HERCA

Country Fact Sheets

Education and Training

Belgium

RPE & RPO Fact Sheet

The RPE. Definition, role and function in national legislation

The RPE is implemented in national legislation as 'Expert agréé en contrôle physique/Deskundige erkend in fysische controle).

The RPE is an individual who is employed by a specific undertaking or works for an external "health physics organization", recognized by the FANC. The role and function of the RPE in national legislation is to perform specific tasks within the undertaking's department for health physics with regards a.o. to occupational and public exposure, to determine safety measures and approve projects, instructions and risk assessments. All licensees / transport organizations have either to employ an internal RPE, or to have a contract with an external recognized health physics organization. For certain high-risk practices (nuclear facilities), an internal RPE is mandatory.

RPE's have to have a personal accreditation in order to perform the tasks specifically reserved for RPE's. This accreditation is granted by the FANC and can be limited in scope, based on the level of knowledge, skills and experience of the candidate. The level of the required expertise should be commensurate to the associated risk of the practice. The accreditation criteria and process are defined in the regulation.

At this moment four RPE-levels are implemented: two for tasks specifically for transport (T1 of T2 expert) of radioactive materials and two related to classified establishments (Class I or Class II expert). The higher RPE-level is in general required for undertakings that have a more complex license and/or require a higher level of radiation protection.

The RPO. Definition, role and function in national legislation

The RPO is implemented in national legislation as «Agent de radioprotection/Agent voor de stralingsbescherming. The role and function of the RPO is both to supervise and/or to perform the implementation of the radiation protection arrangements for a given type of practice in the undertaking organization. The RPO is an employee of the undertaking and perform the more daily tasks of radiation protection in the undertaking. The undertaking is required to provide adequate education, training and retraining in the field of radiation protection, specific for the type of practice. In specific, exeptional situations, such as source replacement, an RPO can be designated from an external firm, but they are accountable to the head of the undertakings health physics departmenet. RPO is mandatory for all types of practices. There are several types of RPO, who are specialized in a specific type of practice and the training level is linked to the associated risk of the practice.

Country info

Capital	BRUSSELS
Official language	FR/NL/D
Population	11,4 M
Area	30.528 km^2
Currency	Euro (€)
Time zone	UTC +1
Calling code	32
Internet TLD	.be

Competent Authority

Federal Agency for Nuclear Control

FANC reports to the Federal Minister of Home Affairs

Other authorities involved

Minister of Public Health : medical applications

Minister of Economic and Minister for Energy : nuclear fuel cycle and radioactive waste

Minister of Employment : protection of workers

Minister of Agriculture:
monitoring the food chain for radioactive substances

Implementation of E&T requirements in

- Laws
- Royal decrees
- FANC decrees

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RPE tasks

Possible tasks and topics of advice of the RPE include the topics mentioned in the BSS (articles 82.2, 34, 37, 38, 68), such as categorisation of controlled and supervised areas, quality assurance, support in obtaining licenses, dose monitoring, setting up ALARA, prevention, training etc. When necessary, the RPE cooperates with and liaises with the RPO, the Medical Physics Expert in a medical centre and the occupational physician. The RPE may be assigned the tasks of radiation protection of workers or members of the public. The RPE may also perform the tasks of an RPO, when he is a employee of the undertaking.

RPO tasks

Tasks of RPO are assigned to a employee of the undertaking.
Possible tasks of the RPO include the topics mentioned in the BSS (article 84.2), such as to ensure that work with radiation is carried out in accordance with radiation protection requirements, supervision of workplace monitoring etc. The RPO cooperates and liaises with the RPE.
The task of RPO can be carried out by a RPE, but the tasks of the RPE can not be carried out by a RPO.

RPE education, training & retraining

The training requirements to qualify as an RPE include theoretical courses on radiation protection, technology and nuclear safety (level of knowledge / number of hours depending on type of RPE accredatation) and practical experience as a RPE trainee. Specific training courses are available for the 4 different RPE types.
The RPE-training courses are taught at training centers such as universities.
Passing the exam results in the required diploma to become an RPE at basic or high level. The subjects, number of hours of theoretical training,.. are listed in the legislation.
The amount of working experience to become an RPE is not specified in regulations, but a guidance period is specified in an information document available online.
Retraining of the RPE (basic and high level) is regulated and documented through the formal recognition requirements.

RPO education, training & retraining

A specific RPO-training course with specificied learning outcomes is required to become an RPO. The training is taught at training centers such as universities or private institutions. Passing the exam results in the required diploma to become an RPO. The required level of training, compentences and learning outcomes of the RPO are proportional to the risk and complexity of the practices.. There is no specific educational entrance level for the RPO-training. The level of training depends on the type of practice. The RPE needs to approve the training programme of the RPO to make sure that the level of knowledge is in accordance to the risks presents in the installation. (The amount of working experience to become an RPO is not specified in regulations.
Retraining of the RPO is provided and documented by the undertaking and the requirements are in line with the risks present in the installation.

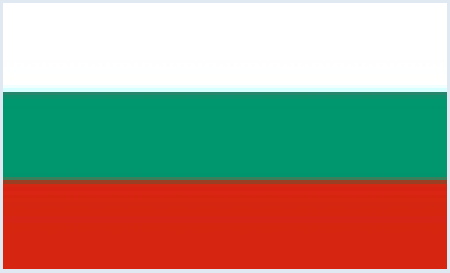
Recognition of services and experts

Services and experts are formally recognised by FANC.
The central register for the formal recognition of occupational health services, the national dosimetry service, MPE and RPEs is kept by FANC. Recognition of the RPO by FANC is not required. For the first registration as an RPE in the central register an RPE-diploma from an accredited training center is required. The first period of 3 years as a accredited RPE, the RPE is required to renew its accrediation. To renew the accreditation, evidence should be provided on the required minimum amount of working experience as well as training points that has been acquired every year. Re-registration is again valid for 6 years.
There is no system for mutual or bilateral recognition in place. RPEs from other member states can apply for registration via a special recognition procedure, by showing the Competent Authority that their qualifications are equal to the formal recognition requirements and they must be a citizen of one of the member states of the European Union. If necessary, the Competent Authority may require the RPE to undergo additional training or passing an admission exam.

	Radiation Protection Expert	**Radiation Protection Officer**
Implementation	Yes	Yes
National terminology	Expert agréé en contrôle physique/Deskundige erkend in fysische controle	Agent de radioprotection/agent voor de stralingsbescherming
Translation	Recognized expert in health physics	Radiation Protection Agent
Role	Perform specific 'high-level' (non-recurrent) tasks within the undertaking's department for health physics	Local supervision or performance of radiation protection tasks in the workplace
Types or levels	Expert class I Expert class II Expert T1 Expert T2	Specific to the practice
Recognition arrangements	Yes	No

Bulgaria

RPE & RPO Fact Sheet



The RPE. Definition, role and function in national legislation

The RPE is implemented in national legislation as „Квалифициран експерт по радиационна защита" which can be translated as a Qualified radiation protection expert (QRPE). This is an individual with the necessary knowledge, training and technical skills which enable him to make dose assessments, consultation and advice on the provision of radiation protection to staff and the population as well as the safety of nuclear facilities and sources of ionizing radiation (SIR).

The competence of a qualified radiation protection expert shall be recognized in accordance with the procedure laid down in the relevant legal acts.

The RPE is an individual. There are no restrictions on whether he is external consultant or company employee.

The advice of an RPE is mandatory for the following type of practices: Assessment of the projects of the facilities using SIR and the nuclear facilities from the radiation protection point of view; Adoption in practice of new or modified SIRs from the radiation protection point of view; Checking the effectiveness of protective equipment, etc.

The RPO. Definition, role and function in national legislation

The RPO is implemented in Bulgarian legislation as "Отговорник по радиационна защита" which can be translated as Responsible person for radiation protection. RPOs are employees and are determined by an order of the head of the company. The role and function of the RPO is both to supervise and/or to perform the implementation of the radiation protection arrangements for a given type of practice in the undertaking. The licensee defines the functions and duties of the RPO, including: analysis and evaluation of the results from workplace monitoring and the individual monitoring, recording of the data for the individual doses in the radiation passports, organization and control of the movement, the status and use of containers and sources in industrial radiography, internal documents in the site with SIR, emergency preparedness control. RPO conducts periodical instructions for persons whom are not required a certificate for activities with SIR. The licensee may also specify other regulated functions and obligations of RPO.

Country info

Capital	Sofia
Official language	Bulgarian
Population	7,364 M
Area	111 000 km2
Currency	lev (BGN)
Time zone	UTC + 2
Calling code	+359
Internet TLD	.bg

Competent Authority

Bulgarian Nuclear Regulatory Agency

Other authorities involved

National Centre of Radiobiology and Radiation Protection

Implementation of E&T requirements in

Regulation on basic norms of radiation protection.

Regulation on the terms and procedure for obtaining of vocational qualification and on the procedure for issuing of licenses for specialized training and of individual licenses for use of nuclear power.

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RPE tasks

RPE tasks include everything mentioned in BSS articles 82, 34, 37, 38, 68.

RPE interacts with the MPE in accordance to the medical practices regarding the protection of personnel.

RPE may be assigned for executing the tasks of RP of workers and members of the public. RPE may provide tasks for the RPO.

RPO tasks

RPO tasks include everything mentioned in BSS articles (84.1 and 84.2)

There are no restrictions for assigning the tasks of RPO.

RPE education, training & retraining

According to the Bulgarian legislation, for RPE can apply persons who have completed at minimum a master's degree in technical or natural sciences, has a minimum of 10 years of experience in the field of research, universities, specialized control authorities, companies or medical facilities, which is related to: application of X-ray systems, charged particle accelerators or gamma irradiators for medical purposes or designing of radiation protection shielding in facilities using SIR; analyzes and assessments of radiation doses for companies working with NORM and has undergone specialized courses and/or postgraduate studies related to radiation protection and safe use of SIR or has participated in the preparation of designing and developments related with radiation protection.

In the system of Ministry of Health (MoH) there is 3 years postgraduate training program in the radiation protection area, covering all areas of use of SIR and their potential effects on human health. This program is designed for physicists, engineers, chemists, biologists and physicians. After completion of the training graduates receive medical specialty "Radiation hygiene".

RPO education, training & retraining

According to the current Bulgarian legislation, activities with SIR can be carried out by persons with the necessary professional qualification, who have received a certificate of competence according to a special regulation. Personal is divided into three groups. The first group is the executive staff who work directly with SIR, the second group is the RPO and the personnel in the radiation protection services as well as the persons who provide and/or control the radiation protection during SIR activities. The third group consists of RPE.

The educations of RPOs are conducted once every five years and there are retraining courses every 3 years in BNRA licensed institutions. The exam consists of a written and an oral part. Upon successful pass of the exams, the licensed institution issues a certificate for a RPO.

Recognition of services and experts

Services and experts are acknowledged when there are included in relevant registers (lists) by the competent institution. For acceptance in the central register, services and experts must comply to acceptance criteria.

For the MRE recognition of competency is done according to a separate regulation of the Ministry of Health. Recognition of the RPO is not required.

The candidate for RPE submits an application to the BNRA (Bulgarian Nuclear Regulatory Agency) Chairman for an examination in front of the Qualification Exams Commission in the relevant field: Use of SIR for medical purposes and/or assessment of doses of external and internal irradiation in activities with materials with NORM. The exam consists of a written and an oral part on a previously announced questionnaire. Upon successful pass of the exams, the BNRA Chairman issues a certificate for a qualified radiation protection expert. The certificate is valid for 5 years and is added to a list of persons possessing certificates for RPE. Within this period it may be terminated by the BNRA Chairman.

	Radiation Protection Expert	Radiation Protection Officer
Implementation	Yes	Yes
National terminology	Квалифициран експерт по радиационна защита (КЕРЗ)	Отговорник по радиационна защита (ОРЗ)
Translation	Qualified radiation protection expert	Responsible person for radiation protection
Role	Provide advice or ensure the compliance with legal requirements	Providing and ensuring local radiation protection tasks
Types or levels	RPE in medical field RPE in industry and science Dose evaluation in activities with NORM	
Recognition arrangements	Yes	No

Croatia

RPE & RPO Fact Sheet

The RPE. Definition, role and function in national legislation

The RPE is defined in the national legislation as an individual or a group of individuals having know-how, education and experience to provide radiation protection advice to ensure effective protection of individuals. However, so far, only individuals have been recognised as RPEs.
The role and function of the RPE in national legislation is to provide competent advice to the undertaking regarding compliance with legal requirements, in respect of occupational and public exposure.
The undertaking, for all types of practices, is legally obliged to seek an advice for matters prescribed in the legislation from the RPE. The RPE can be an employee of the undertaking or the external advisor.
The Croatian expression for the RPE is »Stručnjak za zaštitu od ionizirajućeg zračenja« which can be translated as the »Ionising radiation protection expert«.
The RPE can be recognised in 8 different specialisations defined in the legislation.

There are no levels of RPE in a particular field, but there is a possibility that a RPE can be limited in providing advices within the field, depending on the evidence provided by the RPE applicant in the recognition process.
The expert for a particular field must be specialised for that particular practice.

The RPO. Definition, role and function in national legislation

The RPO is defined as an individual technically competent in radiation protection in matters relevant for a certain practice who supervises or performs radiation protection measures. The RPO is implemented in national legislation as »Osoba odgovorna za zaštitu od ionizirajućeg zračenja« which can be translated as »A person responsible for ionising radiation protection«.

The role and function of the RPO is described in the legislation to ensure that activities with radiation sources are conducted in line with requirements laid down in the Radiation Protection Programme of the undertaking and to supervise the implementation of radiation protection arrangements.

It is mandatory for an undertaking or the employer of external workers to appoint a RPO who can be an employee or an external individual.

The appointment of the RPO is mandatory for all types of practices and activities and the RPO is usually a liaison officer for communication with the regulatory body.

The tasks of the RPO can also be performed by the internal Radiation protection unit (RPU) or the RPE.

The undertaking and the employer of external workers is obliged to ensure all required assets to the RPO to fulfil his duties.

There are no categories or specialisations of the RPO, although for some practices there are requirements regarding the educational level.

Country info

Capital	Zagreb
Official language	Croatian
Population	4 M
Area	56 594 km2
Currency	kuna (HRK)
Time zone	UTC +1
Calling code	+385
Internet TLD	.hr

Competent Authority

Civil Protection Directorate (Ravnateljstvo civilne zaštite) under the Ministry of the Interior (Ministarstvo unutarnjih poslova)
https://civilna-zastita.gov.hr/radioloska-i-nuklearna-sigurnost/88

Other authorities involved

None

Implementation of E&T requirements in

- Zakon o radiološkoj i nuklearnoj sigurnosti, Narodne novine broj 141/13, 39/15, 130/17, 118/18
- Pravilnik o stručnjacima za zaštitu od ionizirajućeg zračenja, Narodne novine br. 36/18
- Pravilnik o obrazovanju potrebnom za rukovanje izvorima ionizirajućeg zračenja, primjenu mjera radiološke sigurnosti I upravljanje tehničkim procesima u nuklearnim postrojenjima, Narodne novine br. 42/18

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RPE tasks

The tasks of the RPE are covering the topics mentioned in the BSS (Art. 34, 37, 38, 68 and 82.2) as well as other tasks prescribed in the legislation.
The RPE must liaise with the MPE (in medicine) or RPO, when necessary and may also perform tasks of the RPO.
The RPE also can be tasked with radiation protection of workers or members of the public.

RPO tasks

Tasks of the RPO include topics covered in the Article 84 of the BSS, although in reality the training of the exposed workers is rarely performed by the RPO.
The tasks of the RPO can also be performed by the internal RPU or the RPE.
The RPO may be a full time or part-time employee or an external individual.

RPE education, training & retraining

The required level of the basic education for the RPE is university level (EQF 7) in disciplines prescribed in the legislation. Although a formal national training scheme for RPE has not been established yet, a RPE candidate is required to provide evidence on training in the scope of the RPE specialization obtained from workshops or training courses given by competent international organizations.
To be recognised, the RPE candidate must have at least 5 years of practical experience in a particular specialisation and sufficient evidence of education, training and documented advice and other evidences of competence. The validity of the RPE status is 5 years, after which re-recognition is required with proofs of education, training and competence gained in the previous 5 years. List of registered RPEs is available at: https://civilna-zastita.gov.hr/podrucja-djelovanja/radioloska-i-nuklearna-sigurnost/sluzba-za-radiolosku-sigurnost/strucnjaci-za-zastitu-od-ionizirajuceg-zracenja/136

RPO education, training & retraining

The required level of basic education for the RPO in medicine, dentistry, science, education, industrial radiography and nuclear installations is EQF 7 and EQF 6 for all others. In order to be accepted as a RPO by the competent body, a RPO appointed by the undertaking or employer must have the additional education in radiological protection. Additional education in radiological protection for RPOs is provided by means of e-learning which is the same for all practices and activities, or if gained in previous education, the written proof must be presented. After passing an online exam, a RPO applicant gets a certificate, which is valid for 5 years. The re-education is the same as the e-learning course and has to be completed every 5 years.

