



Development of specialised training modules for the RPEs

Sascha Trumm, <u>Csilla Pesznyák</u>, Behrooz Bazargan-Sabet, Stephen Evans, Izabela Kulpa, Paul Livolsi















The major tasks of ENETRAP III WP3 are:

- Organisation of pilot sessions for three Specialised Modules for RPEs
 - Determination of the learning outcomes
 - Development of programmes
 - Development of training material
 - Endorsement by authorities
- Monitoring and evaluation of effectiveness and methodologies
- Description of the endorsement process

WP3

- Sascha Trumm (*KIT* Karlsruhe Institute of Technology)
- Behrooz Bazargan-Sabet (UL Université de Lorraine)
- Stephen Evans (*EFOMP European Federation of Organisations in Medical Physics*)
- Izabela Kulpa (PGE Polska Grupa Energetyczna S.A.)
- Paul Livolsi (CEA Commissariat à l'Energie Atomique)
- Csilla Pesznyák (BME Budapest University of Technology and Economics)





Overview – Modular approach







Training courses under ENETRAP III







Pre-requisites

The applicant will be expected to have achieved:

- An education to level 6 of the European Qualification Framework (EQF) (Bachelor degree level either specifically in radiation protection, or in a physical /engineering /mathematical discipline or equivalent through life long learning)
- A minimum of 3 years' experience working in radiation protection environment.

The applicant will be expected to have completed the following 3 generic ENETRAP III basic training modules as pre-requisites for the Specialised Training Modules:

- 1. Basics Radiation Protection
- 2. Foundation Radiation Protection
- 3. Occupational Radiation Protection





Basic training module 1: Basics1.1 Radioactivity and Nuclear Physics1.2 Interaction of radiations with matter1.3 Dosimetry: quantities and units1.4 Biological effects of radiations1.5 Physical principles of detection

Basic training module 3: Occupational

- 3.1 Transport
- 3.2 Design issues
- 3.3 Accidents and emergency issues
- 3.4 Safety culture
- 3.5 Waste management
- 3.6 ALARA culture

Basic Training Modules

Basic training module 2: Foundation
2.1 Application of ionising radiation
2.2 Radiation protection
2.3 Radiation protection internal dosimetry
2.4 Protection against external exposure
2.5 Dose monitoring
2.6 Regulatory context
2.7 Natural sources of ionising radiation
2.8 Public and environmental radiation protection
2.9 Ethical considerations





The Organisation of training events under ENETRAP III benefits from the experiences and methodologies developed in the previous ENETRAP projects:

 Each module consists of a number of training courses. These are linked to specific competences and activities that a RPE requires in compliance with Council Directive 2013/59/Euratom (BSS)





Training Courses under ENETRAP III – Course Scheme

		Р	L
22	Describe the principles of NPP operation	35	5
23	Apply RP in routine operation	30	15
24	Apply RP during shutdown	20	5
25	Manage interaction with the hierarchy, regulatory bodies and the public	15	5
		Р	L
26	Apply the principles of operational RP in medicine	40	6
27	Know the organisation of the hospital (local) and	40	6
20	relationship with the head of the establishment	10	C
28	Manage the interaction with stakeholders	40	6
29	Quality Control/Quality Assurance and dosimetric assessment for radiation protection	40	6
		D	
		Р	L
34	Apply the principles of radiation protection to the storage of nuclear wastes in geological disposals	50	17
35	Describe the organisational structure of a disposal	15	4
36	Manage quality control and dosimetry	20	5
37	Manage interaction with the hierarchy, regulatory bodies and the public	10	4
	22 23 24 25 25 26 27 28 29 28 29 34 34 35 36 37	 22 Describe the principles of NPP operation 23 Apply RP in routine operation 24 Apply RP during shutdown 25 Manage interaction with the hierarchy, regulatory bodies and the public 26 Apply the principles of operational RP in medicine 27 Know the organisation of the hospital (local) and relationship with the head of the establishment 28 Manage the interaction with stakeholders 29 Quality Control/Quality Assurance and dosimetric assessment for radiation protection 34 Apply the principles of radiation protection to the storage of nuclear wastes in geological disposals 35 Describe the organisational structure of a disposal 36 Manage interaction with the hierarchy, regulatory bodies and the public 	P22Describe the principles of NPP operation3523Apply RP in routine operation3024Apply RP during shutdown2025Manage interaction with the hierarchy, regulatory bodies and the public15P26Apply the principles of operational RP in medicine4027Know the organisation of the hospital (local) and relationship with the head of the establishment4028Manage the interaction with stakeholders4029Quality Control/Quality Assurance and dosimetric assessment for radiation protection4034Apply the principles of radiation protection to the storage of nuclear wastes in geological disposals5035Describe the organisational structure of a disposal1536Manage interaction with the hierarchy, regulatory bodies and the public10





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- Each module consists of a number of training courses. These are linked to specific competences and activities that a RPE requires in compliance with Council Directive 2013/59/Euratom (BSS)
- For every competence, specific learning outcomes are defined in terms of knowledge, skills and attitudes following the Bloom taxonomy and the ECVET approach.





