The ENETRAP II training schemes for radiation protection experts and officers in Europe

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Today's situation in radiation protection

- In all fields where radioactivity is used (nuclear, non-nuclear, medical sector, research) → pay attention to protection of men and environment, guarantuee safe working conditions
- Need for human resources with knowledge of radiation protection science, and necessary skills, and attitudes on the workfloor
- Retirements + not enough new people: gap, to be closed
- ENETRAP II supports young students and professionals in their need to gain and maintain high level radiation protection competences
  - Develop reference standards and programmes for E&T
  - Provide information to stakeholders

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Today's situation in radiation protection

on

European

level

- European legal framework
  - Council Directive 96/29/EURATOM (laying down BSS)
- All EU MS have implemented E&T programmes based on CD, but wide variety in national approaches
  - Terminologies & Duration, level & Recognition system, …
- Harmonized approach
  - Clear and uniform terminology on professions in RP
  - Reducing differences; finding a common basis for E&T
  - Mutual recoginition courses and of acquired competences of RP professions

will facilitate the development of a common RP culture and the mobility of workers

ENETRAP II 7FP

- European Network for Education and Training in Radiation Protection – part II
- ENETRAP II coordination action, submitted for 7FP, Theme: Fission-2008-5.1.1, Euratom Fission Training Schemes (EFTS) in all areas of Nuclear Fission and Radiation Protection
  (232620)
- EC contribution 800 000 EUR, equal contribution from partners
- Duration 3 years, March 2009 – March 2012

Coordinator
SCK•CEN

Partners
CEA-INSTN
KIT-FTU
BfS
CIEMAT
NRG
ENEA
HPA-RPD
ENEN Association
ITN
BME
UPB

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ENETRAP II
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).

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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), “comparison” with reference
- Establish a recognised and sustainable "quality label" for training events
- Create a database of training events and training providers
- 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
- Bring together national initiatives to attract early-stage radiation protection researchers on a European level

ENETRAP II Advisory Board

- The composition of the Advisory Board is such that all relevant stakeholders, with respect to the stated aim of the project, are represented, i.e. regulatory authorities, international organisations, professional organisations, training providers, research institutes, end users, …
- The Advisory Board will advise about the best balance between supply and needs of training, thereby ensuring stable feedback mechanisms to the Steering Committee
- Up to now positive reply from: EUTERP, MELODI, IAEA, EFOMP, IRPA, HERCA
  More are welcome (next Board Meeting end 2011)

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ENETRAP II
Outcome - aim

will be instrumental for the cooperation between regulators, training providers and customers in reaching harmonization of the requirements for, and the education and training of, RPEs and RPOs within Europe,

and will stimulate building competence and career development in radiation protection to meet the demands of the future.

First results

- *Develop the European reference standards for RPE and RPO training and based on that develop training scheme (ERPTS)*
  - Done for RPE; (RPO in progress)
  - Based on ENETRAP training scheme: modular, common basis and optional modules depending on type of application

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ENETRAP training scheme
!! starting point, "dynamic", not limiting !!

COMMON BASIS

Module 1 — BASICS

	L	E
Radioactivity	6	3
Interactions	4,5	1,5
Quantities and Units	4,5	
Basic biology & Bio. Effects	3	
Physical Principles of Detection	7,5	1,5
Applications of Ioni. Radiation (overview)	3	
Hours	28,5	6
OJT		

Module 2 — FOUNDATION

	L	E
RP and External Dosimetry	3	
Prot. against external Expos.	3	3
Prot. against internal Expos.	3	3
Dose monitoring (area + individ)	10,5	3
Regulatory Framework	6	3
Natural sources	6	
Public/Environmental	3	
Ethical consideralions	3	
	37,5	12
5 days OJT		

Module 3 — FOUNDATION + (occupational)

	L	E
Transport	3	
Design Issues	3	
Accidents & Emergency Issues	3	
Safety Culture	3	
ALARA	3	
Decommission. principles	3	
Waste Management principles	3	
Communication public, medias	6	
	27	0