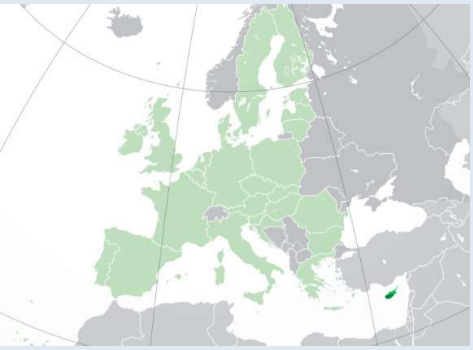
Recognition of services and experts

The system of recognition of RPEs is in place and the recognition is performed by the Competent authority. The Competent authority keeps a registry of approved RPEs, TSOs (including dosimetry services), occupational health services and MPEs, which are formally recognised by the competent authority also. The recognition of RPOs is not a formal process; it is a responsibility of the undertaking and the employer that a person appointed as a RPO fulfils the legal requirements. The recognition requirements for RPE are university diploma in specific discipline, proofs of education in radiation protection in a specific area and proofs of experience and competence. A system for recognition of RPEs from other EU member states is in place. The foreign RPE can be recognised if the home country of the applicant has adopted the BSS directive into national legislation. The applicant must have a Croatian language certificate of at least CEFR B2 level and must pass the examination of knowledge of Croatian regulation in the field of radiological protection.

	Radiation Protection Expert	**Radiation Protection Officer**
Implementation	Yes	Yes
National terminology	Stručnjak za zaštitu od ionizirajućeg zračenja	Osoba odgovorna za zaštitu od ionizirajućeg zračenja
Translation	The ionising radiation protection expert	A person responsible for ionising radiation protection
Role	Provide competent advice or supervise the compliance with legal requirements	supervision or performance of radiation protection measures
Types or levels	1. Individual dosimetric monitoring – external exposure, 2. Individual dosimetric monitoring – internal exposure, 3. Medicine, dental medicine and veterinary practices where generators are used, 4. Medicine, dental medicine and veterinary practices where radioactive sources are used, 5. Industry and science 6. Environmental monitoring 7. Radioactive waste management 8. NORM industries.	Medical applications, dentistry, science, education, industrial radiography, nuclear installations, others
Recognition arrangements	Yes	Yes

Republic of Cyprus

RPE & RPO Fact Sheet



The RPE. Definition, role and function in national legislation

The RPE is implemented in national legislation as “Εμπειρογνώμονας Ακτινοπροστασίας” (phonetically, Empirognomonas Aktinoprostasias).
The RPE is an individual or a team of individuals having the knowledge, training and experience needed to act or/and 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. The role and function of the RPE in national legislation is to provide competent advice and/or supervise the compliance with legal requirements on behalf of the undertaking and to perform specific tasks within the undertaking’s premises, to determine safety measures, instructions and risk assessments with regards to occupational and public exposure.
Each undertaking consults an RPE on issues falling within the areas of their competence as defined by Regulations, and notifies the Competed Authority in writing of any arrangements it has made for these provisions. The undertaking ensures that the RPE whom he/she consults are adequately trained and qualified in accordance with the provisions of the Law.
Undertakings are seeking advice from an RPE within the areas of its competence such as inspection and testing of protective devices and measuring instruments; prior critical review of plans for installations from the point of view of radiation protection; the acceptance into service of new or modified radiation sources from the radiation protection point of view; regular checking of the effectiveness of protective devices and techniques; and regular calibration of measuring instruments and regular checking that they are serviceable and correctly used. As regards public exposure, an undertaking is required to seek advice from an RPE in achieving and maintaining an optimal level of protection of members of the public; acceptance into service of adequate equipment and procedures for measuring and assessing exposure of members of the public and radioactive contamination of the environment; and verifying the effectiveness and maintenance of equipment and ensuring the regular calibration of measuring instruments.
The consulting of an RPE is mandatory for all type of practices. The RPE can be an employee of the undertaking, but may also be an external consultant.
RPE’s are allowed to consult on or supervise all types of practices and facilities (comprehensive expert) according to their specialisation and the level of their required expertise is appropriate to the associated risk of the practice. The recognition criteria and process are defined in the Regulations.

The RPO. Definition, role and function in national legislation

The RPO is implemented in the national legislation is as “Υπεύθυνος Ακτινοπροστασίας” (phonetically, Ipefthinos Aktinoprostasias). The RPO is an individual who is technically competent in radiation protection matters relevant for a given type of practice to supervise the implementation or perform the radiation protection arrangements. The RPO is an employee of the undertaking and has to be present in the premises where the practice is performed. The role and function of the RPO is to supervise and/or to perform the radiation protection arrangements for a given type of practice in the undertaking’s facility. The undertaking is required to provide adequate education, training and retraining in the field of radiation protection, specific for the type of practice. The employer of outside workers may also be required to designate an RPO to supervise/perform relevant radiation protection tasks as they relate to the protection of its workers.
There are no grades of RPO and the criteria and procedures for the recognition of RPO and their areas of competence are defined in the Regulations.

Country info

Capital	NICOSIA
Official language	GR/TUR
Population	847000 (2014)
Area	9.251 km2
Currency	Euro (€)
Time zone	UTC +2
Calling code	357
Internet TLD	.cy

Competent Authority

Radiation Inspection and Control Service
Department of Labour Inspection
Ministry of Labour and Social Insurance

Other authorities involved

None

Implementation of E&T requirements in

- The Protection from Ionising Radiation and Nuclear and Radiological Safety and Security Law of 2018 (L.164(I)/2018)
- The Protection from Ionising Radiation and Nuclear and Radiological Safety and Security (Basic Safety Standards for the Protection against the Dangers Arising from Exposure to Ionising Radiation) Regulations of 2018 (R.A.A. 374/2018)
- The Protection from Ionising Radiation and Nuclear and Radiological Safety and Security (Specifications for the Recognition of Services and Experts in the field of Radiation Protection and Nuclear Safety and Security) Notification of 2019 (R.A.A. 154/2019)
- The Protection from Ionising Radiation and Nuclear and Radiological Safety and Security (Code of Practice on the role, the responsibilities and the practices which require the appointment of a Radiation Protection Officer is required by the undertaking or the employer) Notification of 2020 (R.A.A 22/2020)

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RPE tasks

The RPE may be assigned the tasks of radiation protection of workers or members of the public. Possible tasks and topics of advice of the RPE include the topics mentioned in the BSS (articles 82.2, 34, 37, 38, 68), such as categorisation of controlled and supervised areas, quality assurance, authorisation, dose monitoring, setting up ALARA, prevention, training etc. When necessary, the RPE cooperates with and liaises with the RPO and the MPE in a medical facility. The RPE may also perform the tasks of an MPE or an RPO (when he is an employee of the undertaking).

RPO tasks

Tasks of the RPO include the topics mentioned in the BSS (article 84.2), such as to ensure that work with radiation is carried out in accordance with radiation protection requirements, supervision of workplace monitoring etc. The RPO cooperates and liaises with the RPE and the RPO must be a permanent employee of the undertaking. The task of RPO can be carried out by a RPE, but the tasks of the RPE cannot be carried out by a RPO.

RPE education, training & retraining

The RPE should have theoretical and practical education and training/aptitude in fields of radiation protection and/or nuclear or radiological safety and security, depending on the type of practice(s) for which he/she intends to provide services.
The minimum requirement is either a relevant academic qualification or related work experience of 5 years plus 5 years of documented professional experience in radiation protection or, α university degree in radiation protection and 3 years of documented professional experience in radiation protection. Also it is mandatory to successfully pass an oral and/or written examination and interview carried out by the Competent Authority.
For the renewal of recognition, every 5 years, a total duration of 80 hours documented education and training in matters related to the practice(s) of expertise is requested, acquired during the period since the previous recognition. The Competent Authority ensures the provision of training through local institutions or universities, consultants, internal knowledge management initiatives (e.g. train-the-trainers workshops), the IAEA, the EU, other European or international organisations etc.

RPO education, training & retraining

A general syllabus for the RPO training is provided by the Competent Authority.
The RPO suitability is examined during authorisation process and inspections.
The amount of working experience to be appointed as an RPO is not specified in Regulations.
Retraining of the RPO is provided and documented by the undertaking and the requirements are in line with the risks associated with the facility.

Recognition of services and experts

The Competent Authority sets out the criteria and procedures for the recognition of dosimetry services, occupational health services, MPEs and RPEs. Recognition of the RPO by the Competent Authority is not required.

There is no system for mutual or bilateral recognition in place. RPEs from other member states can apply for recognition via the standard recognition procedure. Their prior recognition from other states is taken into account during the process.

	Radiation Protection Expert	**Radiation Protection Officer**
Implementation	Yes	Yes
National terminology	Εμπειρογνώμονας Ακτινοπροστασίας	Υπεύθυνος Ακτινοπροστασίας
Translation		Radiation Protection Officer
Role	Radiation Protection Expert	Local supervision or performance of radiation protection tasks on workers
Types or levels	Provide advice or supervise the compliance with legal requirements on occupational and public exposure	N/A
Recognition arrangements	N/A	No formal certification

Czech Republic

RPE & RPO Fact Sheet

The RPE. Definition, role and function in national legislation

The RPE is implemented in national legislation as "'Dohlížející osoba", translated as »Supervisor«.
Holders of a licence for the management of a source of ionising radiation, management of radioactive waste, operation of a category III workplace or category IV workplace or the individual phases of decommissioning of a category III workplace or a category IV workplace shall ensure continuous surveillance of radiation protection by a Supervisor.
The role and function of the RPE is to provide competent advice, the compliance with legal requirements on behalf of the undertaking, in respect of occupational and medical exposure.
The presence of an RPE is mandatory on all types of practices, that is a medical applications, nuclear fuel cycles, selated and unselated sources in industry and research, accelerators, industrial radiography, gauging techniques, management of sources as production and repair.
The RPE is a person cannot be group of individuals, a company. However, in order to perform continuous surveillance of radiation protection at an energy-generating nuclear installation holder of a licence shall set up a Radiation Protection Unit. RPE may be a member of a Radiation Protection Unit.
The RPE can be an employee of the undertaking, but may also be an external consultant.
The employer of outside workers is also required to designate a RPE as necessary to supervise relevant radiation protection tasks as they relate to the radiation protection of their workers.

The RPO. Definition, role and function in national legislation

The RPO is implemented in national legislation as „osoba s přímým dohledem nad radiační ochranou„ translated as »Person with a direct supervision of radiation protection«. Holders of a licence in a workplace of category II or higher shall ensure surveillance of radiation protection by a Person directly supervising radiation protection.
The role of the RPO is to perform the implementation of the radiation protection arrangements for a given type of practice.
The RPO is an employee of the undertaking.
The undertaking is required to provide adequate education, training and retraining in the field of radiation protection, specific for the type of practice.
The employer of outside workers is also required to designate an RPO as necessary to perform relevant radiation protection of their workers.
RPO shall cooperate with the Supervisor.

Country info

Capital	Prag
Official language	Czech
Population	10 M
Area	79 000 km2
Currency	CZK
Time zone	UTC + 1
Calling code	+420
Internet TLD	.cz

Competent Authority

SUJB (The State Office for Nuclear Safety – SONS)

Other authorities involved

The Ministry of Heath for medical exposures and MPE

Implementation of E&T requirements in

- Atomic law (No. 263/2016 Coll.)
- Decree No. 422/2016 Coll.
- Decree No. 109/2016 Coll.

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RPE tasks

RPE according to Degree No. 422/2016/Coll., articles 43 performs the supervision of radiation protection by monitoring and evaluating the performance of the licensee's' duties related to ensuring all measures to be taken for the safe management of the ionising radiation source. RPE provides the licensee the education of exposed workers, prepares the monitoring programme, performs the optimisation of radiation protection, investigates radiation incidents, loss, theft or damage of sources. RPE proposes the categorisation of workers, workplaces, controlled and supervised areas, sets up ALARA.
RPE cooperates with the RPO and the MPE in a medical field. The RPE may also perform the tasks of an RPO.
Tasks of RPE can be assigned as a parttime employee or as the external consultant.

RPO tasks

Tasks of the RPO may include the topics mentioned in legislatio (Degree No. 422/2016 Coll., articles 44), such as to ensure tha work with radiation is carried out in accordance with radiatio protection requirements.
RPO cooperates with the RPE.
The task of RPO can be carried out by a RPE.
RPO should be an employee of the undertaking, RPO task can b assigned only as a full time job.

RPE education, training & retraining

The requirements to become an RPE are required in legislation. For RPE at a workplace in radiation practices with the significant ionizing radiation source which is used for medical exposure, and very significant ionizing radiation source is required the university education.
One year work experience with "ionizing radiation" is required. The initial training course is required to become a RPE. The level of training for the RPE is proportional to the risk of the practices, which are a medical applications, nuclear fuel cycles, selated and unselated sources in industry, accelerators, industrial radiography, research, management of sources as production and repair.
The training is the course lasting 20 hours of lessons.
Course is organized by subjects with SONS licence.
RPE shall successfully pass the examination of special professional competence before an examining board appointed by the SONS. Passing the exam results in the certificate to become an RPE.
Duration of the recognition is for life, but RPE shall pass the refreshing course (lasting 6 hours of lessons). Course shall be repeated every 5 years.

RPO education, training & retraining

The requirements to become an RPO are required in legislatior The requirement for RPO is completed secondary education. On year work experience with "ionizing radiation" is required as well.
The initial training course is required to become an RPO.
The level of training for the RPO is proportional to the risk of th practices, which are a medical applications, nuclear fuel cycles selated and unselated sources in industry and research an accelerators. The training is the course lasting 20 hours of lessons Course is organized by subjects with SONS licence. RPO sha successfully pass the examination of special professiona competence before an examining board appointed by the SONS Passing the exam results in the certificate to become an RPO.
Duration of the recognition is for life, but RPO shall pass refreshin training course lasting 6 hours of lessons. Course shall b repeated every 5 years.

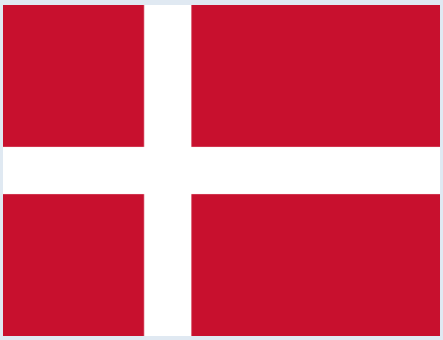
Recognition of services and experts

Experts (RPE, RPO) shall be recognized by SONS. RPE and RPO shall pass the examination of special professional competence. Passing the exam results in the certificate to become an RPO/RPE. The central register for the recognition of RPEs and RPOs is kept by the SONS. The Ministry of Health is responsible for the recognition of the MPE.
SONS shall recognize professional qualifications obtained in another Member State of the European Union, another State that is a contracting party to the Agreement on the European Economic Area or in the Swiss Confederation as special professional competence for the performance of activities of particular relevance to nuclear safety and radiation protection. Evidence of education issued abroad, except evidence of education issued in a Member State of the European Union, shall be accompanied by a nostrification clause in accordance with other legislation; evidence of higher education shall be accompanied by a certificate of recognition of equivalence of education in accordance with other legislation. A decision of the SONS to recognize professional qualifications obtained in another Member State of the European Union, another State that is a contracting party to the Agreement on the European Economic Area or in the Swiss Confederation shall substitute the successful completion of the examination of special professional competence before an examining board appointed by the SONS.

	Radiation Protection Expert	Radiation Protection Officer
Implementation	Yes	Yes
National terminology	Dohlížející osoba	Osoba s přímým dohledem nad radiační ochranou
Translation	Supervisor	Person with a direct supervision of radiation protection
Role	Provide advice or supervise the compliance with legal requirements in radiation protection	Local supervision of radiation protection tasks
Types or levels	1) management of sources - production, repair. 2) medical applications 5) nuclear fuel cycles 6) sealed and unsealed sources in industry 7) accelerators 8) industrial radiography 9) gauging techniques 10) waste management	1) medical applications 2) nuclear fuel cycles 4) sealed and unsealed sources in industry 3) accelerators
Recognition arrangements	YES	YES

Denmark

RPE & RPO Fact Sheet



The RPE. Definition, role and function in national legislation

The RPE is implemented in national legislation as "strålebeskyttelsesekspert" (SBE), which translates to "Radiation Protection Expert".

The RPE shall, within their field of competence, provide advice in compliance with legal requirements on establishment of the radiation protection arrangements relevant for the undertaking's planned and ongoing practices and on issues from a radiation protection point of view associated with emergencies, accidents and incidents, with regard to workers and members of the public.

The RPE is an individual that has been recognized by the competent authority.

An undertaking with an obligation for compiling a safety assessment must, commensurate with the nature, scale and complexity of the undertaking's use of radiation sources or exposure, consult an RPE or multiple RPEs who collectively possess the expertise needed for the undertaking's practices. The RPE function may be outsourced to an external provider.

The RPO. Definition, role and function in national legislation

The RPO is implemented in national legislation as "strålebeskyttelseskoordinator" (SBK), which translates to "Radiation Protection Coordinator".

