving physics, engineering, interaction of ionizing radiation with matter, last but not least modelling of radiation transport by the Monte Carlo method and detectors of ionising radiation. In the Czech Republic nine faculties, associated with CENEN (Czech Nuclear Education Network) are involved in nuclear and radiation protection education.

A typical program of radiation protection teaching is :

Subject: Radiation Protection

Outline:

1) Biology in radiation protection
2) Biological effects of ionizing radiation
3) Units, quantities, basic terms in RP
4) Dosimetry of external irradiation I.
5) Dosimetry of external irradiation II.
6) Internal dosimetry I.
7) Internal dosimetry II.
8) Radon and dispersion models
9) Shielding of ionizing radiation
10) Radiation protection in medicine
11) Epidemiology for radiation protection
12) System of radiation protection I.
13) System of radiation protection II.

C. Zicari, G. Felicioni, C. Andenna – INAIL, Italy

Training on software for shielding and organ dose calculations in the X-ray diagnostic

- A homemade 2D software, based on the Java language, has been developed
- This software allows to load a planimetry (as a jpeg file) and to draw on it the relevant structural items (walls, windows, doors, apertures) of the radiological room and of the surrounding ones. The radioactive sources can also be located and their main physical parameters set. A real time computation is performed following the mouse position over the planimetry image.
- The software can be a useful tool for the radioprotectionists, qualified expert and healthy physics expert to obtain a good optimization radiation protection training
- The first tests on the computed results are presented

Q. Wu - Tsinghua University, China

The programs of training in radiation protection and the safe use of radiation sources in China

- There are eight national training centers in China. There are three levels of training courses for categories of persons engaged in different practices. Basic level is for workers or beginner. Secondary level is for qualified operators, radiation protection officers or regulators. Advanced level is for qualified experts or regulators.

- Based on the statistics in 2016, the average radiological accidents in China was about 6.2 accidents for 10,000 radiation sources per year from 1988 to 1998, and significantly decreased to about 0.72 accidents for 10,000 radiation sources per year from 2012 to 2016. It implied that the programs of training had a significant contributory in China.

E. Koutsouveli, M. Brambilla – EFOMP, UK

European Federation of Organisations for Medical Physics: the mission and the pillars to advance Medical Physics in Europe

Applying physics to healthcare for the benefit of patients, staff and public

www.efomp.org

- European Journal of Medical Physics (EJMP)
- European School for Medical Physics Experts (ESMPE)
- Biennial Congress (ECMP)
- Quarterly Newsletters
- Examination Board and Exams (EEB)
- 34 National Member Organizations (NMOs)

'Embracing change, sharing knowledge' ECMP2020 in Torino, Italy

EUTERP Foundation activities

- National Contact Points in all European states
- Reference syllabus for training of RPEs
- Development and testing of modular training courses
- Stakeholder participation in training developments
- Liaison with HERCA on the recognition of RPEs
- Partner in the ENETRAP III project
- Development of the EUTERP website
- Newsletters and information
- Social media strategic planning
- Organization of workshops on RP training
- Collaboration with international events
- Liaison with international organizations