HERCA

Heads of the European Radiological protection Competent Authorities

Education and Training in Radiation Protection

HERCA Task Force on Education and Training in Radiation Protection

Conclusions & Recommendations

Approved on the occasion of the 12th HERCA Board of Heads meeting
27 November 2013, Berlin, Germany.

TASK FORCE Education & Training in Radiation Protection.-

Chairman.- Mr. Ton Vermeulen, MINEZ, NL, Chairman of the Task Force E&T in RP.

Members of the TF E&T RP:

Marie-Line PERRIN	ASN,	France
Annemarie SCHMITT-HANNIG,	BfS,	Germany
Konstatntinos KARFOPOULUS	GAEC,	Greece
Katalin LUMNICZKY	NRIRR,	Hungary
Mª Dolores RUEDA	CSN,	Spain
Carel THIJSSEN	MINEZ,	The Netherlands
Richard PAYNTER	PHE,	United Kingdom & chairman EUTERP foundation
Olvido GUZMÁN	ASN,	France, HERCA Secretariat

ASN – Autorité de Sûreté Nucléaire, **BfS -** Bundesamt für Strahlenschutz (Federal Office for Radiation Protection), **CSN** - Consejo de Seguridad Nuclear; **GAEC** - Ελληνική Επιτροπή Ατομικής Ενέργειας (Greak Atomic Energy Commission), **Minez** - Ministerie van Economische Zaken (Ministry of Economic Affaires), **NRIRR -** Országos "Frédéric Joliot-Curie" Sugárbiológiai és Sugáregészségügyi Kutató Intézet (Frédéric Joliot-Curie" National Research Institute for Radiobiology and Radiohygiene), **PHE** - Public Health England;

Table of contents

1. Introduction to the Task Force Education & Training in Radiation Protection (TF E&T RP)

Radiation protection training and education (E&T) has been of outmost interest for HERCA from the beginning of the Association in 2007. Nevertheless, at that time, the topic was recognised as already covered by the European Commission sponsored programmes underway and at that time it was agreed not to duplicate this effort. The Interest of HERCA in E&T activities have been confirmed in subsequent meetings, in particular in the activities of ENETRAP following previous contacts from this consortium.

The Board of Heads of HERCA approved on its 10th Meeting held in Paris on 30-31/10/2012 to set up a Task Force (TF) on Education &Training in Radiation Protection (TF E&T-RP) an a mandate was given to this TF. The ultimate mandate of the TF, which has been leaded by Mr. Ton Vermeulen (The Netherlands) would be to present to the Board of Heads a general picture of the situation on E&T in RP and to identify the current needs for harmonisation among HERCA member countries and eventually, if needed, the mandate of a future working group on E&T.

The TF E&T has met twice in 2013. In carrying out its activities, special attention has been paid to not duplicate the work already done by others; rather the TF E&T RP has taken advantage of it. In this sense, the TF has looked in detail at the activities and outcomes of the work already carried out by ENETRAP & EUTERP and has build on it. The TF has prioritized the work on radiation protection expert[1] (RPE) and radiation protection officer[2] (RPO) focusing on the implementation of requirements in the draft Euratom Basic Safety Standards (BSS) (now approved). The findings, conclusions and recommendations by the TF E&T have been presented and approved by the Board of HERCA on the occasion of the 12th HERCA meeting.

This report presents the findings, conclusions and recommendations by the TF E&T as approved by the Board of HERCA with regard to:

(i) the implementation of the requirements in the BSS and the mutual recognition of RPE,

(ii) the implementation of the requirements in the BSS on RPO and the general picture of the current status of the existing equivalents of RPO, and
(iii) the evaluation of the education and training of workers, in relation with the implementation of the requirements in the draft Euratom Basic Safety Standards (BSS).

2. Summary findings TF E&T RP

European BSS [1] do not establish any requirement in terms of education, training and experience of RPE and RPO, only the definition is set up, and since ENETRAP has been working on defining competencies of RPE and RPO, the TF consider that it may provide a good model for this purpose.

