Education and training in radiation protection in Europe

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An overview

- 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 workfloor

- Development of good overall infrastructure for education and training in radiation protection
Legal framework


- 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.
ETRAPAP conferences
Education and Training in Radiation Protection


- 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
Development of E&T activities
Policy
clarification, harmonisation, broadening perspective, international cooperation

- 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
ENETRAP 6FP (2005-2007)
European Network on Education and Training in RAdiation Protection

- 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

Coordinator
SCK•CEN

Partners
CEA-INSTN
FZK-FTU
BfS
CIEMAT
NRG
ENEA
HPA-RPD
UJF Grenoble
NHC Scotland
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”
General objective

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
Specific objectives

- 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
Cooperation for Higher Education on Radiological and Nuclear Engineering


- 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
  - ...

www.upv.es/cherne
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

www.enen-assoc.org
...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!
Future work
Points of attention

- 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.
Some reflections

- Attract new generation
  - initiatives for young students (high school)
  - inform about all applications of ionising radiation
  - provide attractive career opportunities in radiation protection
Future
Some reflections

- 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