

Education and training in radiation protection in Europe

Michèle Coeck SCK•CEN, Belgium

mcoeck@sckcen.be

NESTet 2011, May 15-18 2011, Prague, Czech Republic



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



Today's situation

 "Nuclear renaissance", more technologies (and more frequently used) rely on radioactivity (in nuclear, nonnuclear and medical sector)

Increased attention for protection of men and environment, guarantuee 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



- 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



Terminology Qualified Expert

 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.



ETRAP conferences Education and Training in Radiation Protection

- 1999 (Saclay), 2003 (Madrid),
 2005 (Brussels, www.etrap.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



Development of E&T activities Policy

clarification, harmonisation, broadening perspective, international cooperation



- Reducing differences; finding a common basis for E&T
- Mutual recoginition 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



Coordinator SCK•CEN

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



EUTERP

President & Treasurer

Folkert Draaisma

Secretary

Penelope Allisy-Roberts

Board Members

Marcel Schouwenburg

Richard Paynter

Michèle Coeck

- 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

°2006 EUTERP Platform EUropean Training and Education in Radiation Protection

www.euterp.eu

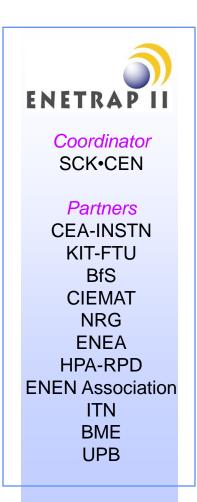


EUTERP + ENETRAP

- 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"



ENETRAP II 7FP (2009-2012) 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



ENETRAP II Specific objectives

Develop the European reference standards for RPE and RPO training and based on that develop training scheme (ERPTS);

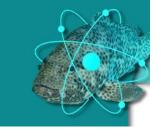
- Specific attention to topics, including "non-technical/soft skills", OJT/WE, …
- Develop and apply a mechanism for the evaluation of training material, courses (and providers);
- Establish a recognised and sustainable "quality label" for training events;
- Create a database of training events and training 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



- 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



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-

ACCOR ORA



Summary Results achieved

- …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



Future 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

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