2.1. Findings on RPE

F - RPE.1. The BSS describes in the definition for the RPE to have in general the appropriate knowledge, training and experience in order to give competent advice in radiation protection. (Article 4 (79)).

F - RPE.2. BSS describes indications (formulated as tasks) on the matters an RPE should give advice on (Article 84).

[1] "Radiation protection expert" means an individual or, if provided for in the national legislation, a group of individuals having the knowledge, training and experience needed to give radiation protection advice in order to ensure the effective protection of individuals, and whose competence in this respect is recognised by the competent authority, (*Definition (73) BSS, Council Directive 2013/59/Euratom*)

[2] "Radiation protection officer" means an individual who is technically competent in radiation protection matters relevant for a given type of practice to supervise or perform the implementation of the radiation protection arrangements, (*Definition (74) BSS, Council Directive 2013/59/Euratom*)

F - RPE.3. According to the BSS, national authorities should be responsible (art. 15(2) and art. 81 BSS) for the development of recognition systems for RPEs, which will include the assessment of training received.

F - RPE.4. In ENETRAP W.D. 2.2 report: “Define requirements and methodology for recognition of RPEs” [2] some guidance has been developed for mutual recognition for RPEs.

2.2. Findings on the questionnaire regarding RPO:

The response rate to the questionnaire of member countries was impressively high (24 out of 31).

F - RPO.1. Regulatory requirements: Most countries have partly similar positions to RPO as described in BSS. Tasks attributed to RPO in the different countries are partly described as RPEs role in the new BSS. They are generally appointed by the licensees or the reporting authorities.

F - RPO.2. E&T: Most countries have a training scheme for RPOs, but the scheme is very different in the member countries. The majority of the countries differentiate their training schemes according to the application field.

F - RPO.3. Recognition of RPO: Less than 50% of the countries have a system of RPO recognition. These recognition systems, although different, are generally linked to satisfactory completion of defined education and training programs with recognition being awarded by national authorities.

F - RPO.4. The draft BSS describes in the definition that the RPO is an individual who is technically competent in RP matters relevant for a given type of practice and to supervise or perform the implementation of the RP arrangements. (Article 4 (81) Definitions)

F - RPO.5. Guidance has been developed in the ENETRAP projects on course content for the training schemes of RPO, but not in detail on learning outcomes [3] and [4].

F - RPO.6. The EQF level comparable to an RPO qualification is envisaged to be the level of 3 to 6 depending on the practice.

2.3. Findings on E&T workers

F - Workers.1. The undertaking and the employer in case of outside workers has responsibility for ensuring workers have suitable information and training. (Article 16)

F - Workers.2. The level of training is very dependent on the work and practice being carried out. The RPE has the duty of advising on appropriate training programs and the RPO has the task of implementing these programs.

F - Workers.3. The RPO must also ensure that the worker has sufficient and regular training and understands the local rules and requirements.

F - Workers.4. Some countries have only guidance others have requirements for the “appropriate” training of workers.

3. Summary conclusions TF E&T

3.1. Conclusions on Radiation Protection Expert

C - RPE.1. The TF E&T RP considers that the general picture developed by ENETRAP [5] in 2005 could be enough to comply with the mandate to provide a general picture of the situation on E&T in RP as far as recognition system are concerned. Thus, the TF E&T did not send out a new questionnaire on this subject.

C - RPE.2. On the base of the analysis of the BSS, the TF E&T concludes that the BSS does not specify detailed requirements in terms of education, training and experience for the RPE, only very general requirements.

C - RPE.3. The ENETRAP reference training scheme provides a good model for the knowledge and theoretical competence on the EQF level 6 (bachelor degree or equivalent) and 7 (masters degree or equivalent). The details of the reference syllabus can be found in the ENETRAP II W.D. 4.2 report: *Reference Standards for RPE training* [6]. Information on practical competence can be found in W.D 2.1 report: *Report on requirements and methodology for recognition of RPEs [7]*.

C - RPE.4. In line with the recommendations of EUTERP [8] we conclude that further guidance is needed to describe the workplace competencies required to fulfil the matters given in the BSS.