The RPO shall, within their field of expertise, monitor or supervise the operation of the radiation protection arrangements relevant for the undertaking's practices and assist in maintaining the radiation protection of workers and members of the public entailed by the undertaking's practices.

An undertaking subject to the licensing or notification requirement or which is the registrant of a facility must, commensurate with the nature, scale and complexity of its use or exposure, have at its disposal one or more RPOs.

The RPO is expected to be an employee of the undertaking. Exceptionally, the RPO may be contractually assigned as an external consultant.

An undertaking may retain multiple RPOs who collectively possess the expertise needed for the undertaking's use of radiation sources or exposure.

In undertakings where multiple RPOs are registered, they will generally be registered regarding specific areas – either in terms of source type, use or area. Multiple RPOs may serve as a duplicate or backup function.

Country info

Capital	Copenhagen
Official language	Danish
Population	5,9 M
Area	42.952 km2
Currency	DKK
Time zone	UTC + 1
Calling code	45
Internet TLD	.dk

Competent Authority

Danish Health Authority

Other authorities involved

The Ministry of the Interior and Health

Implementation of E&T requirements in

- Laws
- Executive Orders

RPE tasks

RPO tasks

HERCA

The RPE's advice may include:

- Optimisation and the establishment of dose constraints
- Compilation of documentation such as safety assessments and written instructions
- Plans for new or modified facilities and the acceptance into service of new or modified radiation sources with consideration of engineering controls, design features, safety features and warning devices of relevance to radiation protection
- Classification of controlled and supervised areas
- Training and further education programmes for exposed workers
- Categorisation of workers
- Employment conditions for pregnant and breastfeeding workers
- Individual radiological monitoring
- Radiological monitoring of workplaces
- Equipment for monitoring radiation intensity and contamination with radioactive substances
- Environmental monitoring programme
- Arrangements for handling, storage, disposal and discharge of radioactive waste
- Arrangements for the prevention of emergencies, accidents and incidents
- Preparedness and response in emergency exposure situations
- Investigation and analysis of emergencies, accidents and incidents
- Quality management systems applicable to the use of radiation sources and to exposure.

The RPO must assist the undertaking in the performance of the following tasks, where appropriate:

- Ensuring that the use of radiation sources and any exposure are compliant with the undertaking's instructions
- Supervision of the implementation of the program for radiological monitoring of workplaces
- Maintaining records of the undertaking's radiation sources and facilities
- Carrying out regular assessments of the condition of the relevant safety and warning systems
- Supervision of the performance of individual radiological monitoring
- Supervision of the performance of medical surveillance pursuant to rules laid down by the Danish Working Environment Authority
- Providing workers with information, instruction and training concerning the use of radiation sources and exposure
- Reporting to local management
- Implementation of the arrangements for prevention of, emergency preparedness for and response in emergency exposure situations.

For medical exposures the Medical Physics Expert (MPE) may serve as RPE. Recognized RPEs in the medical field are almost exclusively hospital physicists, who are also recognized MPEs.
The RPE may undertake the role of RPO, if the individual meets the requirements for RPO given in the legislation.
The RPE shall provide advice with regard to workers and members of the public.

The tasks of the RPO may be carried out by the RPE, but must be carried out by one or more individuals and not by a Radiation Protection Unit.

Tasks of the RPO may be assigned to full time or part-time employees. The undertaking must have access to the RPO. When an undertaking must "have access to" the RPO, it means that the undertaking and its employees should be able to quickly and easily reach the RPO.

RPE education, training & retraining

RPO education, training & retraining

An RPE must have completed an academic master's degree or the equivalent in physics, technology, chemistry or biology or an equivalent scientific education followed by at least three years' practical experience.

The RPE must in addition possess:

- In-depth expertise in ionizing radiation
- In-depth knowledge of radiation protection legislation
- Mastery of methods for establishing and ensuring a high standard of radiation protection for humans, radiation sources, facilities and other installations, including the establishment of associated procedures
- Skills within
    - Calculation methods regarding shielding and doses to individuals
    - Specific matters pertaining to the discharge of radioactive material and environmental monitoring (for practices involving radioactive substances)
    - Selection and testing of measuring instruments
    - Principles of quality management.

Retraining may be required as a condition for re-recogition.

Under the legislation, the competent authority is required to set out the minimum requirements for the RPO.

The requirements include appropriate professional education, successful completion of radiation protection courses and sufficient professional experience in the relevant practice.

The RPO must satisfy:

- The requisite technical and practical competence for monitoring or overseeing the operation of the radiation protection arrangements that are of relevance in relation to the undertaking's practices
- The requirements for knowledge, skills and competences laid down in the legislation
- A specific RPO-training course with specified learning outcomes, which may be a part of the professional education.

Recognition of services and experts

The RPEs and RPOs are approved by the competent authority following application.

Recognition of the RPE is granted in response to an application from the RPE for a specific type of practice. Recognition is granted for a term of 5 years, after which the RPE must apply for re-recognition.

Recognition as an RPO is granted in response to an application from the undertaking covering the undertaking's specific use of radiation sources. For types of practices for which no requirements have been established for the knowledge, skills and competences in the legislation, the national competent authority recognizes the RPO on a case-by-case basis.

There are no agreements on recognition with other member states. RPEs and RPOs from other member states can apply for recognition following the same procedure as for national RPEs and RPOs and must have qualifications equal to the national recognition requirements.

	Radiation Protection Expert	**Radiation Protection Officer**
Implementation	Yes	Yes
National terminology	Strålebeskyttelsesekspert (SBE)	Strålebeskyttelseskoordinator (SBK)
Translation	Radiation Protection Expert	Radiation Protection Coordinator
Role	Provide advice on establishment of the radiation protection arrangements	Monitor or supervise the operation of the radiation protection arrangements
Types or levels	Specific to the practice	Specific to the practice
Recognition arrangements	Yes	Yes

Estonia

RPE & RPO Fact Sheet

The RPE. Definition, role and function in national legislation

The RPE is implemented in national legislation as '*kiirgusekspert*', which is literal translation of *'radiation expert'*. The role and function of the RPE in national legislation is to consult holders of radiation practice licence and other persons to the extent of his or her knowledge and skills, in respect of occupational and public exposure.

The RPE is an individual and cannot be a group of individuals. The RPE can be external expert, but also internal expert being an employee of the undertaking. The presence of the RPE in an undertaking is not required.

The RPE is specialised following fields of activities:
1) industrial applications;
2) medical applications;
3) naturally occurring radioactive materials;
4) research and education;
5) radioactive waste management;
6) accelerators;
7) training the exposed workers and radiation safety specialists.
The RPE can be specialized more than one field of activity. The RPE consults in the extent his or her fields of activity and the advice to the undertaking can be internal, if the RPE is an employee of the undertaking, and external.

The RPO. Definition, role and function in national legislation

The RPO is implemented in national legislation as *'kiirgusohutuse spetsialist'*, which is literal translation of *'radiation safety specialist'*. The role and function of the RPO is to supervise and to perform the implementation of radiation protection and safety requirements for a given type of radiation practice in the undertaking. The RPO may instruct the exposed workers and arrange their training and retraining.

The RPE is an employee of the undertaking. The undertaking is responsible to instruct the RPO on working environment and safe operation of given type of practice, train and retrain in the field of radiation protection and safety. The employer of outside workers designates the RPO at same conditions when necessary to supervise or perform relevant radiation protection tasks, which relate to the protection of exposed workers its own.

The designation of the RPO is mandatory if the undertaking has more than 10 exposed workers. Regardless of the number of exposed workers, the designation of the RPO is mandatory for:
1) radiation practices during which an exposed worker receive or may receive an effective dose exceeding 6 millisieverts per year;
2) radiation practices related to high-activity sealed sources;
3) operation of nuclear facilities;
4) exploitation, closure and decommissioning of any facility of nuclear fuel cycle;
5) interim storage or final disposal of radioactive waste.

Country info

Capital	Tallinn
Official language	Estonian
Population	1,3 M
Area	45 000 km2
Currency	Euro (€)
Time zone	UTC + 2
Calling code	+372
Internet TLD	.ee

Competent Authority

Environmental Board, reporting to the Ministry of Environment

Other authorities involved

None

Implementation of E&T requirements in

- Radiation Act
- The regulation of the Minister of the Environment "The curriculum for training of radiation experts, their professional skills requirements, the procedure for application for the certificate and the standard format of applications and certificates"
- The regulation of the Minister of the Environment "Requirements for radiation safety training of radiation safety specialists and exposed workers"

HERCA

RPE tasks

Possible tasks and topics of advice of the RPE include majority the topics mentioned in the BSS (82.1, 82.2, 34, 37, 38, 68) such as classifying controlled and supervised areas; radiation monitoring programmes; equipment (protective and measuring); quality assurance; safe management of radioactive waste; risk analyses and radiological emergency response plans; training of radiation workers and radiation safety specialists; etc. The RPE advises the RPO and Medical Physics Expert (MPE) upon their request. The RPE may be assigned the tasks of radiation protection of workers or members of the public upon request. The RPE may perform the tasks of the RPO.

RPO tasks

Possible tasks and activities of the RPO include the topics mentioned in the BSS (84.2) depend on the nature of the radiation practice. When necessary, the RPO co-operates with the RPE. The RPO's tasks and working time can be assigned through contract (external expert), or through job description if the RPO is an employee of the undertaking. The tasks of the RPO may be carried out by the RPE.

RPE education, training & retraining

To obtain certificate of RPE, the person is required to have the higher education provided by the institutions of professional higher education and universities; radiation safety training which study programme includes radiation safety principles and the Republic of Estonian and European Union legislation and relevant international recommendations and subjects discussing ionizing radiation to such an extent that it allows to operate in the area specified in the certificate; and at least 5 years of practical experience in the field of radiation safety.

The RPE training curriculum consists of a basic and a supplementary curriculum. The core curriculum is mandatory for all RPE and the choice of supplementary curriculum depends on the field of activity. As there are no specific educational training courses for the RPE, the data of diplomas and diploma supplements of higher education, and trainings (radiation safety training, international training, one credit point university course, etc.) are assessed against the RPE training curriculum.

Retraining of the RPE is not specified in the legislation.

RPO education, training & retraining

In order to become the RPO, initial training is required. The RPO undergoes initial training within 6 months of starting work. Retraining is provided at least once in 5 years. Initial and retraining is conducted by RPE holding a valid certificate. Educational level as well as required experience of the RPO is not specified in the legislation.

Initial training has to cover following topics: 1) introduction to radiation physics and dosimetry; 2) introduction to radiobiology; 3) detectors of ionizing radiation and methods of measurement; 4) legal bases of radiation safety; 5) principles of radiation safety, dose limits, technical means of radiation protection, infrastructure of radiation safety; 6) emergencies and emergency preparedness; 7) management of radioactive waste; 8) exercises. Retraining covers at least topics written in points 4-8 above.

The RPO, who has undergone initial training and retraining, a certificate is issued stating the time, place, volume, trainer and subject matter of the training.

Initial training and retraining of the RPO is provided and documented by the undertaking.

Recognition of services and experts

The recognition system for the RPE and for the MPE are set out in legislation under the jurisdiction of the Ministry of the Environment and of the Ministry of Education and Research accordingly. Requirements for the occupational health services and for the dosimetry service are set out in legislation under the jurisdiction of Ministry of Social Affairs and of the Ministry of the Environment accordingly. Recognition of the RPO is not required. Person may act as the RPE, if she or he is holding a certificate of radiation expert. For the recognition the person must provide an application with relevant documents. The compliance of the applicant with the requirements is verified with the test. The certificate is issued for 5 years, thus if the person wants to continue as the RPE, she or he must apply for new certificate. The recognition system of foreign professional qualifications to work as the RPE is provided with legislation.

	Radiation Protection Expert	**Radiation Protection Officer**
Implementation	Yes	Yes
National terminology	Kiirguseekspert	Kiirgusohutuse spetsialist
Translation	Radiation Expert	Radiation Safety Specialist
Role	Consulting on matters relating to compliance with legal requirements	Local supervision or performance of radiation protection
Types or levels	1) industrial applications; 2) medical applications; 3) naturally occurring radioactive materials; 4) research and education; 5) radioactive waste management; 6) accelerators; 7) training of the radiation workers and radiation protection specialists. The RPE can be specialized more than one field of activity.	More than 10 exposed workers and regardless the number of exposed workers: 1) radiation practices during which an exposed worker receive or may receive an effective dose exceeding 6 millisieverts per year; 2) radiation practices related to high-activity sealed sources; 3) operation of nuclear facilities; 4) exploitation, closure and decommissioning of any facility of nuclear fuel cycle; 5) interim storage or final disposal of radioactive waste.
Recognition arrangements	Yes	No

Finland

RPE & RPO Fact Sheet

The RPE. Definition, role and function in national legislation

The RPE in implemented in national legislation as 'Säteilyturvallisuusasiantuntija' (STA), which can be translated as 'Radiation Safety Expert'.

The role and function of the RPE in national legislation is to provide competent advice for undertaking in the planning, implementation, and monitoring of the radiation protection of workers and members of the public, excluding such radiation practices which do not cause occupational exposure, public exposure, or potential exposure.

The RPE is an individual. RPE's can also work as a group, but each group member need to have individual approval for RPE.

The advice of an RPE is mandatory for all type of practices which need a safety licence and where occupational, public, or potential exposure exist. It depends on the practice if the RPE needs to be closely involved or available.

There are 3 types of RPE, who are specialized in a specific type of practice. These types are radiation practices in health care and veterinary medicine, radiation practices of industry and research, and the use of nuclear energy. In health care, the Medical Physics Expert (MPE) is also RPE without any further recognition. The RPE can be an employee of the undertaking, but may also be an external consultant.

The RPO. Definition, role and function in national legislation

The RPO is implemented in national legislation as 'Säteilyturvallisuusvastaava' (STV), which can be translated as 'Radiation Safety Officer'. The role and function of the RPO is both supervising and/or performing the implementation of the radiation protection arrangements for a given type of practice in the undertaking.

The undertaking is responsible for the radiation safety of the practice. The obligations imposed on undertakings are not diminished by the appointment of the RPO or some other person in charge or by the use of experts in the operations. The undertaking is required to organize the RPO's place of work and other conditions in such a way that they are able to carry out their duties as RPO as required by the demands and scope of the use of radiation. The undertaking must provide adequate education, training and retraining in the field of radiation protection, specific for the type of practice.

The employer of outside workers is also required to designate the RPO as necessary to supervise or perform relevant radiation protection tasks as they relate to the protection of their workers.

In practices subject to a safety licence, the undertaking shall appoint a radiation safety officer and, if necessary, deputy. There are 13 types of RPO, who are specialized in a specific type of practice.

Country info

Capital	Helsinki
Official language	Finnish, Swedish
Population	5,5 M
Area	338 000 km2
Currency	EUR (€)
Time zone	UTC +2
Calling code	+358
Internet TLD	.fi

Competent Authority

Radiation and Nuclear Safety Authority, (STUK)

Other authorities involved

National Supervisory Authority for Welfare and Health (Valvira)

Implementation of E&T requirements in

- Radiation Act (859/2018)
- Government Decree on Ionizing Radiation (1034/2018)
- Decree of Ministry of Social Affairs and Health on Ionizing Radiation

RPE tasks

Possible tasks and topics of advice of the RPE may include the topics mentioned in the BSS (articles 82.2, 34, 37, 38, 68), such as categorization of controlled and supervised areas, quality assurance, licensing, dose monitoring, setting up ALARA, prevention, training etc.

When necessary, the RPE cooperates with undertaking and the RPO. If the RPE is an employee of the undertaking, the RPE may also perform the tasks of an RPO. In health care, the MPE is also RPE without any further recognition.

RPO tasks

The task of the RPO is to take care of the implementation of radiation protection as assistance to the operator. The RPO must have a real possibility to carry out the tasks assigned to them by the undertaking whose employee the RPO is.These tasks may include the topics mentioned in the BSS (article 84.2).

The task of RPO can be carried out by RPE. Tasks of RPO are assigned to a full time employee.

RPE education, training & retraining

In a future, specific training course with specific learning outcomes will be available. So far the same learning outcomes are required, but the education needs to be gathered from several sources. Learning outcomes depend on the type of RPE.

RPE's need to have a master's degree in a suitable field of mathematics, science or technology. In addition to this, the education level for RPE in radiation practice in health care and veterinary medicine is EQF 8, and for the other type RPE education level is EQF 7.

The amount of working experience to become a RPE is 4 years in radiation practice in health care and veterinary medicine, and for the other type RPE 2 years.

RPE must receive 20 hours of retraining over a five-year period in addition to that required for his/her other radiation-related duties.

RPO education, training & retraining

A specific RPO-training course with specified learning outcomes is required to become an RPO. The required level of training, competences and learning outcomes of the RPO are proportional to the risk and complexity of the practices. There are 13 different courses arranged by accredited training centers such as universities or private institutions. Passing the exam results in the required diploma to become an RPO.

The educational level for the RPO-training varies between EQF 4 and EQF 7 depending on the type of practice.

The amount of working experience to become a RPO varies from four months to three years, which is needed in the use of nuclear energy.