OPTIONAL MODULES

Module 4 — NPP, Research Reactors

	L	E
Reactor types	5	
Fusion	1	
Fuel Cycle	3	
Dose Monitoring/Regulalory control	3	
Safety Culture	9	
Accidental situations, Criticality	9	
	30	0
10 days OJT + Visits		

Module 5 — WASTE MANAGEMENT DECOMMISSIONING

	L	E
Waste Management	8	
Decommissioning	4	2,5
Ventilation, filtration	5	6
Transport	3	1,5
	20	10
5 days OJT + Visits		

Module 6 — NON-NUCLEAR, RESEARCH, Oil & Gaz

	L	E
Irradiators/generalors/Accelerators/Gauges	6	3
Industrial Radiography	3	3
Unsealed sources	6	6
Accidental situations	3	
	18	12
5 days OJT + visits		

Module 7 — MEDICAL

	L	E
Equipment	6	
Occupational RP	16,5	4,5
Accidental situations	3	
	25,5	4,5
10 days OJT + Visits		

Module 8 — NORM

	L	E
NORM activities	6	
Dose of workers	6	
Dose of population	3	
Protective measures, corrective actions	6	
	21	
5 days OJT + visits		

Hours	34,5	49,5	27	30	30	30	30	21
Days	5,75	8,25	4,5	5	5	5	5	3,5
Weeks	1,2	1,65	0,9	1	1	1	1	0,7

Total hours	252
Total days	42
Total Weeks	8,4

Course schedule pilot sessions

- *Pilot sessions*

Common Basis

Module 1: Basis
KIT Karlsruhe, Germany
14-18/03/2011

Module 2: Foundation 1
KIT Karlsruhe, Germany
21-25/03/2011

Module 3: Foundation 2 (Occupational)
KIT Karlsruhe, Germany
28-30/03/2011

Optional Modules

Module 4: NPP and Research Reactors
KIT Karlsruhe, Germany
04-08/04/2011

Module 5: Waste Management
(June 2008)

Module 6: Unsealed Sources, Research and Non-Nuclear
KIT Karlsruhe, Germany
30/03-01/04/2011

Module 7: Medical Domain
ITN Lisbon, Portugal
not yet defined

Module 8: NORM
NRG Petten, Netherland – January 2012
HPA, UK - April 2011?

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Relation with ECVET

- For each course module, a “course description form” is/will be made, taking into account “learning outcomes”.

  - What are they?
    - Learning outcomes specify what learners’ new behaviours will be after a learning experience
    - They state the knowledge, skills, and attitudes that the learner will gain through training
    - Using an action verb (Bloom taxonomy) and describe something observable or measurable

  - Why are they important?
    - Clearly communicate expectations to learners
    - Clearly communicate graduates’ skills to prospective employers
    - Guide and organize the instructor and the learner
    - Tool for learning assessment

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First results (cont'd)

- *Develop some course material examples (including e-learning)*
  - During the courses videos will be made to be used for web-based learning
  - → "cyber-book", next to "traditional" handbook for 1 module (in English)

First results (cont'd)

- *Develop and apply a mechanism for the evaluation of training material, courses (and providers)*
  - Started, but we aim to re-evaluate first results, incorporating ECVET approach
- *Establish a recognised and sustainable "quality label" for training events*
  - Development of methodology, implement & sustained via EUTERP
- *Create a database of training events and training providers*
  - In good progress, will be published on website ENETRAP and EUTERP

First results (cont'd)

- *Bring together national initiatives to attract early-stage radiation protection researchers on a European level*
  - Finalized, information for early-stage will be made available via website www.sckcen.be/enetrap2
- *Development of a European passport for CPD in RP*
  - Not started yet
  - Connection to other E&T areas
  - Connection with ECVET?

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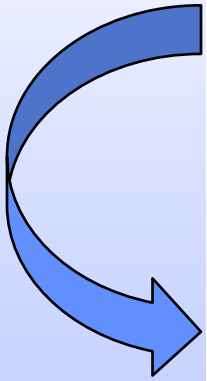
Conclusion

- ENETRAP II project:
  - Progress according to plan
  - Useful results
  - Keep strong connection to EUTERP



- Disseminate results to RP community
  website, conferences, …

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Thank you for your attention

ENETRAP II