C - RPE.5. These workplace competencies need to be mapped to the relevant knowledge and skills given in the ENETRAP training scheme

C - RPE.6. Other training schemes and workplace job training can also achieve the required competencies.

C - RPE.7. For the time being first priority has to be given on the work needed for implementation of the BSS. Mutual recognition could be developed once the new guidance has been developed.

C - RPE.8. Once the new BSS has been implemented and guidance developed, a new survey should be done in order to get a picture on how the BSS has been transposed in the national systems.

3.2. Conclusions on Radiation Protection Officer

C - RPO.1. Further guidance should be developed for RPOs including core competences and practical experience specific for different types of practices derived from BSS article 86.

3.3. Conclusions on E&T of workers

C - Workers.1. Due to low priority and lack of information the TF E&T cannot give a good picture on the situation.

C - Workers.2. The framework of the draft BSS and the duties and tasks specified in Articles 84 and 86 provide sufficient control for the training of workers, so the E&T of workers can taken on board in the development of guidance on the implementation of the BSS.

C - Workers.3. There is no role for HERCA to take the harmonisation of the E & T of workers as described in the mandate.

4. Recommendations

4.1. Recommendations on Radiation Protection Expert

R - RPE.1. HERCA recommends that the EC develops further guidance on the duties and required practical competencies of the RPE.

R - RPE.2. HERCA members could be associated and have an input to the development of the guidance.

R - RPE.3. When new guidance is published, the TF recommends that HERCA should recognise it as a reference for the HERCA members and national authorities should follow it.

R - RPE.4. Once the new BSS has been implemented and guidance developed, a new survey should be done in order to get a picture on how the BSS has been transposed in the national systems.

R - RPE.5. Depending on the results, HERCA can decide on developing a mutual recognition system for RPE.

4.2. Recommendations on Radiation Protection Officer

R - RPO.1. HERCA recommends that the EC develops further guidance on the role of the RPO and the required training and competencies.

R - RPO.2. HERCA members could be associated and have an input to the development of the guidance.

4.3. Recommendations on E&T of workers

R - Workers.1. The TF E&T recommends that guidance for the RPE and RPO which has to be developed includes information on the training assessments of new workers and the identification of new training requirements, taking into account any national requirements.

5. Organization of further work

In a context where the new BSS have just been approved, the TF will remain active for one year as a network able to react on possible request by the Board or the chair on HERCA in the field of Education & Training RP. After this period there will be more elements to decide about further continuation of the work in E&T in HERCA and eventually about the way it will be organized.

6. References

[1] Council Directive 2013/59/Euratom of 5 December 2013 laying down basic safety standards for protection against the dangers arising from exposure to ionising radiation, and repealing Directives 89/618/Euratom, 90/641/Euratom, 96/29/Euratom, 97/43/Euratom and 2003/122/Euratom

[2] ENETRAPII WD2.2 Methodology for recognition of RPE (mutual recognition ed.), http://enetrap2.sckcen.be/en/Documents, 2011

[3] ENETRAPII WD3.1: Report on requirements for RPO competencies, A. Schmitt-Hannig, et al., 31-03-2010, http://enetrap2.sckcen.be/en/Documents

[4] ENETRAPII WD3.2: Report on the establishment of European guidance on the content and mechanisms for delivery of RPO training, A. Schmitt-Hannig, et al., 31-03-2012, http://enetrap2.sckcen.be/en/Documents

[5]. ENETRAP I.- FI6O-516529 Part E: Recognition of the report ENETRAP.-WD.04 Report on training needs and capabilities (WP2 and WP3: Progress report on the status of the questionnaire results *(Pages 76 to 82)*

[6] ENETRAP II.- WD 4.2.-European Reference Training Scheme for RPEs,

[7] ENETRAP II.- WD 2.1.- Requirements and methodology for the recognition of RPEs

[8] Outcomes of EUTERP Workshop 2011, ETRAP Conference 2013 & EUTERP Newsletter No.5 http://euterp.eu

Appendix 1

Results HERCA Questionnaire RPO and E&T exposed workers

1. Introduction

The mandate of the TF E&T RP is to present to the Board of Heads a general picture of the situation on E&T in RP and to identify the current needs for harmonisation among HERCA member countries and eventually, if needed, the mandate of a future working group on E&T.