Retraining of the RPO is provided and documented by the undertaking. Depending on the field of expertise, the RPO must receive 5 - 40 hours of retraining over five-years period.

The RPO shall possess sufficient work experience in a field suitable for the task.

Recognition of services and experts

The Radiation and Nuclear Safety Authority (STUK) is responsible for the recognition of the RPE and National Supervisory Authority for Wellfare and Health (Valvira) is responsible for the recognition of the MPE. Recognition of the RPO is not required but when applying safety licence for radiation practise, the undertaking have to nominate competent RPO.

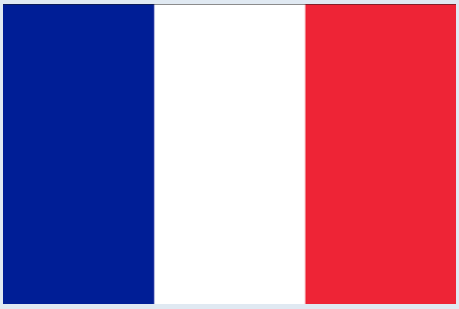
For RPE and MPE are issued a diploma after a recognition. MPE's are also registered to Valvira's register and other RPE's to STUK's register. No recognition is needed. RPOs are issued a diploma after specific training course.

There is no system for mutual or bilateral recognition in place. RPEs from other member states can apply for recognition from competent Authority. If necessary, the Competent Authority may require the additional training or passing an admission exam.

	Radiation Protection Expert	Radiation Protection Officer
Implementation	Yes	Yes
National terminology	Sätyeilyturvallisuusasiantuntija (STA)	Säteilyturvallisuusvastaava (STV)
Translation	Radiation Safety Expert	Radiation Safety Officer
Role	Provide competent advice for undertaking in the planning, implementation, and monitoring of the radiation protection	Local supervision and/or performance of radiation protection tasks
Types ~~or levels~~	A radiation safety expert's practice-type specific fields of expertise are as follows: 1. Radiation practices in health care and veterinary medicine 2. Radiation practices of industry and research 3. Use of nuclear energy	A radiation safety officer's practice-type specific fields of expertise in the radiation practices of health care and veterinary medicine are as follows: 1. X-ray practices in health care 2. dental X-ray practice 3. in other native X-ray practices than computed tomography practices of a primary health care service provider as referred to in the Health Care Act (1326/2010) or a service provider referred to in the Private Health Care Act (152/1990), hereinafter *native X-ray practices* 4. veterinary X-ray practices 5. nuclear medicine 6. the installation, maintenance and remediation of radiation equipment and sources 7. general use of radiation in health care and veterinary medicine A radiation safety officer's practice-type specific fields of expertise in the radiation practices of industry and research as well as in the use of nuclear energy are as follows: 8. sealed source and X-ray practices (other than the use particle accelerators in research and the production of radionuclides) as well as the use of unsealed sources in a laboratory in class 3 of radiation sources 9. the use of unsealed sources in a laboratory in classes 1 and 2 of radiation sources 10. industrial radiography 11. the use of particle accelerators in research and the production of radionuclides 12. practices that cause exposure to natural radiation 13. the use of nuclear energy The practice-type specific field of expertise applicable to a radiation safety officer responsible for trade in radiation sources and the road and rail transport of radioactive substances is the practice-type specific field of expertise 1–13 in the use of the radiation sources in question.
Recognition arrangements	Yes	No

France

RPE & RPO Fact Sheet



Country info

Capital	Paris
Official language	French
Population	67 M
Area	643 800 km2
Currency	Euro (€)
Time zone	UTC + 1
Calling code	33
Internet TLD	.fr

Competent Authority

ASN – Autorité de sûreté nucléaire
DGT – Direction générale du travail

Other authorities involved

DGPR – Direction générale de la prévention des risques

Implementation of E&T requirements in

- Public Health Code : articles R. 1333-18 to R. 1333-20
- Labour Code : articles R. 4451-112 to R. 4451-126 and D6113-19
- Order of 18 December 2019 (amended by order of 12 November 2021)
- Order of 28 June 2021

The RPE and the RPO. Definition, role and function in French legislation

The RPE and the RPO are implemented in national legislation as “Conseiller en radioprotection” (CRP), which is a literal translation of “Radiation Protection Advisor”. The roles and the tasks of the CRP are described in the Labour code for the occupational exposure (article R. 4451-123) and in the Public Health code for the public and environment exposures (article R. 1333-19). The CRP gives advice to the employer (RPE). He supervises or directly executes the operational implementation of radiation protection (RPO) including measurements or verifications.
The CRP may be an internal certified person called “Personne compétente en radioprotection” (PCR), or an external certified body called “Organisme compétent en radioprotection” (OCR).
In the most Basic nuclear installations (BNI), the undertaking is responsible for an internal organisation named “Pôle de competence en radioprotection” (Competence center) which is composed by radiation protection experts with a high level of qualification (level 7 according to the Labour code, article D6113-19) and by radiation protection officers with a minimum level 5 qualification. This organisation, in the civil BNIs is approved by the Autorité de sûreté nucléaire (ASN) within the BNI regulation procedure or by the Autorité de sûreté nucléaire de défense (ASND) for defence facilities. The role and function of the CRP in national legislation is to provide competent advice, to supervise or to perform the implementation of the radiation protection.

RPE and RPO tasks

On the basis of the **Labour code** (occupational exposure), the PCR, appointed by the employer and under his responsibilities:

- gives advice regarding:
  - the design, modification of workplaces and safety devices; intended to prevent the risks associated with ionizing radiation;
  - the work equipment and workplace verification programs and the procedures for monitoring the individual exposure of workers;
  - the appropriate instrumentation for the verifications;
  - the procedures for classification of workers;
  - the delimitation and access conditions to the controlled and supervised areas;
  - the preparation and response to radiological emergencies;
- helps and assists regarding:
  - the risk assessment for workers;
  - the definition and implementation of the provisions relating to the measures and means of prevention in particular those concerning the definition of the dose constraints;
  - the definition and implementation of the provisions relating to the conditions of employment of workers, in particular those concerning the individual assessment of the risk of ionizing radiation provided, the individual protection and the information and training on worker safety;
  - the definition and implementation of the provisions relating to the monitoring of the individual exposure of in conjunction with the occupational physician;
  - the coordination of preventive measures relating to radiation protection;
  - the development of procedures and means for the decontamination of workplaces likely to be decontaminated;
  - the investigation and analysis of significant events;
- executes or supervises the measurements, the verification of the effectiveness of the means of prevention mentioned above.

HERCA

On the basis of the **Public health code** (public and environment exposures), the PCR, appointed by the employer and under his responsibilities:

- gives advice regarding:
  - the preliminary examination, from the point of view of radiation protection, of the plans of the installations;
  - periodic verification of the effectiveness of the internal control, procedures and technical devices;
  - the reception and control, from the point of view of radiation protection, of new or modified sources of ionizing radiation;
  - the receipt and periodic calibration of measuring instruments and the periodic verification of their correct operation and correct use;
  - optimizing radiation protection and establishing appropriate dose constraints;
  - the definition of the quality assurance system put in place;
  - the definition of the radiological monitoring program for effluents and the environment;
  - the definition of radioactive waste management methods;
  - the definition of the provisions relating to the prevention of significant events, the investigations and analyzes related to these events and the definition of corrective actions;
  - the radiological emergency preparedness and the emergency response;
  - the development of appropriate documentation, including risk assessment and written procedures;
- executes or supervises the implementation of the radiation protection measures mentioned above.

In French regulation, the undertaking can entrust the tasks of RPE/RPO to one or more full-time or part-time employees.
In the BNI's the radiation protection organization is validated by the ASN or ASND for defence facilities.

RPE and RPO education, training & retraining

An Order of 18 December 2019 amended by order of 12 November 2021, defines the E&T of the CRP.

This order provides two levels of E&T. The first level (low radiological hazards) has two fields: naturally occurring radioactive materials or artificial ionizing radiation sources. The second level (more important radiological hazards) is composed of two fields: medical or industry. In each of those fields there are two options: 1) sealed sources including electric generators and accelerators and 2) non-sealed sources. A third option (nuclear option) is requested in the industry field for the companies that intervene in the BNIs. This option is an additional option, after having the 2 previous options (sealed sources and non-sealed sources).

The training includes both a theoretical and a practical component to enable the acquisition of the required knowledges and skills.

In the CRP level 2, a reinforced E&T is mandatory for the CRPs in the external certified bodies (OCR) according to the field (medical, industry or nuclear).

The training must be renewed every five years.

The training is validated by an assessment of the candidate's acquired knowledge to carry out the missions of the radiation protection Advisor. The candidate must pass the assessment to obtain a certificate necessary to be designated as a radiation protection Advisor.

Recognition of services and experts

PCRs earn a certificate if they pass the skills assessment at the end of their training by a certified training organization.

The OCR is certified by an accredited body and composed of PCRs with a reinforced training certificate.

The « Competence poles » in the most BNI are submitted to ASN's approval or ASND for defence facilities. An Order of 28 June 2021 defines the approval's conditions.

One person recognized as a qualified expert within the meaning of Article 82 of Council Directive 2013/59/EURATOM by the competent authority of another Member State of the European Union may obtain, by equivalent, a french RPE/RPO certificate.

A certified training organization assesses the suitability of the applicant with those required for the level, sector and option requested. This assessment, conducted in French includes, a written test organized in the form of a multiple-choice questionnaire completed with open-ended and short-answer questions, and an oral interview.

In all cases, recognition in France is based on obtaining a certificate after completing training by a certified organization. The certificate is valid for a period of five years. It can be renewed by the same procedure with training and obtaining a certificate if the assessment is passed.

	Radiation Protection Expert	Radiation Protection Officer
Implementation	Yes	Yes
National terminology	Conseiller en radioprotection (CRP)	
Translation	Radiation Protection Advisor	
Role	Provide advice or supervise the compliance with legal requirements and performance of radiation protection tasks	
Types or levels	Levels, fields and options (current regulatory framework). • Level 1: - Artificial ionizing radiation sources field: a) sealed sources and ionizing radiation generators if only it leads to delimitate a supervised area. b) sealed sources and ionizing radiations generators if only it leads to delimitate a green controlled area and the access is not physically possible during the emission or ionizing radiation c) activities realized by temporary workers - Naturally occurring radioactive materials field • Level 2: for all the others activities, including all the activities of research, learn and commercialization of sources of ionizing radiation activities and ionizing radiations generators and accelerators in the associated sector: - Medical field including veterinary medicine: Option 1: "sealed sources" (x-ray generators and accelerators), Option 2: "non-sealed sources" - Industry field including carriage of sources of ionizing radiation activities: Option 1: "sealed sources" Option 2: "non-sealed sources" Option 3: "Nuclear" (Nuclear reactors, others BNI's)	
Recognition arrangements	Yes	

Germany

RPE & RPO Fact Sheet

In Germany, the legislative framework is based on assigning responsibility for radiation protection to the *Radiation Protection Executive* (SSV) and one or more designated *Radiation Protection Supervisors* (SSB). It is required that the Radiation Protection Supervisor has the requisite expertise in radiation protection as well as professional integrity and sufficient competences within the undertaking to perform the respective tasks and duties. Requirements are laid down in a number of regulatory guidelines, proportionate to the complexity and radiological risk of a practice.

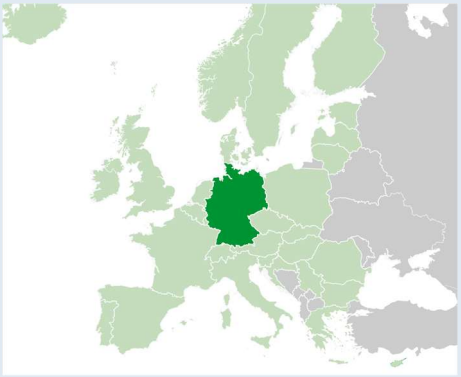
The RPE and RPO. Definition, role and function in national legislation

The new Radiation Protection Act and Ordinance are in force since 31 December 2018; they modernise the RP regulations and implement the 2013 EURATOM Basic Safety Standards (BSS) Directive. The new radiation protection law merges provisions from the Atomic Energy Act, the Radiation Protection Ordinance, the X-Ray Ordinance, and the Precautionary Radiation Protection Act.

The German concept of Radiation Protection Supervisor joins the BSS requirements for RPE and RPO by comprising both a qualification approved and recognised by the competent authority and tasks and capacity within the undertaking. The updated legislation adapted the national E&T framework in a smooth transition with challenges in the integration of practices involving natural radiation sources and the continuous need to ensure and improve quality of training when introducing new types of practice and technological developments.

The regulatory guidelines describing in detail E&T requirements for practices in different areas of radiation protection will be revised and modernised.

The Radiation Protection Executive is responsible for the compliance with the provisions of the RP legislation. He has designated one of more Radiation Protection Supervisors (SSB) with the corresponding level of expertise. The Radiation Protection Executive has to define the responsibilities of the Radiation Protection Supervisors. Radiation Protection Supervisors are recognised by the respective competent authority and may correspond to both RPE and RPO. Due to their central role for the radiation protection they enjoy extra protection against dismissal.



Country info

Capital	Berlin
Official language	German
Population	82,5 M
Area	357.376 km2
Currency	Euro (€)
Time zone	UTC +1
Calling code	+49
Internet TLD	.de

Competent Authority

Each of the 16 Federal States (Länder) has own Competent Authorities for implementing the federal regulatory requirements in radiation protection

Other authorities involved

Federal Ministry for the Environment, Nature Conservation and Nuclear Safety (BMU).

Federal Office for Radiation Protection (BfS).

Implementation of E&T requirements in

- The Radiation Protection Act
- The Radiation Protection Ordinance
- A number of Regulatory Guidelines

HERCA

RPE and RPO tasks

Possible tasks of Radiation Protection Supervisors may include the topics mentioned in the EURATOM BSS (e.g. art. 82.2, 84.2) such as plans for new installations and the acceptance into service of new or modified radiation sources in relation to any engineering controls, design features, safety features and warning devices relevant to radiation protection; categorisation of controlled and supervised areas; classification of workers; workplace and individual monitoring programmes and related personal dosimetry; appropriate radiation monitoring instrumentation; quality assurance; environmental monitoring programme; arrangements for radioactive waste management; arrangements for prevention of accidents and incidents; preparedness and response in emergency exposure situations; as well as establishing work plans; ensuring that work with radiation is carried out in accordance with the requirements of any specified procedures or local rules; supervise implementation of the programme for workplace monitoring; maintaining adequate records of all radiation sources; carrying out periodic assessments of the condition of the relevant safety and warning systems; supervise implementation of the personal monitoring and of the health surveillance programmes; providing new workers with an appropriate introduction to local rules and procedures; information and training of exposed workers. Depending on the scope of the practices, more than one Radiation Protection Supervisor has to be designated; the Radiation Protection Supervisor can also be the head of a radiation protection division.

RPE and RPO education, training & retraining

Precondition for the designation of Radiation Protection Supervisors is: personal professional integrity, competences within the undertaking to perform duties and requisite expertise in radiation protection.
Requirements for requisite expertise in radiation protection are:

1. Appropriate professional education
2. Successful completion of radiation protection courses
3. Sufficient professional experience in the relevant practice.

Details on content and length of training and experience are specified in a number of regulatory guidelines which will be revised and modernised. A graded approach has been established: the level of qualification needed and the necessary courses are dependent on the risk of the practice; a recognition is only valid within the limits of the qualification, for low-risk practices only limited radiation protection training is required.
The requisite expertise is recognized by the competent authority; retraining is mandatory every 5 years.
The competent authority can recognize relevant qualification acquired outside Germany fully or partly.

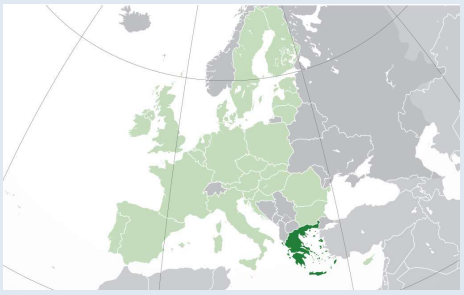
Recognition of services and experts

The competent authority verifies and recognises education, training and retraining of radiation protection supervisors. The competent authority also authorizes training courses to acquire requisite qualification.
For specific tasks, such as checking x-ray devices, accelerators, irradiation facilities and devices for gamma radiography, checking work places with exposures due to naturally occurring radioactive substances, leakage testing of sealed sources etc., independent technical experts may be appointed by the competent authority and may be consulted by the undertaking.

	Radiation Protection Expert and Radiation Protection Officer
Implementation	Yes
National terminology	Strahlenschutzbeauftragter
Translation	Radiation Protection Supervisor
Role	Planning, implementing and supervision of radiation protection tasks
Types or levels	Specific to the type and scope of the practice
Recognition arrangements	Yes

Greece

RPE & RPO Fact Sheet



Country info

Capital	Athens
Official language	Greek
Population	11 M
Area	131 957 km2
Currency	Euro (€)
Time zone	UTC +2
Calling code	+30
Internet TLD	.gr

Competent Authority

Greek Atomic Energy Commission (EEAE)

Other authorities involved

- Ministry of Education, Research and Religious Affairs
- Ministry of Health

Implementation of E&T requirements in

- A Presidential Decree to transpose the Directive articles to the national legislation
- EEAE decisions to arrange the implementation of the Decree

The RPE. Definition, role and function in national legislation

The RPE is implemented in national legislation as “Εμπειρογνώμονας Ακτινοπροστασίας” and is defined as an individual with appropriate knowledge, training and exprerience that is competent to provide advice on issues related to radiation protection in order to ensure the effective protection of individuals (i.e. occupational exposure, public exposure).

