



Education and training in radiation protection: initiatives of the EUTERP Foundation

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- ❑ What is EUTERP and how is it connected to the ENETRAP 6FP and 7FP projects
- ❑ How is EUTERP involved in European policy
- ❑ What can be shared between / is of common interest to EUTERP and MELODI



EUTERP Platform

- ❑ 2006-2009: EC DG TREN supported a 3 year contract to create a **Platform** for E&T in radiation protection; main objectives were:
 - to facilitate the transnational access to vocational E&T infrastructures;
 - to harmonize 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 advice for the revision of BSS.

- ❑ Platform of stakeholders (E&T providers, end-users, authorities, TSO, ...)

- ❑ Coordinated by NRG, 5 board members, 6 observers (IAEA, EC, IRPA, EFOMP, IOE)

- ❑ Sustainability was a prerequisite, “bottom-up” approach



- ❑ Communication with Platform members via
 - Website
 - Newsletters
 - Annual workshops

- ❑ Input and feedback to ENETRAP 6FP (2005-2007) and ENETRAP II 7FP (2009-2012) projects

- ❑ **Main result** of EUTERP Platform: advice concerning new descriptions on RPE and RPO for revision of BSS (Council Directive 96/29/EURATOM)



→ EUTERP Foundation



- ❑ 2010: **EUTERP Foundation**: legal entity under Dutch law was established
- ❑ Main objectives:
 - Contribute to the development of a European policy with regard to education, training and competence development in RP
 - Encourage and support harmonization of E&T requirements for RPEs, RPOs and workers, facilitating mobility of these professionals
 - Act as central focus point for the sharing of information on training events, European standards, latest developments, and all other related information
- ❑ Newsletters, workshops, www.euterp.eu



ENETRAP projects

- EUTERP and ENETRAP are connected:
 - EUTERP = legal entity, sustainable, acts as umbrella organization which distributes ENETRAP results, discusses them, and gives feedback
 - ENETRAP = projects where work is being carried out, limited in duration
- ENETRAP results ↔ EUTERP initiatives/results



Main results – Education – ENETRAP 6FP

- ❑ Education: establishment of a consortium of European universities
→ launch of the **European Master in Radiation Protection**
(<http://www.master-emrp.eu>)
 - one-year specialized training in the second year of the masters degree Health Engineering and Medicine
 - 60 ECTS (455 hours + 6 months internship)
 - lead by INSTN (CEA), université Joseph Fourier (Grenoble)



Main results – Training – ENETRAP 6FP

- ❑ **ENETRAP questionnaire (2006)**, 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;
 - E. recognition.

- ❑ Introduction of **preliminary ENETRAP training scheme**, based on “common denominator” of European training for “RPE”

- ❑ Development and testing of first **e-learning modules** via MOODLE platform



- ❑ Build further on previous results:
 - Primarily dealing with RPE and RPO, but interested in medical field and the approaches used for MPE
 - Focus on professional development
 - Towards European reference training scheme for RPE, serve as basis for mutual recognition
 - Introduction of ECVET approach, learning outcomes in terms of knowledge, skills, competences
 - Towards sustainable results via EUTERP and HERCA



Main results – ENETRAP II 7FP

- ❑ **European Reference Training Scheme for RPEs**, with introduction of ECVET Learning Outcomes (K, S, C, in total 413)
 - Basic modules + Specialized modules depending on field of work
 - OJT + WE
 - Special attention to “non-technical” skills
 - LO’s developed in consultation with people “in the field”
 - To do: to be endorsed/used by authorities as “reference”

- ❑ **Text book and (limited) cyber book**

- ❑ **Preliminary management tool for LO’s developed** (originally not foreseen, needs to be further developed)

ENETRAP II RPE training scheme

Optional modules

8. NORM (30h)

NORM activities - Dose of workers - Dose of population - Protective measure - corrective actions

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ALARA

Additional module could be organized with European ALARA Network - EAN

DOSIMETRY

Additional module could be organized with European Radiation Dosimetry Group - EURADOS

Additional Module

Accidental situations – RP simulation codes and tools – Emergency Response - Communication – Train the trainers... or during refresher courses

Add-on modules

4. NPP Research (30h)

Reactor types – Fusion - Fuel Cycle - Dose Monitoring - Regulatory control - Safety Culture - Accidental situations - Criticality

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5. Waste, Dec. (30h)

Waste Management - Decommissioning - Ventilation, filtration - Transport

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6. Non nuclear (30h)

Irradiators/generators - Accelerators/Gauges - Industrial Radiography - Unsealed sources - Accidental situations

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7. Medical (30h)

Equipment - Occupational Radiation Protection - Classification of areas - Accidental situations

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Common Basis @

1. Basics (35h)

Radioactivity - Interactions - Quantities and Units - Basic biology & Bio. Effects - Physical principles of detection - Applications of Ionis. Radiation (overview)

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2. Foundation (50h)

RP and External Dosi. - Prot. against external - Prot. against internal - Dose monitoring - Regulatory Framework - Natural sources - Public / Environmental - Ethical considerations

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3. Occupational (30h)

Transport - Design issues - Accidents & Emergency issues - Safety Culture – ALARA - Decommissioning Principles – Waste Management principles

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(.h) indicative duration
 ▲ OJT
 @ b-learning possibility
 4 } ECVET unit
 ▲ }



Main results – ENETRAP II 7FP

- ❑ Pilot session given at KIT
 - Relatively low attendance
 - Feedback from those who did attend: good training!
 - “Stamp”, “European valorization”, ... was missing

- ❑ European registration system for Continuous Professional Development in radiation protection
 - Similar for all fission 7FP projects: ECVET approach will be used



Main results – ENETRAP II 7FP

□ Requirements for RPO

- Main areas of RPO work are considered and examples of appropriate training contents are given, divided into professional categories or competence groups, covering the following areas:
 - handling of radioactive materials and practices on installations producing ionizing radiation (incl. accelerators and cyclotrons)
 - medicine, dentistry
 - operation of x-ray equipment (technical, medical (without patients), veterinary medicine)
 - RPO in nuclear power plants/research reactors
- No recognition required



Further developments

- ❑ New and innovative topics for the specialized modules, further develop training material
- ❑ Most important:
 - Wait for official new BSS with definition of RPE/RPO/MPE
 - Still lack “official” European endorsement
- Via EUTERP / HERCA: ENETRAP II work is used in the HERCA task force on E&T
- Guidance to implement the BSS definitions in E&T
- Implementation / demonstrate practical feasibility of mutual recognition via HERCA/EUTERP
- Attention for RPE + RPO + workers!
- Attention for initial training + continuous training



Exchange MELODI – EUTERP

- ❑ Course modules are available
- ❑ Make use of our connection to the stakeholders
- ❑ EUTERP focuses on professional development rather than on education → share this experience
 - Recognition processes / policy matters / connection with HERCA
 - Introduction of ECVET



Next EUTERP Workshop

Progress will be reported at the next EUTERP Workshop

May 7-9 2014, Rovinj, Croatia

<http://ean-euterp.ekoteh.hr/>

