

Education and training in radiation protection in Europe

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- Background of radiation protection E&T in Europe
 - *Legal framework*
- “Historical” overview
 - *Policy-related activities, education, training*
 - *Some networks and activities*
- Results achieved
 - *Effectiveness of past (an current) activities?*
- Future
 - *Some reflections*

- “Nuclear renaissance”, more technologies (and more frequently used) rely on radioactivity (in nuclear, non-nuclear and medical sector)
 - ▶ Increased attention for protection of men and environment, guarantee safe operation and working conditions
- Need for human resources with knowledge of radiation protection science, and necessary skills and attitudes on the workforce
- Development of good overall infrastructure for education and training in radiation protection

on

European

level



- Council Directive 96/29/EURATOM, laying down **Basic Safety Standards** for the protection of the health of workers and the general public against the dangers arising from ionizing radiation
- Communication 98/C 133/03, concerning its implementation
- Information, education and training
- Qualified Expert
- Currently: “revision” in process

- Person having the **knowledge and training** needed to carry out physical, technical and radiochemical tests enabling doses to be assessed,

and to **give advice** in order to ensure effective protection of individuals and the correct operation of protective equipment,

whose capacity to act as QE is **recognized by the competent authorities**.

A QE may be assigned the technical responsibility for the task of radiation protection of workers and members of the public.

- 1999 (Saclay), 2003 (Madrid), 2005 (Brussels, www.etrp.net), 2009 (Lisbon, via ENS), (2013, Vienna ?)
 - 1999/2003: Showing that the common readiness to exchange views on E&T in radiological protection was emerging
 - Cradle of collaborations and networks
 - 2005: conference declaration (4 elements of key importance: *clarification, harmonisation, broadening perspective, international cooperation*)
 - 2009: confirmation/evaluation/adjust & fine-tune

clarification, harmonisation, broadening perspective, international cooperation

on

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level



- Reducing differences; finding a common basis for E&T
- Mutual recognition of RP courses (and providers)
- Clear and uniform terminology on professions in RP
- Mutual recognition of acquired competences of RPE, RPO, workers

will facilitate

- the development of a common radiation protection and safety culture
- and the mobility of workers

- Establishment of Consortium of Universities → Launch of **European Master in RP**
www.master-emrp.eu
- ENETRAP questionnaire, resulted in an overview on:
 - A. numbers of RPE's and RPO's;
 - B. identification of practices;
 - C. national capabilities for E&T in RP;
 - D. regulatory requirements and
 - E. recognition
- Development **E-learning modules** via MOODLE
- Advise on implementation of **OJT/WE**
- Introduction of preliminary “ENETRAP training scheme”
 - Results questionnaire
 - EC and IAEA recommendations/syllabi
 - Experiences from past European courses
 - Feedback from EUTERP community



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- Platform of all stakeholders (E&T providers, authorities, end-users, ...)
- Supported by DG TREN, 3 years
- Main objectives
 - to facilitate the transnational access to vocational E&T infrastructures;
 - to harmonise the criteria and qualifications for and mutual recognition of qualified RP professions;
 - to remove obstacles for the mobility of these professions within the European Union;
 - to give advise for revision of BSS.
- Self-sustainable Foundation (legal entity) since June 2010

- Advisory role in revision of European BSS

- Proposed new definition for RPE, RPO:

RPE “an individual having the knowledge, training and experience needed to give radiation protection advice in order to ensure effective protection of individuals, whose capacity to act is recognised by the competent authorities”

RPO “an individual technically competent in radiation protection of matters relevant for a given type of practice who is designated by the undertaking to oversee the implementation of the radiation protection arrangements of the undertaking”



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to **develop** European **high-quality "reference standards" and good practices** for E&T in radiation protection, specifically with respect to the **RPE** and the **RPO**.

These "standards" will reflect the needs of the RPE and the RPO in **all sectors** where ionising radiation is applied (nuclear industry, medical sector, research, non-nuclear industry).

The **introduction of a radiation protection "training passport"** as a mean to facilitate efficient and transparent European mutual recognition is another ultimate deliverable of this project.

www.sckcen.be/enetrap2

- Develop the European **reference standards** for RPE and RPO training and based on that **develop training scheme** (ERPTS);
 - Specific attention to topics, including “non-technical/soft skills”, OJT/WE, ...
- Develop and apply a mechanism for the **evaluation** of training material, courses (and providers);
- Establish a recognised and sustainable "**quality label**" for training events;
- Create a **database of training events** and training **providers**;
- Bring together national initiatives to **attract early-stage** radiation protection researchers on a European level;
- Develop some **course material** examples (including e-learning);
- **Organise** pilot **sessions** of specific modules of the ERPTS and **monitor the effectiveness** according to a developed system;
- Development of a **European passport** for CPD in RP.

- The objective of this project is to design, develop and test two relevant training schemes on Nuclear Safety Culture, based on a specific evaluation of the training needs
- Target public: managers of nuclear installations (including medical)
- 18 partners

- Originates from collaboration in PAN, Erasmus Intensive Programme “Practical Approach to Nuclear techniques” (2002, 2003, 2004, 3-5 partners)
- 2005: °CHERNE
- Main goal: share competencies and facilities in organising teaching activities for students (mainly at Master level)
- These partners also organise:
 - SPERANSA, Erasmus Intensive Programme, Stimulation of Practical Expertise in Radiological And Nuclear Safety
 - ICARO, Intensive Course on Accelerator and Reactor Operation
 - ...



- 2002 ENEN 5FP European Nuclear Engineering Network
- 2003 Foundation of ENEN Association, legal entity, European Nuclear Education Network
- Mission is the preservation and further development of expertise in the nuclear fields by higher education and training
- 60 members, mainly universities
- Focus on high-level education
- Coordinator of several FP

- ...and many more collaborations and networks ...
- In summary: a lot of initiatives!!
- Results achieved?
- Tick off the box:
 - Overview of national practices in Member States, E&T capabilities and recognition system
 - European Master in Radiation Protection
 - More clear terminology RPE, RPO (tasks in new BSS + E&T guidance to be written by ENETRAP II)
 - Good connections between networks and (professional) organisations (IRPA, HERCA, EFOMP, ...)





- Give a reference scheme (for example RPE, RPO)
 - Each country can implement if wanted, can compare existing national scheme to European one
- Give information that can be used at national level: EUTERP website, EUTERP workshops, E&T database, ETRAP conference, ...
- **Some considerations?**
 - Initiatives to attract “the young generation”?
 - Organisation of several European courses
 - Better then before? More participants? How to improve?
 - Development of tools (e-learning, (cyber)-books, ...)
 - Optimal use? Is language an obstacle? Think about added value!



- Radiation protection is a science that is applied in all fields where ionising radiation is used, each with its specific characteristics
- Although working is specific fields: no “islands”, keep each other informed, work together
- Connect to professional organisations and stakeholders
 - ENETRAP II: Advisory Board: EUTERP, MELODI, IAEA, EFOMP, IRPA, HERCA
 - Connections with EURADOS and EAN, “foster” specific training modules
- Target public: includes all exposed workers

- Attract new generation
 - Initiatives for young students (high school)
 - Inform about all applications of ionising radiation
 - Provide attractive career opportunities in radiation protection

Education AND Training

Programmes

Target public

- Knowledge
- But also skills and attitudes
- Focus on outcomes, not on number of hours (ECVET)

- Scientific, technical
- But also non-technical (communication, ethical aspects, ...)
- + OJT, + WE

- For RPE, RPO, manager, student, ...
- But also other exposed workers