Excerpt from the learning outcomes of Module 7

26.5	Analyse the situation of occupational exposure of staff involved in the case of new techniques (e.g. nurses involved with dialysis of patients administered with radionuclides in a new situation)	
Knowledge		
LO K 26.5.1	Know the decontamination techniques for unforeseen situations (e.g. incontinent patient, vomiting)	
	Skills	
LO S 26.5.1	Decontaminate or to commission a decontamination of a surface (e.g. urine)	
	Attitude	
LO A 26.5.1	Adopt a reactive attitude towards such events	





The Organisation of training events under ENETRAP III benefits from the experiences and methodologies developed in the previous ENETRAP projects:

- Each module consists of a number of training courses. These are linked to specific competences and activities that a RPE requires in compliance with Council Directive 2013/59/Euratom (BSS)
- For every competence, specific learning outcomes are defined in terms of knowledge, skills and attitudes following the Bloom taxonomy and the ECVET approach.
- Skills and attitudes are assessed by practical case-studies and daily wrap-ups. Knowledge will be assessed by a one hour written examination on the last day of the face to face module (pass-mark 70 %).
- The Specialised Modules are designed to build upon the KSAs gained in the generic Basic Modules.





- Pilot session of the Specialised Modules will be organised in 2016
 - Module 4: 27.6.–1.7.2016 in Karlsruhe, Germany Organised by KIT and PGE
 - Module 7: 4.7.–8.7.2016 in Budapest, Hungary Organised by BME and EFOMP
 - Module 9: 18.7.–22.7.2016 in Karlsruhe, Germany Organised by KIT and UL
- The course fees (250 € early bird, 500 € regular for the pilot sessions) are consistent for all Specialised Modules under ENETRAP III





 In order to advertise the training events effectively, separate leaflets for each module were designed.







European Network on Education and Training in Radiological Protection





A course designed for Radiation Protection Experts (RPEs) working in the medical field, in compliance with Council Directive 2013/59/Euratom (BSS), is being run as part of the European Network on Education and Training in Radiation Protection (ENETRAP III).

4-8 July 2016



Budapest University of Technology and Economics, Hungary





Course objectives

Successful course participants will be able to evidence that they have the necessary knowledge, skills and attitudes (KSAs) to provide expert radiation protection advice to employers, staff and members of the public in the medical fields of radiotherapy, diagnostic & interventional radiology and nuclear medicine.

The Medical Module will consist of an on-line phase and will be followed by a one week face-toface session. This session will consist of a number of lectures and workshops designed to ensure the KSA requirements are satisfied.

Before the face-to-face session, registered course participants will need to provide portfolios covering:

- the regulatory framework measurement of radiation dose
- dose rates and contamination measurements
- calculation of potential exposures
- hazard and risk assessments
- control procedures (including the zoning of radiation areas)
- personal and environmental dosimetry

Participants will be provided with detailed KSAs to fulfil their portfolio during the on-line phase. These portfolios will be discussed in the face-to-face session to provide opportunities for improvements and reflective thinking. The successful candidates will have fulfilled the required contents for the portfolios and passed both an oral assessment on their portfolio and a multiple choice examination at the end of the face-to-face session.

Faculty - Organisers and lecturers

- Stephen Evans, EFOMP Chair Projects Committee
- Stelios Christofides, EFOMP Chair Professional Matters Committee
- Virginia Tsapaki, EFOMP Vice Chair Projects Committee
- Milde Bosmans, EFOMP Past Chair Projects Committee



http://enetrap3.sckcen.be



European Network on Education and Training in Radiological Protection



On-line phase

- Available as from September 2015
- Portfolio to be completed before the face-to-face session

Face-to-face session: 4-8 July, 2016

Nuclear Techniques Department Budapest University of Technology and Economics Műegyetem rkp. 9. Budapest, Hungary

Pre-requisites and target audience

The course is suitable for Medical Physicists, medical device companies and radiation protection authorities. Education to Level 7 e.g. Masters degree in Medical Physics, or equivalent through Life Long Learning is a pre-requisite.