The concept of RPO is a new function in the new European Basic Safety Standards [1] (BSS). Some EU Member States (MS) already have some kind of RPO. Criteria for the RPO may differ depending on their field of activity, taking in account various applications. The system in the BSS is that Member States, if appropriate may establish the arrangements for the recognition of radiation protection officers. In that case Member States shall specify the recognition requirements and communicate them to the Commission.

A questionnaire has been drawn up by the Task Force in order to obtain a general picture of the situation in HERCA member states. A similar exercise to obtain information on the education and training of RPEs has previously been carried out by the EC European Network on Education and Training in Radiological Protection (ENETRAP) project [5]. The questionnaire sent by the TF E&T to HERCA participating Authorities has concentrated therefore on the situation with regard to RPOs, although it does ask for information on national recognition schemes for RPEs, a subject the Task Force is also interested in.

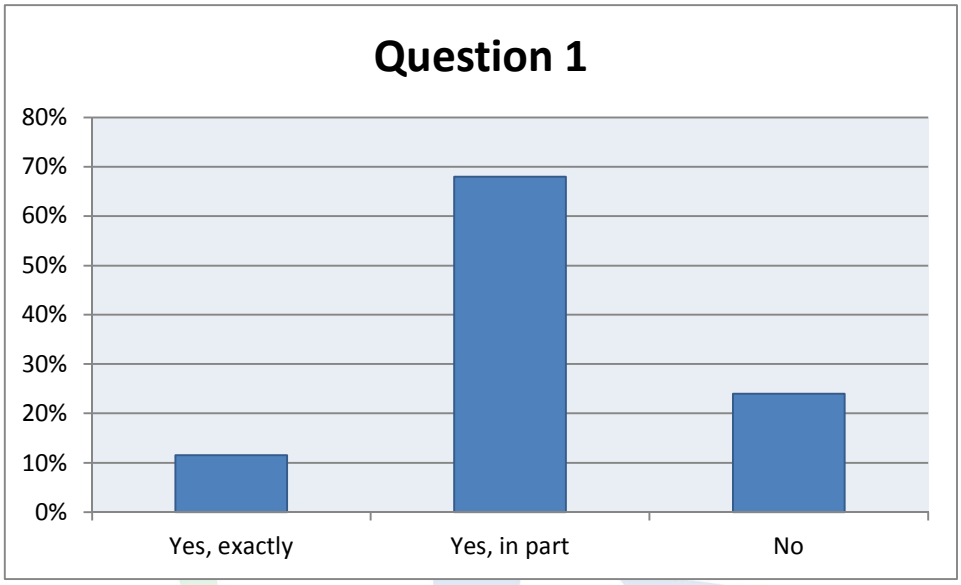
In this appendix the analysis of the results of this questionnaire are presented in order to report the current situation in Member States and identifying any areas where HERCA input is required. The results of the analysis of the questionnaire have serve as input for the findings, recommendations and concusions of the TF E&T, as presented in the present report.

2. Results of the questionnaire

From the 31 countries participating in HERCA which received the questionnaire, 26 countries have answered it and cooperated actively with the HERCA TF on E&T in the clarification of the situation of RPOs within the member states. The responding countries were the following: Belgium, Bulgaria, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Lithuania, Luxembourg, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland, The Netherlands, United Kingdom.

Information is not available for the following countries: Austria, Croatia, Malta, Italy, Latvia.

Question 1: Does the definition of the RPO in the revised BSS reflect a similar role in your national legislation?



Comments

- Usually a similar definition is used. The term RPO is not often used
- In most cases the **graded approach** is implemented.
  - ✓ Different requirements, for different activities/facilities (e.g. medical, non-medical)
  - ✓ Different number of RPOs, for different activities/facilities
- When an RPO (or equivalent) exists, is appointed by the licensee and is approved by the regulatory authority
- Not fully clarified the connection between an RPO of a practice and other practices

Question 2: Primary tasks and responsibilities associated with the role of the RPO.