The foreseen recogniton areas of the RPE are the following:

- X-ray systems for medical applications
- Open sources and radioactive waste management – medical Applications
- Linacs and shielded sources for radiation therapy – brachytherapy
- Industrial Radiography
- Shielded sources for industrial, research and educational applications
- Open sources for industrial, research and educational applications and radioactive waste management
- Accelerators and X-ray systems for industrial, research and educational applications
- Waste Management
- NORM
- Radon

The RPE is an individual and cannot be a group of individuals. An individual could be recognised as an RPE in one or more of the above mentioned fields.

The presence of an RPE in an undertaking can be mandatory depending on the type of practices. The RPE can be an employee of the undertaking, but may also be an external consultant.The advice of an RPE is mandatory for all types of practices.

The RPO. Definition, role and function in national legislation

The RPO is implemented in national legislation as “Επόπτης Ακτινοπροστασίας” and is defined as an individual technically competent in issues related to a specific type of practice in order to supervise or carry out the application of radiation protection arrangements of a specific practice.

The RPO is an employee of the undertaking.The RPO is nominated by the employer and this nomination is approved by the Greek Atomic Energy Commission (EEAE). Employers shall provide the RPOs with the necessary means to carry out their duties.

The employer of outside workers is also required to designate an RPO as necessary to supervise or perform relevant radiation protection tasks as they relate to the protection of the outside workers.

RPE tasks

Possible tasks and topics of advice of the RPE may include the topics mentioned in the BSS (articles 82.2, 34, 37, 38, 68), such as categorisation of controlled and supervised areas, quality assurance, licensing, dose monitoring, setting up ALARA, prevention, training etc. When necessary, the RPE cooperates and liaises with the RPO and the Medical Physics Expert (MPE) in a medical centre. The RPE may be assigned the tasks of radiation protection of workers or members of the public. The RPE may also perform the tasks of the RPO.

RPO tasks

Possible tasks of the RPO may include the topics mentioned in the BSS (article 84.2), such as to ensure that work with radiation is carried out in accordance with radiation protection requirements, supervision of workplace monitoring etc. The RPO cooperates and liaises with the RPE.
The tasks of the RPO can be carried out by an internal Radiation Protection Unit or by the RPE.

The tasks of the RPE, the MPE and the RPO could be performed by the same individual.

RPE education, training & retraining

To become an RPE specific requirements should be met:

- Education: a university degree in Physical or engineering sciences
- Training: a minimum postgraduate training on specific topics related to the RPE tasks
- Experience: at least 5 years of experience
- On-the-job training (OJT): 6 months OJT as RPE under the supervision of an RPE
- Competence on providing advice and on performing safety assessments
- Ability to communicate and collaborate with other professionals

The recognition will be valid for 7 years and a re-recognition will be needed.

RPO education, training & retraining

The required level of education, training, working experience, OJT, and retraining of the RPO are proportional to the risk and complexity of the practices, which are defined as:

- Medical Applications (a. High Risk; b. Medium Risk; c. Low Risk)
- Veterinary Applications (a. High Risk; b. Low Risk)
- Industrial, Research and Educational Applications

The approval of an RPO is valid for a maximum of 7 years.

Recognition of services and experts

The competency of an individual to act as RPE will be recognized by EEAE's Board after the suggestion of a 3-members committee whose scientific profile and experience will lie upon the corresponding field of recognition. Additionally, an individual could be recognized as RPE in more than one radiation practices; however, for each practice a separate recognition will be required.

The arrangements for the recognition of the RPEs will be explicitly described within a Common Ministerial Decision and the corresponding EEAE decisions. Up to now, there is no system for mutual or bilateral recognition in place.

	Radiation Protection Expert	**Radiation Protection Officer**
Implementation	Yes	Yes
National terminology	Εμπειρογνώμονας Ακτινοπροστασίας	Επόπτης Ακτινοπροστασίας
Translation	Radiation Protection Expert	Radiation Protection Supervisor
Role	Provide advice or supervise compliance with legal requirements	Local supervision or performance of radiation protection tasks
Types or levels	Recognition in different areas: X-ray systems for medical applications / Open sources and radioactive waste management – medical Applications / Linacs and shielded sources for radiation therapy – brachytherapy / Industrial Radiography / Shielded sources for industrial, research and educational applications / Open sources for industrial, research and educational applications and radioactive waste management / Accelerators and X-ray systems for industrial, research and educational applications / Waste Management / NORM / Radon	Medical Applications (a. High Risk; b. Medium Risk; c. Low Risk) / Veterinary Applications (a. High Risk; b. Low Risk) / Industrial, Research and Educational Applications
Recognition arrangements	Yes	No

Hungary

RPE & RPO Fact Sheet

The RPE. Definition, role and function in national legislation

The RPE is implemented in national legislation as ‘sugárvédelmi szakértő’, which is a literal translation of ‘Radiation Protection Expert’. The role and function of the RPE in national legislation is to provide competent advice, or to serve, in order to ensure the compliance with legal requirements on behalf of the undertaking, in respect of occupational and public exposure.
The RPE is an individual and cannot be a group of individuals.
During the introduction and implementation of the provisions listed in Govt. decree 487/2015. (XII. 30.) Korm on the protection against ionizing radiation and the corresponding licensing, reporting (notification) and inspection system, the user of atomic energy shall take into account the advice of the radiation protection expert.
The RPE can be an employee of the undertaking, but may also be an external consultant.
RPE’s are allowed to advice all types of exposures and all fields of practices connecting fields of specialisation listed in his/her licence application form.
Professional knowledge, education conditions and professional practice required for RPE are stipulated in Govt. decree 487/2015. (XII. 30.) Korm. The requirements for RPE are under revision at the moment.

The RPO. Definition, role and function in national legislation

The RPO is implemented in national legislation as ‘sugárvédelmi megbízott’, which can be translated as ‘Radiation Protection Officer’. The Radiation Protection Officer is an individual who is assigned by the licensee for performing radiation protection tasks and keeping contact with the competent authority. The RPO is an employee of the undertaking. The role and function of the RPO is to supervise, in some cases to perform the implementation of the radiation protection arrangements for a given type of practice in the undertaking. The undertaking is required to provide adequate education, training and retraining in the field of radiation protection, specific for the type of practice.
The licensee can employ an outside worker in a controlled area only on the basis of the contract bound with the employer of the outside worker. During its radiation hazardous work the outside worker shall be provided with the same protection as it is provided to the own workers by the licensee. But the employer of outside workers is not required to designate an RPO. The RPO is mandatory for all types of practices. There are no different types of RPO, but the scope of the tasks of the RPO depends on the nature of the practice, the radiation hazardous workplace and the operated equipment.

Country info

Capital	Budapest
Official language	Hungarian
Population	9.8 M
Area	93030 km2
Currency	HUF (Ft)
Time zone	UTC + 1
Calling code	36
Internet TLD	.hu

Competent Authority

HAEA (Hungarian Atomic Energy Authority), resorting under the Ministry of National Development

Other authorities involved

Ministry of Human Capacities (Min HC) for medical exposures and Medical Physics Experts

Implementation of E&T requirements in

Govt. decree 487/2015. (XII. 30.) Korm. on the protection against ionizing radiation and the corresponding licensing, reporting (notification) and inspection system

RPE tasks

Possible tasks and topics of advice of the RPE may include the topics mentioned in the BSS (articles 82.2, 34, 37, 38, 68), such as categorisation of controlled and supervised areas, quality assurance, licensing, dose monitoring, setting up ALARA, prevention, training etc. When necessary, the RPE cooperates with and liaises with the RPO and the Medical Physics Expert (MPE). The RPE may be assigned the tasks of radiation protection of workers or members of the public. The RPE may also perform the tasks of an RPO.

RPO tasks

Possible tasks of the RPO may include the topics mentioned in the BSS (article 84.2), such as to ensure that work with radiation is carried out in accordance with radiation protection requirements, supervision of workplace monitoring etc. The RPO cooperates and liaises with the RPE.
If more users of atomic energy perform practices within one site, then a site radiation protection service (radiation protection unit in article 84.3) can be established for the harmonization of the tasks of RPOs, the detailed rules of its operation shall be described in the Workplace Radiation Protection Rules (WRPR).
Tasks of RPO are assigned to a full time or parttime employee.

RPE education, training & retraining

The radiation protection qualification training courses (basic, extended and comprehensive level as stipluated by the Govt. decree 487/2015. (XII. 30.) Korm) are taught at training centers such as universities or private institutions that are licensed by the HAEA.
The HAEA shall license the conduct of radiation protection expert activity too. At least comprehensive level radiation protection qualification shall be obtained by those, who work as radiation protection experts. Each radiation protection qualification is valid for five years after the successful passing of the exam. The qualification shall be renewed prior to the end of the validity period.
Professional knowledge (dose quantities, dosimetry, effect of ionizing radiation to organism, radiation safety norms, etc.), education conditions (BSc or MSc level engineers, physicist, chemist,etc.) and professional practice (analysis, planning, emergency preparedness, regulatory, radiation health activity in the area of radiation protection) required for RPE are laying down in Annex 9 to Govt. decree 487/2015. (XII. 30.) Korm., but at this moment the qualification of RPE is under modification.

RPO education, training & retraining

The radiation protection qualification training courses (basic, extended and comprehensive level) are taught at training centers such as universities or private institutions that are licensed by the HAEA.
The RPO and his/her deputy shall have comprehensive level radiation protection qualification in the case of special facilities and practices belonging to radiation protection category I, or extended level radiation protection qualification in the case of practices belonging to radiation protection categories II and III.
Each radiation protection qualification is valid for five years after the successful passing of the exam. The qualification shall be renewed prior to the end of the validity period.
The amount of working experience to become an RPO is not specified in regulations.

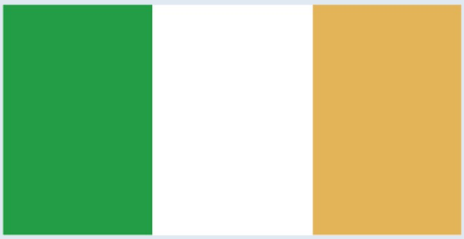
Recognition of services and experts

In general, services and experts are formally recognised when their registration in a central register is accepted by the responsible authority. For acceptance in the central register, services and experts must comply with acceptance criteria.
The central register for the formal recognition of occupational health services is kept by the Ministry of Human Capacities. In Hungary there is no education, or training for MPE yet, but for clinical radiophysicist. Recognition of the RPO is not required. For the first registration as an RPE in the central register a license issued by HAEA is necessary. The license application shall demonstrate the compliance with the relevant requirements of RPE. After 5 years the RPE is required to re-licensed by HAEA. The new licence, and the re-registration is again valid for 5 years.
There is no system for mutual or bilateral recognition in place. RPEs from other member states can apply for registration via a special recognition procedure, by showing the HAEA that their qualifications are equal to the formal recognition requirements. If necessary, the HAEA may require the RPE to undergo additional training or passing an admission exam.

	Radiation Protection Expert	**Radiation Protection Officer**
Implementation	Partly yes	Yes
National terminology	sugárvédelmi szakértő	sugárvédelmi megbízott
Translation	Radiation Protection Expert	Radiation Protection Officer
Role	Provide advice or supervise the compliance with legal requirements	Supervision and in some cases performance of radiation protection tasks and keep contact with the competent authority
Types or levels	One level, but different types of professional knowledge.	Depends on the nature of the practice, the radiation hazardous workplace and the operated equipment
Recognition arrangements	Yes	No

Ireland

RPE & RPO Fact Sheet



The RPE. Definition, role and function in national legislation

The RPE is implemented in national legislation as the "Radiation Protection Adviser" and is defined as an individual or a body, having the knowledge, training and experience needed to give radiation protection advice in order to ensure the effective protection of workers and members of the public, which meets such criteria of competence as may from time to time be specified in writing by the Competent Authority (CA).

All undertakings are required under the legislation to consult with an approved RPE within their area of competence and must provide the RPA with access, adequate information and facilities for the discharge of his or her functions. They are also required to devise and submit to the CA, as part of a licence application, renewal or amendment, the agreed arrangements with the named RPE detailing the provisions that are in place to meet the requirements of the regulations.

The RPE can be an employee of the undertaking or an external consultant.

Currently, there are two categories of RPE:

Category 1 – Medical, Dental, Chiropractic and Veterinary practices

Category 2 – Industrial and Educational practices

The RPO. Definition, role and function in national legislation

The RPO is defined in national legislation as 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.

The radiation protection officer must report directly to the undertaking and be provided with adequate information and facilities for them to discharge their functions.

The CA shall determine in which practices the designation of a radiation protection officer is necessary to supervise or to perform radiation protection tasks within an undertaking.

The CA may require employers of outside workers to designate a radiation protection officer as necessary to supervise or perform relevant radiation protection tasks as they relate to the protection of their workers.

Country info

Capital	Dublin
Official language	Irish, English
Population	4.8 M
Area	70,273 km2
Currency	Euro (€)
Time zone	UTC + 1
Calling code	353
Internet TLD	.ie

Competent Authority

Environmental Protection Agency reporting under the Department of Communications, Climate Action and Environment.

Other authorities involved

Health Information and Quality Authority reporting under the Department of Health

Implementation of E&T requirements in

- Radiological Protection Act 1991 (Ionising Radiation)
- Regulations 2019
- Statutory Instrument No. 30 of 2019

HERCA

RPE tasks

The tasks of the RPE include those mentioned in Council Directive 2013/59/EURATOM Articles 34 and 82.2.
The RPE must liaise with the medical physics expert where appropriate.
The tasks of the RPO may also be carried out by a RPE

RPO tasks

The tasks of the RPO may include those mentioned in Council Directive 2013/59/EURATOM Article 84.2.
The tasks of the RPO may be be carried out by a radiation protection unit established within an undertaking or by the RPE.

RPE education, training & retraining

The legislation requires that the CA establishes criteria for the approval of RPE's.

In practice, prospective RPE's must demonstrate to the Competent Authority that they have:
1. The training, knowledge and experience of radiation protection based on the Basic Syllabus for the Qualified Expert as set out in paragraph 2 of Annex 1 of the Official Journal of the European Communities C133; 30.04.98. Category 2 RPA's must also demonstrate their competence in additional areas from paragraphs 3-4 of this document.
2. A degree or equivalent qualification in a physical science (Cat. 1)
3. The equivalent of seven years full time experience in a post directly concerned with radiation protection practice (Cat. 1).
4. The ability to advise the licensee on the implementation of relevant regulatory requirements and radiation protection practices for work involving potential for significant exposure to radiation.
Prospective RPE's must also show that they have undergone a period of mentoring by an existing approved RPE and they must have accrued at least 5 CPD points per year in relation to radiation protection for the three years prior to their application.

RPO education, training and retraining

Under the legislation, the CA is required to set out the minimum training requirements for RPO's.

Recognition of services and experts

The legislation requires that the CA establishes and maintains a register containing the names of approved RPE's.
Applications for approval to act as an RPE are assessed by an RPE Assessment Committee. The Assessment Committee consists of an external chair person, two independent assessors with extensive experience in radiation protection and senior scientific staff of the CA.
Approval will normally remain valid for five years. Approval is recognition of core competence in radiation protection practice. It does not imply suitability to act as RPE for a particular undertaking and it remains the responsibility of the undertaking to ensure that a person appointed is suitable for the practice(s) in which they are engaged.
The legislation also requires that the CA removes the name of a person from the register where the CA is of the view that such person no longer meets the required criteria.
There is no system for mutual or bilateral recognition in place.
There is no legislative requirement or sytem in place for the recognition of RPO's.

	Radiation Protection Expert	Radiation Protection Officer
Implementation	Yes	Yes
National terminology	Radiation Protection Adviser	Radiation Protection Officer
Translation	N/A	N/A
Role	Provide radiation protection advice in order to ensure the effective protection of workers/members of public.	Supervise or perform the implementation of radiation protection arrangements
Types or levels	Category I – Medical, Dental, Chiropractic, Veterinary Category II – Industrial, Educational	N/A
Recognition arrangements	Yes	No

Italy

RPE & RPO Fact Sheet

The RPE. Definition, role and function in national legislation

The RPE is implemented in the Italian national legislation as "*Esperto di radioprotezione*". The RPE is an individual who has the knowledge, training and experience needed to give radiation protection advice in order to ensure the effective protection of the workers and the individuals, and whose competence is recognised by the competent authority.