Course fees and expenses

- A reduced 'early bird' registration fee of 250 EUR has been set for this pilot session. The regular fee is 500 EUR for later registrations.
- Free registration may be offered to some applicants depending upon their circumstances. The offer will be limited and the decision will be at the discretion of EFOMP and will be final.
- Costs of accommodation, travel and meals are at the expense of all participants.
- Accommodation in Budapest:
 - Gellért Hotel: 65 EUR/night/person in single room, or 95 EUR/night/2 persons
 - Hostel Martos Flora: 15 EUR/night /person in double room with roommate, or 20 EUR/night/person in single room.

Accreditation has been requested for EFOMP CPD.

Early bird registration: 31 August 2015

The deadline for applications: 1 February 2016

Application to be emailed to :					
Dr. Csilla Pesznyák (BME, Institute of Nuclear Techniques) - <u>pesznyak@reak.bme.hu</u>					
Registration details					
Name (in CAPITALS):					
Institution:					
Address:					
Country					
country.					
Email: Telephone:					
Education (e.g. MSc in Medical Physics):					
Educational institution:					
Accommodation required (please tick):					
O Gellért Hotel					
Hostel Martos Flora					
Other at own determination					
You will be invoiced separately.					
If free registration is requested please state reasons on separate sheet (max 1 A4).					

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Project coordination: Michèle Coeck, SCK•CEN Belgium (<u>mcoeck@sckcen.be</u>) Project consortium: SCK•CEN (Belgium), PHE (United Kingdom), BfS (Germany), CEA-INSTN (France), KIT (Germany), CIEMAT (Spain), NRG (The Netherlands), EFOMP (United Kingdom), EUTERP (The Netherlands), IST-ID (Portugal), BME (Hungary), PGE SA (Poland), UL (Université de Lorraine)

EUTERP Workshop, Athens 2015





- In order to advertise the training events effectively, separate leaflets for each module were designed.
- The leaflets are presented on relevant portals (e.g. ENETRAP, EUTERP...) and are spread in both electronic and printout versions.

http://enetrap3.sckcen.be/en/ENETRAP%20Courses

• For direct booking of modules 4 and 9 an ENETRAP subpage was designed within KIT's booking portal.

http://www.fortbildung.kit.edu/353.php



European Network on Education and Training in Radiological Protection



Home Partners Workpackages ENETRAP Courses Links

ENETRAPIII > ENETRAP Courses

ENETRAP Courses

ENETRAP Module 1 ENETRAP Module 2 ENETRAP Module 3 ENETRAP Module 4 ENETRAP Module 7 ENETRAP Module 9

Latest News

2016-07-18 ENETRAP Specialised training course for RPE in geological disposal

2016-06-27 ENETRAP Specialised training course for RPE in NPP & Research

2015-09-01 ENETRAP Specialised training course for RPE in medical

More News...

Upcoming Events

30-09-15 <u>6th EUTERP</u> Workshop | Legislative change in Europe

09-05-16 IRPA 14 Cape Town, South Africa

27-06-16 ENETRAP Module 4 for RPE's working in Nuclear

ENETRAP Courses for the Radiation Protection Expert

In the framework of the European Network on Education and Training in Radiation Protection (ENETRAP III), several courses were developed for the Radiation Protection Expert (RPE) following the <u>European Reference Training Scheme</u>. These will be organised by the ENETRAP III partners at different locations in Europe.

Each module consists of a number of training courses. These are linked to specific competences and activities that a Radiation Protection Expert (RPE) requires in compliance with Council Directive 2013/59/Euratom (BSS).

Basic module 1: Basics of radiation protection (background document)

- 1.1 Radioactivity and Nuclear Physics
- 1.2 Interaction of radiations with matter
- 1.3 Dosimetry: quantities and units
- 1.4 Biological effects of radiations
- 1.5 Physical principles of detection

Basic module 2: Foundation of radiation protection (background document)

- 2.1 Application of ionising radiation
- 2.2 Radiation protection
- 2.3 Radiation protection internal dosimetry
- 2.4 Protection against external exposure
- 2.5 Dose monitoring
- 2.6 Regulatory context
- 2.7 Natural sources of ionising radiation
- 2.8 Public and environmental radiation protection
- 2.9 Ethical considerations

Basic module 3: Occupational radiation protection (background document)

- 3.1 Transport
- 3.2 Design issues
- 3.3 Accidents and emergency issues
- 3.4 Safety culture
- 3.5 Waste management





Conclusion

- Pilot sessions of 3 Specialised Modules (for RPEs in NPPs, in the medical field, and in geological disposals) within the ERPTS are delivered in 2016. Early bird fees are available.
- Duration of the training courses is 1 week each. They are designed in compliance with Council Directive 2013/59/Euratom (BSS).
- Endorsement is sought from the relevant authorities.
- If there is sufficient demand, a second run of the basic modules piloted in ENETRAP II might be offered in 2016 or early 2017.





Thank you for your attention