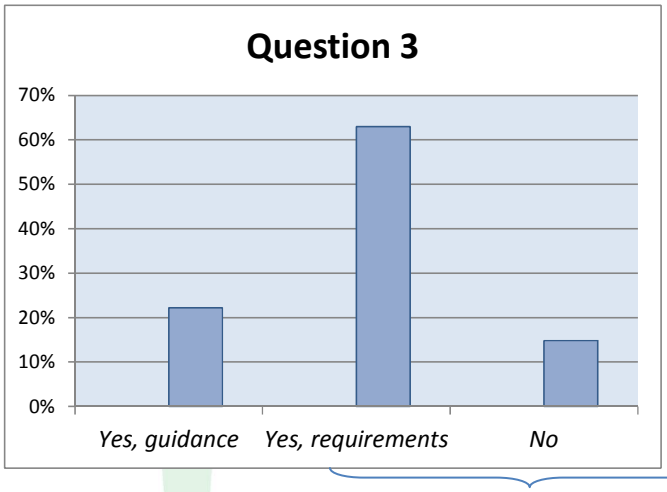
Primary tasks described in BSS	Harmonisation
Ensuring accordance with the requirements of any specified procedures or local rules	**100%**
Supervise implementation of the programme for workplace monitoring	55%
Maintaining adequate records of all radiation sources	40%
Carrying out periodic assessments of the condition of the relevant safety and warning systems	60%
Supervise implementation of the personal monitoring programme	60%
Supervise implementation of the health surveillance programme	25%
Providing new exposed workers with an introduction to local rules and procedures	10%
Giving advice and comments on work plans	50%
Establishing work plans	30%
Providing reports to the local management	40%
Participating in the arrangements for prevention, preparedness and response for emergency exposure situations	60%
Information and training of exposed workers	60%
Liaising with the radiation protection expert	25%

Tasks not described in BSS	
Liaising with the regulatory authority	50%
Quality management system (measurements, calibrations etc	30%
Storage of waste / managing radioactive waste	30%
Categorization of controlled and supervised area	25%
Risk assessment	25%
Classification of workers	10%
Supervising external workers	10%
Specify dose constraints	5%
Promotion and maintenance of a good safety culture	5%
Environmental monitoring programme	5%
Determine radiation doses	5%

Comments

- The RPO's role in most cases includes tasks of the RPE's role. Examples:
  - ✓ Quality assurance programme
  - ✓ Categorization of areas and/or personnel
- Liaising to e.g. regulatory authority, RPE
- The RPO was mentioned to be external collaborator in few cases

Question 3: Are regulatory guidance/requirements available that specifies the minimum educational level, training, work experience and personal attributes that are required for RPOs?



Guidance/Requirements	
Education	60%
Training	70%
Personal attributes (qualification, competence)	15%
Renew personal attributes	30%
Work experience	30%

Question 4: Within your country are there any radiation protection training courses provided specifically for RPOs (or their equivalent)? If yes, please provide information on these courses.

24 countries answered, and 2 skipped this answer.
Yes: 19 (79.2 %)
No: 5 (20.8 %)
Results in detail:

YES	NO	SKIPPED
CZECH REPUBLIC	BELGIUM	CYPRUS
DENMARK	BULGARIA	FRANCE
FINLAND	ESTONIA	
GERMANY	ICELAND	
GREECE	LUXEMBOURG	
HUNGARY		
IRELAND		
LITHUANIA		
NORWAY		
POLAND		
ROMANIA		
PORTUGAL		
SLOVAKIA		
SLOVENIA		
SPAIN		
SWEDEN		
SWITZERLAND		
THE NETHERLANDS		
UNITED KINGDOM		

Question 5: Are there different theoretical contents of training and/or work experience of RPOs (or equivalent) recognised in your country with regard to the complexity of the radiation applications in different areas, such as medicine, industry, research, nuclear fuel cycle etc?