All the activity involved radioactive sources needed the RPE's expertise. The role and function of the RPE in national legislation is to perform specific tasks for health physics with regards to occupationally exposed workers and public exposure, to determine safety measures and to approve projects, instructions and risk assessments. All the activities that involve ionizing radiation (health application as radiotherapy, nuclear medicine, transport of radiation sources, Radon exposures and NORM activities, Nuclear Power plants, decommissioning and so on) have to employ an internal or external recognized RPE. The advice of an RPE is mandatory for all practices. For the practices with ionizing radiation, it is mandatory to choose an RPE in the graded approach.

At the present, three RPE-levels are implemented: three tasks for different sources (I-level RPE expert, II-level RPE expert and III-level RPE expert (of which specialised for medical applications or for all other applications). The qualification of the first level provides the physical surveillance of radioactive sources and for radiological devices that accelerate electrons with maximum voltage applied to the tube less than 400 kV. The qualification of the second level provides the physical surveillance of sources constituted by x-ray machines with accelerated electrons with energy between 400 keV and 10 MeV, radioactive materials, neutron sources whose average production, over time and over the entire solid angle, is not greater than 10^4 neutrons per second and, finally Radon and NORM. The qualification for III-level healthcare RPE provides the physical surveillance of radiation sources that are not included in the I-level RPE and II-level RPE which are used exclusively for medical purposes and, in particular, for all the accelerators with energy greater 10 MeV, radioactive sources with activity reported in national framework and neutron sources whose average production over time and over the entire solid angle is greater than 10^4 neutrons per second. The qualification for III-level RPE for the physical surveillance of radiation sources in the: nuclear power plants, subcritical nuclear plants, spent fuel management systems, nuclear research facilities, nuclear plants for the treatment of irradiated fuels, preparation and manufacturing plants for the special fissile materials and nuclear fuel.

In general, the higher RPE-level (both III-level for medical applications and III-level) means that the requirements for undertakings that have a more complex license and/or require a higher level for radiation protection. The III-level RPE is able to carry out all practices with ionizing radiation. The RPE III-level must be already recognized as I-level RPE, II-level RPE and III-level RPE for medical application. The III-level RPEs can perform all radioprotection advices and all activity involved radioactivity tasks.

The RPO. Definition, role and function in national legislation

The RPO is implemented in the national legislation as *occupational worker designed by employer and RPE*. The roles and duties of the RPOs are exclusively executive tasks to perform the radiation protection arrangements for a given type of practice in the undertaking. The RPO is appointed by employer, in accordance with RPE. The employer and RPE require that RPO have adequate education, training and retraining in specific tasks of radiation protection in order to perform the activities assigned. The activity carried out by RPO are under RPE's responsibility. There aren't specific figures of RPOs, but the employer and RPE evaluate the work experience in a specific type of practice and the training level which is linked to the associated risks of the practice where the worker is involved. The graded approach is required for specific working situations.

RPE tasks

Possible tasks and topics of advice of the RPE include the topics mentioned in the BSS (articles 34, 35, 36, 37, 38, 39, 40, 68, 82), such as categorisation of controlled and supervised areas, quality assurance, support in obtaining licenses, dose monitoring, setting up ALARA, prevention, training etc. When

RPO tasks

The Tasks, assigned to responsibility of the RPE. Possible tasks of the RPO (see article 84.2) to ensure accordance with the require

Country info

Capital	Rome
Official language	IT
Population	58 815 463
Area	30.528 km2
Currency	Euro (€)
Time zone	UTC +1, UTC +2
Calling code	39
Internet TLD	.it

Competent Authority

National Inspectorate for Nuclear Safety and Radiation Protection (ISIN)

Other authorities involved

Minister of the Environment and Energy Safety

Minister of domestic affairs;

Minister of Labour and Social Policies

Minister of Health

Implementation of E&T requirements in

- Laws
- Council Directives
- Ministerial decrees
- Legislative decrees

necessary, the RPE cooperates with the Medical Physics Expert and supervises the activities assigned to the RPO.

The task of RPO can be carried out by a RPE, but the tasks of the RPE cannot be carried out by a RPO, in particular the radiation protection assessments must be the exclusive responsibility of the RPE.

RPE education, training & retraining

The educational level required to an RPE is specified in legislative framework (bachelor in scientific subject: physic, engineering, chemistry and I level master in radioprotection for I level RPE; master degree in physics, engineering, chemistry and II level master in radioprotection for II and III level RPE). The training requirements to be qualified as RPE include theoretical courses on radiation protection, technology and nuclear safety (level of knowledge/number of hours depending on type of RPE accreditation) and practical experience as RPE trainee. Specific training courses are available for the different RPE types. The RPE-training courses are taught at training centres such as universities and recognized association of radioprotection (AIFM, AIRO, ANPEQ and so on). The subjects and the number of hours of theoretical training are listed in the legislation. The amount of working experience to become RPE is specified in the regulations. Retraining of the RPE (basic and high level) is regulated and documented through the formal recognition requirements.

RPO education, training & retraining

A specific training course is required for the workers chosen as RPOs. The RPOs are trained on the job by RPEs. The required level of training, is proportional to the risk and complexity of the practices. There is no specific educational entrance level for the RPO-training. The level of training depends on the type of practice. The RPE needs to approve the training programme of the RPO to make sure that the level of knowledge is in accordance to the risks present in the installation. The amount of working experience to become an RPO is not specified in regulations. Retraining of the RPO is provided and documented by the undertaking and the requirements are in line with the risks present in the installation.

Recognition of the experts

The formal RPEs and MPEs recognition is kept by different authorities. The RPEs have a personal accreditation in order to perform the specific tasks. This accreditation of RPEs is granted by a commission made up of members coming from different ministries who represent various functions of the Italian government: two member of Ministry of Labor and Social Policies, one member of the Ministry of Health, one member of the Institute of Health, one member of the Inspectorate of Labor, one member of the University, two members of the ISIN, the regulatory body for Nuclear Safety and Radiation Protection. This commission can be limited in scope, based on the level of knowledge, skills and experience of the candidate. The level of required expertise should be commensurate to the associated risk of the practice. The accreditation criteria are defined in the framework. There is a list of RPEs at the Ministry of Labor and Social Policies which can be consulted online. This list indicates the level of recognition of each RPE. The qualification as RPE is defined with the ministerial exam and it is valid forever but it is necessary to attend 60 hours professional training course every three years to keep the qualification. For the RPOs is not required recognition and reregistration. The postgraduate University specialization is the system for accreditation as MPE.

RPEs from other member states must apply for recognition procedure reported in the Italian framework.

	Radiation Protection Expert	**Radiation Protection Officer**
Implementation	Yes	Yes
National terminology	Esperto di Radioprotezione (EdR)	Addetto alla radioprotezione operativa (RPO)
Translation	Radio Protection Expert	Radiation Protection Agent
Role	Perform specific 'high-level' tasks in different domain with radioactive sources	Local supervision or performance of radiation protection tasks in the workplace
Types or levels	I-level Radio Protection expert (X-ray machine) II-level Radio Protection expert (Accelerator and radioactive sources, Radon and NORM) III-level Radio Protection expert in health physics III-level Radio Protection expert (Nuclear Plant)	Specific to the practice (graded approach)
Recognition arrangements	Yes	No

Latvia

RPE & RPO Fact Sheet

The RPE. Definition, role and function in national legislation

RPE is defined in Regulations as a person who has completed an appropriate training course program and who has the necessary knowledge and experience to provide advice on issues related to protection against ionizing radiation in order to ensure effective protection of people.
Role and function of RPE is to provide advice, to assess probability and magnitude of the potential exposure, to prepare safety assessment of activities and facilities for applicant to submit in support of application for authorization, and to carry out workplace monitoring.
RPE is an individual and cannot be a group of individuals. RPE can be an employee of the undertaking, as well as an external consultant.
RPE is recognised based on his or her qualification and experience in the relevant field (medical exposure or non-medical exposure) and more specifically experience with radioactive materials of different radioactivity (high, medium, low) or experience with x-ray equipment (diagnostic radiology, radiotherapy, accelerators, industrial radiography, non-medical human imaging etc). RPE is recognised for carrying out activities that include overall safety assessment, workplace monitoring and other measurements, as well as consulting about transport, waste management etc. Therefore RPE is a specialized expert.
Involvement of RPE as a part of Radiation Protection Unit is mandatory for higher risk and more complicated activities and facilities that are listed in Regulations. However, requirement for safety assessment to be carried out by RPE is applicable to all the activities and facilities. Workplace monitoring can be carried out by an accredited institution or laboratory, as well as by RPE or RPO.

The RPO. Definition, role and function in national legislation

RPO is defined in legislative system as “Darbu vadītājs” which can be translated as “Work Manager/Supervisor”. RPO is defined in Law as a person who is competent in matters regarding protection against ionizing radiation in activities with sources of ionizing radiation, as well as in supervision and implementation of the radiation protection measures. The RPO is an employee of the undertaking appointed by the owner or manager of the undertaking.
Requirements for the undertaking to ensure that RPO has adequate education, qualification, experience, training and retraining in the field of radiation protection are set out in Regulations. Requirements are practice specific - for medical applications (radiotherapy, nuclear medicine, diagnostic radiology, dentistry), industrial applications, veterinary applications. Employment of RPO is mandatory for all types of practices, however, requirements for qualification and training of RPO are commensurate with the risks associated with practice.

Country info

Capital	Riga
Official language	Latvian
Population	1,902 M
Area	64 589 km2
Currency	Euro (€)
Time zone	UTC + 2
Calling code	+371
Internet TLD	.lv

Competent Authority

RSC SES (Radiation Safety Centre of State Environmental Service), residing under MEPRD (Ministry of Environmental Protection and Regional Development)

Other authorities involved

Ministry of Environmental Protection and Regional Development (responsible for radiation safety and nuclear safety policy in the State, legislation development).

Implementation of E&T requirements in

- Law of Radiation Safety and Nuclear Safety
- Cabinet Regulations No 65 “Regulations on Notification, Registration and Licensing of Activities with Ionizing Radiation Sources”
- Cabinet Regulations No 433 “Regulations on Radiation Protection Experts and Medical Physics Experts”
- Cabinet Regulations No 482 “Regulations for Protection against Ionising Radiation in Medical Exposure”

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RPE tasks

Areas of competence of RPE to provide advice to applicants and authorized parties are fully in accordance with BSS requirements.
RPE must interact with MPE as prescribed in regulations.
RPE can perform tasks of RPO depending on the legal relation with authorized party and if appointed as the RPO.
Carrying out prior risk (safety) assessment of activities and facilities is set out to be the responsibility of RPE, as well as, approving the plan of premises, in addition RPE can carry out workplace monitoring.

RPO tasks

Tasks and activities of RPO prescribed in the Law and Regulations cover the activities and functions of RPO set out in BSS. One of the main responsibilities of the RPO is to ensure that employees are adequately trained to take protective measures, to know of the circumstances and regulatory requirements, and are informed of the potential risks. RPO does liaise with RPE.
Tasks of RPO can be carried out by RPE if the legal relation of RPE with authorized party include these responsibilities.
There is no provision in Regulations for requiring the tasks of RPO to be assigned to a full time or part-time employee, therefore it depends on the authorized party`s decision.

RPE education, training & retraining

Educational and experience level of RPE is prescribed in the Regulations. Requirements for competence of RPE in specific field or activity, as well as requirements for re-certification of RPE after 5 years are in place.
There is no provision for specific requirements regarding the training or retraining of RPE, however, there is requirement for all the workers to attend training on radiation protection and there is requirement for the training programme to be recognised by competent authority.
Several Universities provide training on radiation protection for different types of practices (medical, industrial, veterinary). In 2017 guidelines on the curriculum of radiation protection training was developed and RSC reviewed all the training programmes accordingly.
List of recognised training institutions as well as list of RPEs is available on our webpage.

RPO education, training & retraining

Practice specific requirements for RPO are set out in regulations to prescribe the educational level, experience level and training for RPO. In 2021 it was included in Regulations in addition to previous requirements that an assistant radiologist with experience of at least 7 years can be appointed as RPO; and for less activities with less risk there is no longer a requirement for previous experience with ionizing radiation sources.
Several Universities provide training on radiation protection for different types of practices. For RPO specific training requirements are in place, as the content of training programme is more detailed as for all other workers.
Re-training on radiation protection is required once in 5 years.

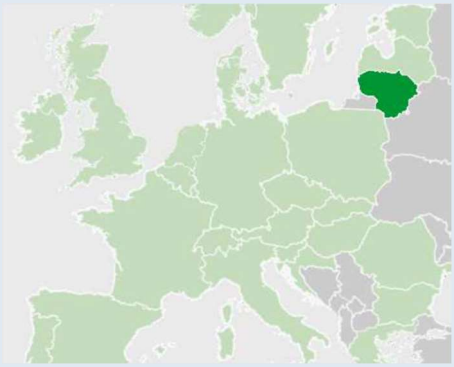
Recognition of services and experts

Recognition of RPEs is carried out by RSC while recognition of technical services (dosimetry, quality control of medical x-ray equipment, workplace monitoring) is carried out by Latvian National Accreditation Bureau. In recognition of MPE the same requirements and recognition system as for RPEs is applied. Recognition of RPO is not required (fulfilment of requirements is checked in the authorization process as well as during inspections).
Application for RPE status is reviewed and assessed and certificate is issued by RSC - if necessary, in consultation with institutions involved in the particular area, professional associations, societies, foundations, educational institutions or scientific institutions.
Requirements for educational level and experience level are set out in regulations, in addition detailed description of experience and performed activities that includes list of prepared documents and projects applicant has been involved in has to be submitted. Evidence of training is required. In 2021, the requirement of experience was changed to require 13, 10, or 7 years of general experience in working with ionizing radiation sources for candidates with bachelor, masters of PhD degree respectively and 7, 5, 3 years of experience in respective area that candidate requests the certificate. Application form and guidance for receiving RPE status in specific field and activity is published on our webpage.
System for mutual or bilateral recognition is currently not in place.

	Radiation Protection Expert	**Radiation Protection Officer**
Implementation	Yes	Yes
National terminology	Radiācijas drošības eksperts	Darbu vadītājs
Translation	Radiation Protection Expert	Work manager/supervisor
Role	Provide advice, carry out assessment of activities and facilities, perform workplace monitoring	Locally supervise radiation safety and control compliance with legislative and regulatory requirements
Types or levels	Radiation Protection Expert	
Recognition arrangements	Medical Physics Expert	Depending of the type of the relevant activity or facility to be supervised (medical applications, dentistry, veterinary applications, industrial radiography)

Lithuania

RPE & RPO Fact Sheet



The RPE. Definition, role and function in national legislation

The RPE is implemented in national legislation as 'Radiacinės saugos ekspertas' (RSE), which is a literal translation of 'Radiation Protection Expert'.
'Radiacinės saugos ekspertas' is defined as an individual which has the knowledge, training and experience needed to advice and consult on radiation protection in order to ensure the effective protection of members of the public and the environment against ionizing radiation and whose competence in this respect is recognised by the competent authority.
The RPEs in national legislation are divided into two main groups (according to the fields of practice):

- RPE in the field of nuclear energy (recognized by special commission headed by VATESI);
- RPE in medicine (x-ray diagnostics, therapy or nuclear medicine), veterinary, science and education or industry (recognized by special commission headed by RSC).

No RPE levels or types are implemented at the moment.
There is a list of topics set in legislation indicating the need for authorized person to consult with or seek advice of RPE. All authorised persons may need such consultation or advice while being involved with the practice.
The RPE can be an employee of the undertaking, but may also be an external consultant.
The RPE can advise and supervise only those fields of practice in which he is recognized by the competent authority (specialized expert). However, one individual can be recognized in few different fields of practise (e.g., in medicine (X-ray diagnostics) and veterinary).

The RPO. Definition, role and function in national legislation

The RPO is implemented in national legislation as 'Asmuo, atsakingas už radiacinę saugą', which can be translated as 'the Person Responsible for Radiation Protection'.
'Asmuo, atsakingas už radiacinę saugą' is defined as an individual who has knowledge and technical competence in radiation protection field and who is assigned to supervise or implement radiation protection tasks at the undertaking.
The RPO is an employee of the undertaking if undertaking holds licence. If practice of undertaking is registered, undertaking may designate a person who has no employment relationship with that undertaking to perform the functions of a RPO.
The undertaking is required to ensure that RPO has acquired adequate education, training and retraining in the field of radiation protection, specific for the type of practice. The employer of outside workers is also required to designate an RPO as necessary to supervise or perform relevant radiation protection tasks as they relate to the protection of their workers.
The RPO is mandatory for all types of practices.
If RPO has appropriate education and training he can be designated for different practices (comprehensive). No types of RPO are implemented in national legislation.

Country info

Capital	Vilnius
Official language	Lithuanian
Population	2,8 M
Area	65 300 km2
Currency	Euro (€)
Time zone	UTC + 2
Calling code	370
Internet TLD	.lt

Competent Authority

- RSC (Radiation Protection Centre)
- VATESI (State Nuclear Power Safety Inspectorate)

Other authorities involved

None

Implementation of E&T requirements in

- Radiacinės saugos įstatymas (Law on Radiation Protection).
- Branduolinės energetikos srities veiklą su jonizuojančiosios spinduliuotės šaltiniais vykdančių darbuotojų ir asmenų, atsakingų už radiacinę saugą, privalomojo radiacinės saugos mokymo, žinių patikrinimo, instruktavimo ir fizinių asmenų, siekiančių įgyti teisę mokyti radiacinės saugos, atestavimo tvarkos aprašas (Arrangements in place for the Workers and RPOs working in Nuclear Energy field mandatory Radiation Protection training, knowledge testing, instruction and Certification of individuals performing Radiation Protection Training).
- Radiacinės ir radioaktyviųjų šaltinių fizinės saugos mokymo ir instruktavimo tvarkos aprašas (Arrangements in place for the Radiation Protection and Physical Security of radioactive sources training and instruction).

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RPE tasks

Possible tasks and topics of advice of the RPE may include the topics mentioned in the BSS (articles 82.2, 34, 37, 38, 68), such as categorisation of controlled and supervised areas, quality assurance, licensing, dose monitoring, setting up ALARA, prevention, training etc. When necessary, it is mandatory that the RPE cooperates with the RPO and the Medical Physics Expert in a medical facility. The RPE may be assigned the tasks of radiation protection of workers or members of the public.
The RPE may also perform the tasks of an RPO.

RPO tasks

Possible tasks of the RPO may include the topics mentioned in the BSS (article 84.2), such as to ensure that work with radiation is carried out in accordance with radiation protection requirements, supervision of workplace monitoring etc. The RPO cooperates and liaises with the RPE. The task of RPO can be carried out by a Radiation Protection Unit or RPE.

RPE education, training & retraining

No training or courses are designated for RPE preparation, but all international and local training courses, fellowships, etc. are estimated during recognition process to evaluate competence, knowledge and skills for an individual seeking became a RPE.
It is mandatory to have 5 years practical work experience in the field of practice in which an individual wants to be recognized as a RPE.
The list of recognised RPE is announced on the website of Competent Authority.

RPO education, training & retraining

Individuals must undergo radiation protection courses in private institutions, if they want become RPO. Private institutions, which perform radiation protection courses, must have training program verified by Competent Authority.
There is specific educational entrance level for the RPO-training, which is determined in national legislation for each type of practice.
The amount of working experience to become an RPO is not specified in regulations.
Radiation protection courses must be repeated once per 5 years.

Recognition of the experts

Arrangements in place for the recognition of RPE performed as follows:
1. An individual submits free form application of recognition and the documents required for recognition upon arrival at the Competent Authority, by post or e-mail.
2. If all documents required for recognition are formulated properly, these documents are forwarded to the Commission for the Recognition of Natural Persons seeking to become Radiation Protection Experts.
3. If Commission suggests, an individual seeking to become RPE, recognise as RPE, Competent Authority issues RPE certificate on Licence Information System (RSC) or RPE certificate is issued by Competent Authority (VATESI).
4. Lists of recognized RPEs are published on official Competent Authority website.
An individual seeking to become RPE must submit to Competent Authority these documents: a free-form application, a copy of a document certifying education, which is recognized in the Republic of Lithuania in accordance with the laws of the Republic of Lithuania, copies of the documents (certificates and etc.) certifying the knowledge, skills and competences in the field of radiation protection for which recognition is requested, document proving 5 years practical work experience in the field of radiation protection for which recognition is requested.
Recognised RPE is obliged to rise and improve his qualification and submit documents proving this to Competent Authority once per 5 years for re-evaluation of the RPE status.
If an individual has document issued by other EU member Competent Authority, which recognise his as RPE, he is recognised as RPE in Lithuania.

Recognition of the RPO is not required.

	Radiation Protection Expert	Radiation Protection Officer
Implementation	Yes	Yes
National terminology	Radiacinės saugos ekspertas (RPE)	Asmuo, atsakingas už radiacinę saugą (RPO)
Translation	Radiation Protection Expert	Person Responsible for Radiation Protection
Role	Advice and consult on radiation protection in order to ensure the effective protection of members of the public and the environment against ionizing radiation	Local supervision or performance of radiation protection tasks
Types or levels	None	None
Recognition arrangements	Yes	No

Luxembourg

RPE & RPO Fact Sheet

The RPE. Definition, role and function in national legislation

The RPE is implemented in the national legislation as 'expert en radioprotection', which is the literal translation of 'Radiation Protection Expert'. The role and the fonction is an exact transposition of the provisions from the BSS, including to advice undertakings on radiation safety matters, to perform risk assessments and receptions of equipements and practises.

The RPE is an individual and cannot be a group of individuals. The RPE can be external or an employee of the undertaking. The latter is mandatory for dosimetry services.

The advice of an RPE is mandatory for class I facilities and class II facilities involving medical exposures. Other facilities can seek advice at an RPE or an RPO with higher training requirements. For class III involving a very small risk (no open source and no detectable exposure), the advice is not mandatory.

RPE's are allowed to advice or supervise all types of exposures and all fields of practices.

The RPO. Definition, role and function in national legislation

The RPO is implemented in the national legislation as 'personne chargée de la radioprotection', which can be translated as 'Radiation Protection Officer'. The role and function of the RPO is both to supervise and/or to perform the implementation of the radiation protection arrangements for a given type of practice in the undertaking.

The RPO is an employee of the undertaking. The undertaking is required to provide adequate education, training and retraining in the field of radiation protection, specific for the type of practice. The RPO reports directly to the top manager of the undertaking (license holder). In class I and II facilities the RPO needs to be granted independance from the department carrying out the practise.

The employer of outside workers is also required to designate an RPO as necessary to supervise or perform relevant radiation protection tasks as they relate to the protection of their workers. The RPO is mandatory for all types of practices. There is one type of RPO, with however different requirements in training.

Country info

Capital	Luxembourg
Official language	Luxembourgish, French, German
Population	0,6 M
Area	2586 km^2
Currency	EURO (€)
Time zone	UTC + 1
Calling code	+352
Internet TLD	.lu

Competent Authority

Ministry of Health – Radiation Protection Department (DRP)

Other authorities involved

Ministry for Higher Education

Implementation of E&T requirements in

- Loi du 28 mai 2019 relative à la radioprotection (Radiation protection Law)
- Règlement grand-ducal du 1er août 2019 relatif à la radioprotection (Radiation protection regulation)

HERCA

RPE tasks

Possible tasks and topics of advice of the RPE may include the topics mentioned in the BSS (articles 82.2, 34, 37, 38, 68), such as categorisation of controlled and supervised areas, quality assurance, licensing, dose monitoring, setting up ALARA, prevention, training etc. When necessary, the RPE cooperates with and liaises with the RPO and the Medical Physics Expert in a medical centre. The RPE may be assigned the tasks of radiation protection of workers or members of the public. The RPE may also perform the tasks of an RPO.

RPO tasks

Possible tasks of the RPO may include the topics mentioned in the BSS (article 84.2), such as to ensure that work with radiation is carried out in accordance with radiation protection requirements, supervision of workplace monitoring etc. The RPO cooperates and liaises with the RPE.

The task of RPO can be carried out by a Radiation Protection Unit or an RPE.

RPE education, training & retraining

The legislation requires RPE-basic training consisting either of a master in radiation protection, or a bachelor diploma with an additional specific RPE-training of at least 120 hours in a training center. The training center needs to be recognized by the competent authority of the EU member state where the training is performed. There is no such training center in Luxembourg.

Working experience is not requested in regulations.

Retraining is regulated consisting of a minimum of 40 hours per 5 year period. It needs to be documented by the RPE.

RPO education, training & retraining

The legislation defines the content and duration for the initial RPO-training course. The training is taught at accredited training centers, private or public institutions. Passing the exam results in the required diploma to become an RPO. The required level of training, compentences and learning outcomes of the RPO are proportional to the risk and complexity of the practices, which are the class I, class II and class III facilities and medical applications. The legislation also defines learning outcomes for RPO's which can act as RPE in some defined cases.

There is no specific educational entrance level for the RPO-training.

The amount of working experience to become an RPO is not specified in regulations.

Retraining of the RPO is defined in regulation (duration per 5 years period and content) and documented by the undertaking.

Recognition of services and experts

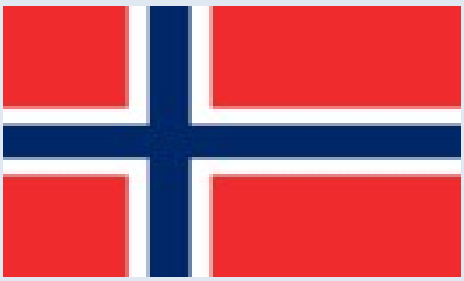
The RPE is regulated as a profession. The Minister of Health is responsible for the recognition of the RPE. A Commission composed of representatives from the Ministry of Health the Radiation Protection Department and the Ministry for Higher Education assesses the applications. The recognition requirements include the qualifications, requirements concerning health and honorabiliy as well as an adequate linguistic knowledge. The EU regulations for recognitions of professions from other EU member states apply. The recognition can be withdraw if legal obligations are not met.

The RPO is nomminated by the undertaking. The qualifications of the RPO need to be provided with license applications for any practise. The undertaking has to notify any change of the RPO.

	Radiation Protection Expert	**Radiation Protection Officer**
Implementation	Yes	Yes
National terminology	Expert en Radioprotection (ERP)	Personne chargée de la radioprotection (PCR)
Translation	Radiation Protection Expert	Person in charge of radiation protection
Role	Provide advice or supervise the compliance with legal requirements	Local supervision or performance of radiation protection tasks
Types or levels	One Level	1) Class I 2) Class II – medical applications 3) Class II – other 4) Class III 5) Class II - other and Class III consultant
Recognition arrangements	Yes	Accepted through licensing of undertaking

Norway

RPE & RPO Fact Sheet



The RPE/RPO. Definition, role and function in national legislation

In the Norwegian RP regulation the role and function of the RPE and RPO is combined in a role called the radition protection coordinator (RPC). The responsibility and functions of RPC is stated in the RP regulations, section 17:

Section 17 Radiation protection coordinator

Undertakings, subject to authorization under section 9 or 10 or registration under section 13, shall have a radiation protection system.
The undertaking shall designate one or more radiation protection coordinators who shall be able to:
a) Guide the employees regarding the safe use of the radiation sources as well as the use of protective and measuring equipment, and
b) Perform or order measurements and assessments to determine radiation doses.

This applies also to undertakings that use or install strong non-ionising radiation sources.

The radiation protection coordinator shall work to ensure that the undertaking meets the requirements for health, environment and safety as stated in the radiation protection legislation.

In the case of particularly extensive use or other handling of ionising radiation sources, the radiation protection coordinator must be able to assess health risks and consequences of various accidents, incidents and abnormal events, which may occur.

Country info

Capital	Oslo
Official language	Norwegian
Population	5.2 M
Area	385 186 km2
Currency	Norwegian krone (NOK)
Time zone	UTC + 1
Calling code	47
Internet TLD	.NO

Competent Authority

Norwegian Radiation Protection Authority (NRPA)

Other authorities involved

Ministry of Health and Care Services

Implementation of E&T requirements in

/

RPC tasks

The tasks will and should be proportional to the risk and complexity of the practices of the undertaking. Tasks mentioned in Council Directive 2013/59/EURATOM Article 84.2 will be included in the role of the RPC.

RPC education, training & retraining

There is no specific and general training course for the Radiation protection coordinator, and there is no specific educational entrance level to become one. The NRPA requires the competence to be documented.

In the education of medical staff, some radiation protection knowledge is included. The level of competence we require is normally proportional to the risk and complexity of the practices (graded approach). For example, in dentistry, the training recieved during education as a general practitioner will be considered enough to use X-ray diagnostic apparatus or fill the role of a RPC.

A radiographer or a medical physicist is normally the radiation protection coordinator in hospitals. Re-training in radiation protection is required for all hospital staff working with radiation sources. Universities or professional associations are responsible for the training.

For the industrial use of radiation, we require a 5-day course to get a diploma as a certified operator. Retraining is every 10 years. In addition, working experience shall be documented every 2 years.

Recognition of services and experts

In Norway there are no arrangements for recognition of services and experts (general description) (79).

	Radiation Protection Expert	**Radiation Protection Officer**
Implementation	No	Yes
National terminology	-	Strålevernskoordinator
Translation	-	Radiation Protection coordinator (RPC)
Role	-	Local supervision or performance of radiation protection.
Types or levels	-	There is no specific types or levels
Recognition arrangements	No	No

Poland

RPE & RPO Fact Sheet

The RPE. Definition, role and function in national legislation

RPE is to be implemented in national legislation as a "inspektor ochrony radiologicznej". Its role is to internally supervise the organization's compliance with radiological protection requirements and to provide opinions on the protection against ionizing radiation.
The term: "inspektor ochrony radiologicznej" is not a literal translation of the term: "radiation protection expert"
RPE is an individual and cannot be a group of individuals.
The RPE opinion is required for all activities related to exposure. RPE surveillance is required for activities subject to compulsory licensing, except for X-ray imaging activities for veterinary purposes, operating on a photo-imaging system, and for X-ray equipment intended for the control of persons, consignments and luggage. There are 7 types of RPE's authorization. The RPE may be an employee of an organizational entity in which he or she supervises compliance with radiological protection requirements but may also be an external consultant.
For each type of RPE authorization an adequate (defined) level of knowledge is requied.

The RPO. Definition, role and function in national legislation

The RPO is to be implemented in the national legislation as an employee of the organizational entity designated in writing by the head of the organizational entity.
The role of the RPO is to supervise compliance with internal procedures and work instructions and to perform tasks related to radiation protection to a limited extent.
The head of an organizational entity may appoint, in writting, an employeein an organizational entity to perform specific radiation protection tasks.
Such employee must be trained by the RPE in the area of designated duties.
There is no requirement to designate RPO by external employers.
Designation of the RPO is not mandatory and remains in the decision of the head of the organizational entity. The law determines which duties regarding radiation protection may be performed by the RPO. There are no types of RPO and no formal authorisation of RPO is required.

Country info

Capital	Warsaw
Official language	Polish
Population	38,5 M
Area	313 000 km^2
Currency	Polish zloty (PLN)
Time zone	UTC +1 (Summer UTC+2)
Calling code	+48
Internet TLD	.pl

Competent Authority

President of the National Atomic Energy Agency, regional sanitary inspectors, commander of the military preventive medicine center, state sanitary inspector of the Ministry of Interior and Administration

Other authorities involved

Chief Sanitary Inspector, director of the mining district office, President of the Civil Aviation Office

Implementation of E&T requirements in

Act – the Atomic Law

HERCA

RPE tasks

Possible tasks and topics of advice of the RPE may include the topics provided for in the articles, 34, 37, 38, 68 and 82 of the BSS Directive. Most of the tasks indicated in these articles are to be implemented as duties of the RPE. However, the law does not state an exhaustive list of RPEs tasks. The law determines also in which cases the head of the organizational entity must consult the RPE.

There is no obligation to cooperate with the medical physics expert and vice versa, as the scope of the activities and responsibilities of the RPE does not coincide with the scope of activities and responsibilities of the medical physics expert.

It is not expected to assign RPE tasks to protect workers and people from the general public from radiation exposure.

RPE can perform all tasks of RPO. Some tasks of RPE may be performed by RPO .

RPO tasks

Tasks related to radiation protection as defined in 84.2, are implemented in the form of RPO duties.

These tasks can be carried out by the RPE. Tasks of RPO may be assigned to each employee of the organizational entity.

RPE education, training & retraining

As part of the RPE training, there are 7 types of training, corresponding with the types of authorization, that end with a state examination. Depending on the type of training the RPE candidate has completed, work experience in exposure to ionizing radiation and education, the appropriate type of authorization is granted. Training may be conducted only by the entities registered by the President of PAA

Secondary or higher education of candidate is required.

No specific competence of the candidate are required.

Required candidate's professional experience: 0-4 years.

RPE authorization is issued in the form of an administrative decision recognizing the competence to supervise certain activities for a period of 5 years.. After this period, authorization requires re-approval.

List of institutions or certified training organization (referral to authority website/EUTERP), registered RPE

http://www.paa.gov.pl/strona-80-jednostki_uprawnione_do_prowadzenia.html

RPO education, training & retraining

Training of the employee to be the RPO in an organizational ent is to be carried out by an RPE who exercises internal supervisii over the entity's compliance with radiological protectii requirements. The head of the organizational entity entrusts tl employee with the duties of the RPO in writing.

There is no requirement for an employee's education.

No specific competences are required.

Worker's professional experience is not required. Training for RF and periodic (every 5 years) training in radiological protection required. RPO in an organizational entity must be an employ within the meaning of the Labor Law, a person performing work a basis other than employment, as well as a a self-employed.

Required documentation: entrustment of RPO obligations by he of the organizational entity.

Recognition of services and experts

The RPE is recognized by the competent authority granting the authorization for a radiological protection inspector. Authorization for radiological protection inspectors exercising internal supervision over the compliance with radiological protection requirements in organizational entities are granted by the President of PAA, excluding radiological protection inspectors, who supervise the compliance with radiological protection requirements in health care units operating X-ray machines for medical diagnostics, surface radiotherapy and radiotherapy of non-cancerous diseases, which are granted by the Chief Sanitary Inspector. Powers of an employee of an organizational entity assigned to perform RPO tasks do not require recognition by the competent authority.