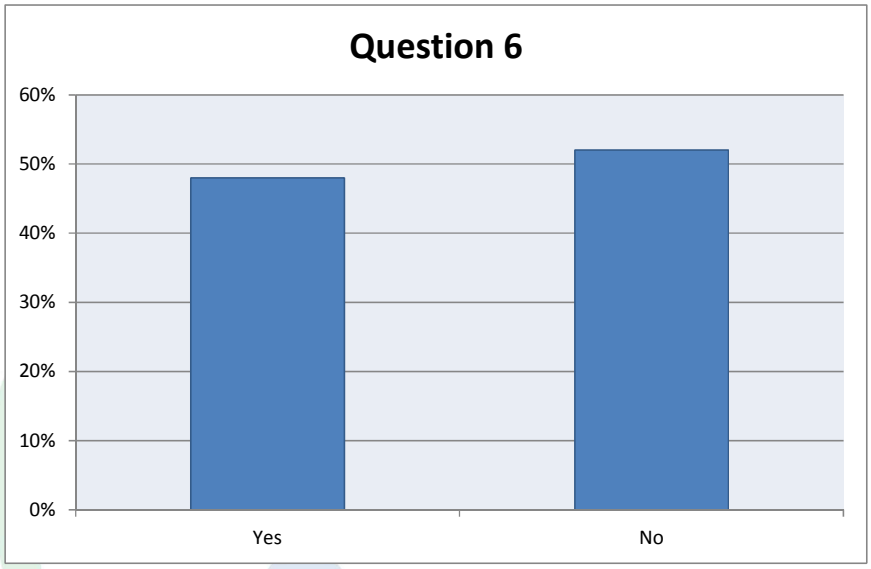
Those 19 countries were evaluated which answered 'yes' the previous question. One country skipped this question.
Yes: 14 (77.8 %)
No: 4 (22.2 %)
Results in detail:

YES	NO	SKIPPED
CZECH REPUBLIC	HUNGARY	SWEDEN
DENMARK	IRELAND	
FINLAND	NORWAY	
GERMANY	PORTUGAL	
GREECE		
LITHUANIA		
POLAND		
ROMANIA		
SLOVAKIA		
SLOVENIA		
SPAIN		
SWITZERLAND		
THE NETHERLANDS		
UNITED KINGDOM		

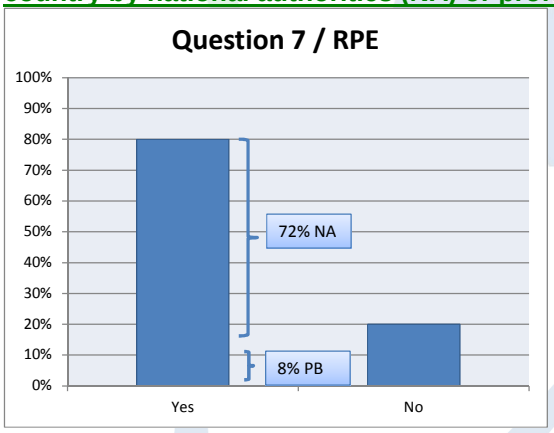
Summary of education and training

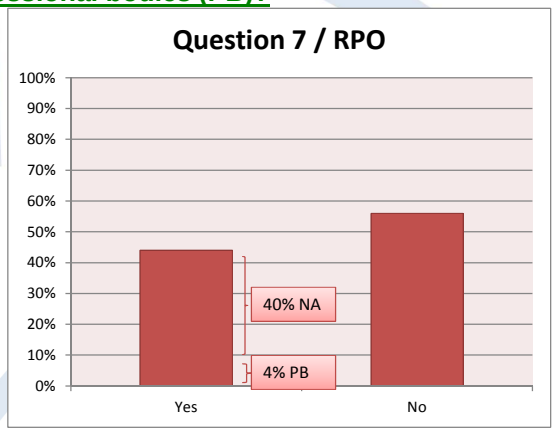
	CZECH REPUBLIC	DENMARK	FINLAND	GERMANY	GREECE	HUNGARY	IRELAND	LITHUANIA	NORWAY	POLAND	PORTUGAL	ROMANIA	SLOVAKIA	SLOVENIA	SPAIN	SWITZERLAND	THE NETHERLANDS	UNITED KINGDOM
Special educational requirements, RP training courses and/or competencies specified:	yes, qualification and training requirements	yes (not specified, what)	yes, all	yes, expertise	yes, education, competencies	yes, RP training	no	yes, education	no	yes, education, training, work experience	yes, education and RP training	yes, all	yes, RP training	yes, RT training and probably education requirements	probably yes (course types depend on the field of application)	yes, education requirements, RP training and competencies	yes, education requirements	yes, competencies
Different types of courses in function of the used type of radiation source and the risk attributed to it:	?	yes	yes	yes	yes	yes	no	yes	?	yes	?	yes	yes	yes	yes (not specified)	probably yes	yes	yes (?)
Special postgraduate/training courses:	yes	yes, for industrial	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes
Part of university education:	?	yes, for medical	yes, for medical	?	yes	no	no	no	no (?)	probably yes	no	?	no	no	not specified	yes	?	no
Licensed RP course with a legally regulated thematic and length:	yes	?	yes	yes	yes	yes	? (probably recommendations only)	?	?	yes	?	yes	yes, regulated thematic	yes	yes	yes	?	yes (?)
Regular refreshment courses are needed:	?	?	yes	?	?	yes	?	yes	?	?	probably yes	?	?	yes	?	?	?	?
Their thematic is regulated:	?	?	recommended	?	?	recommended	?	?	?	?	?	?	?	yes	?	?	?	?
Special courses depending on the field of application:	yes	? (probably yes)	yes	yes	yes	no (empirically applied)	?	yes	yes	yes	no	yes	yes	yes	yes	yes	yes	yes
Fields of application:										?							?	
medical	yes	yes	yes	yes	yes	(yes)		yes				yes	yes	yes	yes	yes		yes
industrial	yes	yes	yes	yes	yes	(yes)	yes	yes	yes			yes	?	yes	yes	yes		yes
nuclear	yes	?	no, separate RP training	yes	yes	(yes)		?	yes			yes	?	yes	probably yes	yes		?

Question 6: Does your legislation require the formal recognition of RPOs or equivalent?

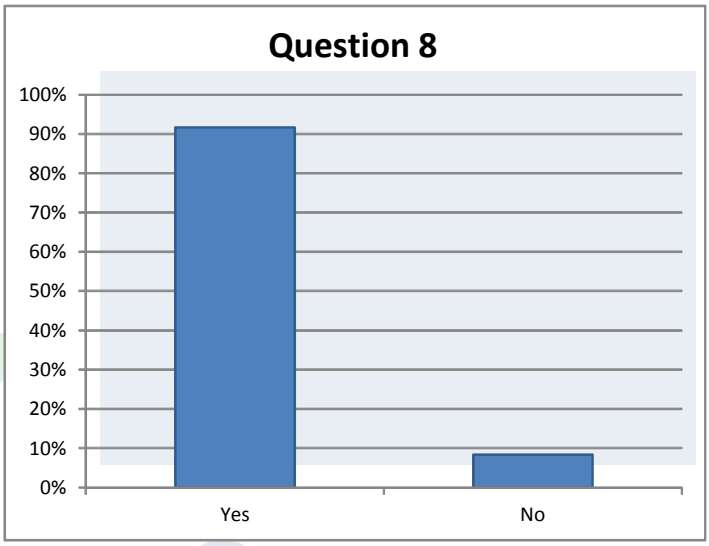


Question 7: Are there formal systems in place for the recognition of RPEs or RPOs in your country by national authorities (NA) or professional bodies (PB)?





Question 8: Is there a minimum level of basic education, training and experience required for the recognition of RPO?



Question 9: Once the prerequisites are fulfilled, is successful completion of any of the courses identified in Question 5 sufficient for recognition as RPO?