Authorization for radiological protection inspector is granted for a period of 5 years.

Authorization is granted to a person who:

1) has full legal capacity;
2) has at least a secondary education;
3) passed the examination of the given training;
4) has a medical certificate of no contraindications to work under exposure;
5) has work experience in conditions of in exposure to ionizing radiation, adequate to the type of authorization.

There is no reciprocal or bilateral recognition of RPE with other Member States. Recognition of RPE qualifications from another Member State requires either an adaptation period or a skill test.

	Radiation Protection Expert	Radiation Protection Officer
Implementation	Yes	Yes
National terminology	inspektor ochrony radiologficznej (IOR)	wyznaczony pracownik
Translation	Radiological protection inspector	designated employee
Role	advice and supervision of law enforcement	supervision of compliance with internal procedures
Types or levels	IOR-1R IOR-1Z IOR-1 IOR-2 IOR-3 R S	Not set Not set Not set Not set Not set Not set Not set
Recognition arrangements	Yes	No

Portugal

RPE & RPO Fact Sheet

The RPE. Definition, role and function in national legislation

The RPE is implemented in national legislation as "Especialista em Proteção Radiológica", which is a literal translation of "Radiation Protection Expert". The role and function of the RPE in national legislation is to provide skilled/competent advice on issues related to compliance with applicable legal requirements regarding occupational exposure and public exposure.

The RPE is an individual and cannot be a group of individuals. However, the RPE may be a member of a Radiation Protection Unit (RPU).

The advice of an RPE is mandatory for all type of practices. The RPE can be an employee of the undertaking, but may also be an external consultant.

RPE's are allowed to advice all types of exposures and all fields of practices. There is a single level of qualification for the RPE.

All undertakings must be able to consult an RPE.

The RPO. Definition, role and function in national legislation

The RPO is implemented in national legislation as "Responsável pela Proteção Radiológica" which can be translated as "Radiation Protection Responsible". The RPO role is to supervise or to carry out radiation protection tasks in the context of a radiological installation, for all type of practices.

The RPO should be an internal employee of the undertaking but when not possible, an external employee is also a possibility if proper supervision of the practice may be guaranteed.

The undertaking is required to provide adequate education, training and retraining in the field of radiation protection, specific for the type of practice. The employer of outside workers is also required to designate an RPO as necessary to supervise or perform relevant radiation protection tasks as they relate to the protection of their workers.

The RPO is mandatory for all types of practices.

The RPO must have the level 1 or 2 of qualification.

Country info

Capital	Lisbon
Official language	Portuguese
Population	10,28 M
Area	92 090 km2
Currency	Euro (€)
Time zone	UTC
Calling code	+351
Internet TLD	.pt

Competent Authority

Portuguese Environmental Agency

Other authorities involved

General Inspection of Agriculture, Sea, Environment and Spatial Planning (IGAMAOT)

Implementation of E&T requirements in

- Decree-Law 227/2008
- Ministerial Order 195/2015
- Decree-Law 108/2018

HERCA

RPE tasks

Possible topics of advice of the RPE includes: Optimization and dose restrictions; classification of the controlled and monitored areas; training and retraining programs for exposed workers; quality assurance; radioactive waste management; preparing and responding to emergency exposure situations; investigation and analysis of accidents and incidents, ... (Decree-Law n. º 108/2018, December 3, article n. º 157º).

When necessary, the RPE articulates with the MPE and vice-versa.

It should be noted that, by national law, a MPE is automatically recognized as a RPE.

The RPE may be assigned the tasks of radiation protection of workers or members of the public.

The RPE may also perform the tasks of an RPO.

RPO tasks

Tasks and activities of the RPO includes: Ensure that work with radiation is carried out in accordance with the requirements of local procedures or rules; supervision of workplace monitoring; maintain records of all radiation sources; provide information and training exposed workers ... (Decree-Law n. º 108/2018, December 3, article n.º 159º).

The RPO articulates with the expert in radiation protection (RPE).

National law allows that RPO tasks can be carried out by an internal radiation protection unit (RPU) or RPE.

The RPO tasks should be assigned to a full time employee whenever possible.

RPE education, training & retraining

A specific RPE training course with specified learning outcomes is required to become an RPE.

The RPE-training courses are taught at higher education institutions or entities that are recognized by the competent authority. Passing the exam results in the required diploma to become an RPE (Level 1).

There is specific educational entrance level for the RPE-training courses namely:

. Bachelor's degree conferred by a higher education institution in the areas of Physics, Physical Engineering, Technological Physics or Biomedical Engineering. Are also considered qualified candidates with a bachelor's degree in other areas, conferred by a higher education institution, subject to curriculum analysis.

APA´s website presents the list of institutions and certified training entities, and also a list of all RPE recognized by the competent authority (APA).

RPO education, training & retraining

A specific RPO-training course with specified learning outcomes is required to become an RPO. The training is taught at higher education institutions or entities that are recognized by the competent authority. Passing the exam results in the required diploma to become an RPO (Level 1 or 2).

There is specific educational entrance level for the RPO-training, namely:

. Bachelor's degree conferred by a higher education institution in the areas of Physics, Chemistry, Engineering, Medicine, Dentistry, Veterinary Medicine or other health sciences.

. Candidates who meet the requirements for Level 1 can also be considered.

Recognition of services and experts

Services and experts are formally recognized by the competent authority. For acceptance, services and experts must comply to acceptance requirements (defined in national law).

Services/entities are formally recognized for the following areas:

a) Study of radiation protection and safety conditions of facilities and equipment that produce or use ionizing radiation (performing the Prior Safety Assessment);

b) Technical assistance in the areas of activity of the facilities mentioned in the previous paragraph;

c) Individual and area dosimetry;

d) Training in radiological protection and safety;

e) Periodic verification of protection and safety conditions and the compliance with the acceptability criteria installations and equipment that produce or use ionizing radiation.

National law allows the RPE to be recognized by two distinct ways:

1.Recognized by attending specific training courses successfully (normal way). The RPE must have a graduation degree conferred by an institution of higher education in the areas of Physics, Physical Engineering, Technological Physics Engineering, Technological Chemistry or Biomedical Engineering. Are also considered qualified candidates with a degree in other areas, conferred by a higher education institution, subject to curriculum analysis.

2.The qualification regime allows, however, that for this recognition can also to also be obtained through equivalence – in this case the candidate must have/provide:

- A graduation degree conferred by an institution of higher education in Physics, Physical Engineering, Technological Physics Engineering, Technological Chemistry or Biomedical engineering;
- Five years' experience of effective exercise of technical functions in radiation protection area;
- Proof of the activities carried out as RPE with demonstrative examples (documents).

Recognition of the RPO is required and national law allows the RPO to be recognized by two distinct ways:
1.Recognized by attending specific training courses successfully (normal way). The RPO must have a graduation degree conferred by an institution of higher education in the areas of Physics, Chemistry, Engineering, Medicine, Dental Medicine, Veterinary Medicine or other health sciences.There are also considered candiadates with qualifications for RPE recognition.
2. The qualification regime provides, however, that this recognition can also be obtained through equivalence – in this case the candidate must have/provide:

- A graduation degree conferred by an institution of higher education the areas of Physics, Chemistry, Engineering, Medicine or other health sciences or hold a higher education degree that does not confer the degree, awarded by an educational institution higher education, in the referred areas;
- Three years of effective exercise of technical functions in radiation protection area;
- Proof of the activities carried out as RPO with demonstrative examples (documents).

Upon recognition - namely after 3 years, both RPE and RPO must require the renewal of recognition. For the renewal of recognition, evidence should be provided: activities report and proof of training acquisition.
Re-recognition is again valid for 3 years.

At the moment there are no system for mutual or bilateral recognition in place.
However, the legal framework allows for the recognition of candidates, via equivalence, that have
- obtained their training in an EU member state, by recognized entities;
- obtained their training in a non-EU state, by recognized entities.

	Radiation Protection Expert	**Radiation Protection Officer**
Implementation	Yes	Yes
National terminology	Especialista em Proteção Radiológica (EPR)	Responsável pela Proteção Radiológica (RPR)
Translation	Radiation Protection Expert	Radiation Protection Responsible
Role	Provide the undertaking with skilled advice on issues related to compliance with applicable legal requirements regarding occupational exposure and public exposure.	Supervise or to carry out radiation protection tasks in the context of a radiological installation, for all practices.
Types or levels	Level 1	Level 1 or 2
Recognition arrangements	Yes	Yes

Serbia

RPE & RPO Fact Sheet

The RPE. Definition, role and function in national legislation

The RPE is implemented in the national legislation as “Stručnjak iz oblasti zaštite od jonizujućeg zračenja” who is a person possessing knowledge, experience and is qualified for providing advice in radiation protection and possesses a SRBATOM (regulator – competent authority) certificate. New bylaws are in preparation that will closer define conditions for obtaining the certificate. The RPE is an individual. The RPE can be an employee of the undertaking, but may also be an external consultant.
The advice of an RPE is envisaged to be for various types of exposure and various fields. The levels of legal requirements to engage an RPE are yet to be specified.
The concept of an RPE is being developed, but will probably be, in practice, with a limited field of expertise and a comprehensive applicability.

The RPO. Definition, role and function in national legislation

The RPO is implemented in the national legislation as “Lice odgovorno za zaštitu od jonizujućeg zračenja” and is an individual who is technically competent in radiation protection matters relevant for a given type of practices to supervise or perform the implementation of the radiation protection arrangements.
General conditions for obtaining a license to perform practice is to designate a RPE or establish RPU (Radiation Protection Unit). SRBATOM specifies the practices which call for the establishment of a radiation protection unit for the implementation of the measures, as well as requirements which need to be fulfilled in order to have such a unit established.
Requirements to employers of outside workers are the same as for their own employees.
The RPO is mandatory for all types of practices. Two types are implemented: individual (RPO) or a unit (RPU).

Country info

Capital	Belgrade
Official language	Serbian
Population (ex.Kosovo*)	7 M
Area	88 361 km2
Currency	Dinar (RSD)
Time zone	UTC + 1
Calling code	+381
Internet TLD	.rs

* This designation is without prejudice to positions on status, and is in line with UNSC 1244 and the ICJ Opinion on the Kosovo declaration of independence.

Competent Authority

Serbian Radiation and Nuclear Safety and Security Directorate (SRBATOM), independent body responsible to the Government of the Republic of Serbia

Other authorities involved

None

Implementation of E&T requirements in

- Rulebook on Conditions for Obtaining Licence to Perform Nuclear Activity
- Rulebook for Establishing Programme of Additional Training and Specialised Education of Occupationally Exposed Persons and Persons Responsible for Implementation of Radiation Protection Measures

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RPE tasks

Tasks and topics of advice of the RPE may include the topics mentioned in the BSS (articles 82.1, 82.2, 34, 37, 38, 68) and particularly: advise on optimization and establishment of appropriate dose constraints; plans for new facilities and the acceptance into service of new or modified radiation sources in relation to any engineering controls, design features, safety features and warning devices relevant to radiation protection; categorization of workplaces as controlled and supervised areas; classification of workers; workplace and individual radiation monitoring programmes; appropriate radiation monitoring instrumentation; quality assurance; environmental monitoring programme; arrangements for radioactive waste management; arrangements for preventig of emergencies; preparedness and response in emergency exposure situations; training and retraining programmes for exposed workers; investigation and analysis of emergency events and appropriate remedial actions; employment conditions for pregnant and breastfeeding workers; preparation of appropriate documentation such as prior risk assessments and written procedures.
RPE may be assigned tasks of radiation protection of workers and members of the public.
RPE shall, where appropriate, liaise with the medical physics
expert.
RPE may perform tasks of RPO.

RPO tasks

The RPO tasks may include the topics mentioned in the BSS (articles 84.1 and 84.2), such as to ensure that work with radiation is carried out in accordance with the requirements of any specified procedures or local rules, supervise implementation of the workplace monitoring programme, maintain adequate records of all radiation sources, carry out periodic assessments of the condition of the relevant safety andwarning systems, supervise implementation of the personal monitoring programme, supervise implementation of the health surveillance programme, provide new workers with an appropriate introduction to local rules and procedures, give advice and comments on work plans, establish procedures for implementing radiation protection, provide reports on the implementation of radiation protection, participate in the arrangements for prevention of, preparedness for, and response to emergency exposure situations, ensure information and training of exposed workers, liaise with the radiation protection expert, conduct all other activities connected with radiation protection.
The task of RPO can be carried out by a Radiation Protection Unit or RPE.
Tasks of RPO may be assigned to a parttime employee.

RPE education, training & retraining

Required training, educational level, specific competences, etc. for RPE (14.1) are to be specified in bylaws.

RPO education, training & retraining

Required training, educational level, specific competences, etc. for RPO (14.1) are defined in the bylaw: Rulebook for Establishing Programme of Additional Training and Specialized Education of Occupationally Exposed Persons and Persons Responsible for Implementation of Radiation Protection Measures.
The requirements vary among practices.

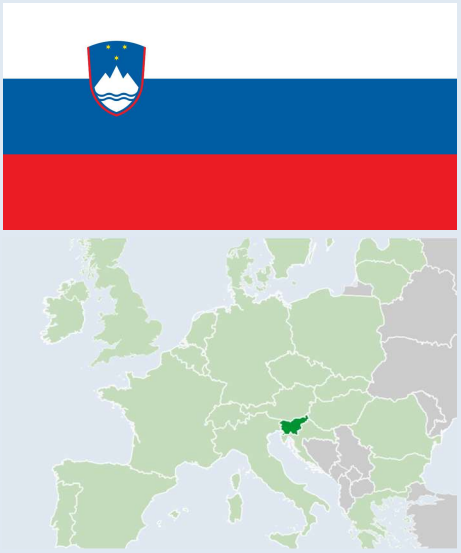
Recognition of services and experts

Formally recognized are services: occupational health service, dosimetry service, radiation protection expert, medical physics expert, radiation protection officer and radiation protection service.
RPO is recognized through the license of the undertaking which is required to have an RPO, namely, recognition requirements for RPO are defined in the Rulebook on Conditions for Obtaining Licence to Perform Nuclear Activity, and Rulebook for Establishing Programme of Additional Training and Specialized Education of Occupationally Exposed Persons and Persons Responsible for Implementation of Radiation Protection Measures. The requirements vary among practices. Evidence that is provided upon recognition is the Designation by the undertaking.
RPE is recognized in the following way: SRBATOM issues a certificate to the RPE based on the submitted application and supplementary documentation prescribed by SRBATOM. The certificate hereof shall be issued for a particular or several fields of radiation protection for the period of five years as of the day of decision. The recognition requirements for RPE, as well as evidence provided upon recognition, shall be defined in bylaws.
No system for mutual or bilateral recognition is in place.

	Radiation Protection Expert	**Radiation Protection Officer**
Implementation	Yes	Yes
National terminology	Stručnjak iz oblasti zaštite od jonizujućeg zračenja	Lice odgovorno za zaštitu od jonizujućeg zračenja
Translation	Radiation Protection Expert	Ratiation protection officer
Role	Gives competent advice to legal entities or entrepreneurs on matters relating to compliance with applicable legal requirements, in respect of occupational and public exposure.	Local supervision and/or implementation of radiation protection tasks.
Types or levels	Not defined yet	Types: - an individual - a unit
Recognition arrangements	Yes	Yes

Slovenia

RPE & RPO Fact Sheet



The RPE. Definition, role and function in national legislation

Definition:

A recognised radiation protection expert is natural or legal person who was recognised by the competent authority and has the required knowledge, training, experience, skills and equipment to give advice in radiation protection, perform checks of working conditions in supervised and controlled areas, checks of radiation equipment and personal protective equipment and perform training in radiation protection.

Main legislative provisions:

An undertaking has to seek for advice from a recognised radiation protection expert (RPE) in all aspects of the radiation practice important for radiation protection.

RPE gives an expert opinion and in collaboration with the undertaking draws up a radiation protection assessment (a document, with prescribed content, which describes all the radiation protection measures for a given radiation practice). This applies for all radiation practices that require a licence or registration. Tasks of the RPE can be performed by the group of experts (RPE – legal person in Slovenian legislation). RPEs are specialised for specific work sectors.

The RPO. Definition, role and function in national legislation

Definition:

Radiation protection officer is an individual with adequate knowledge, training, skills and experience in radiation protection in a specific work sector to be able to supervise or carry out radiation protection measures.

Main legislative provisions:

An undertaking has to nominate a radiation protection officer (RPO), while for nuclear and radiation facilities a radiation protection unit is required. A RPO take care of implementation and planning of radiation protection measures, protection of radiation sources and cooperate with competent authorities in matters concerning radiation protection. RPO carry out or supervise the implementation of radiation protection measures depending on the type of radiation practice. An undertaking has to make sure that RPO has professional independence and adequate work conditions. RPO reports directly to the top management of the undertaking.

An outside undertaking has to name a RPO or make arrangements that such tasks are performed by the RPO of the undertaking, for which outside workers are performing work activities.

Country info

Capital	Ljubljana
Official language	Slovene
Population	2,12 M
Area	20,273 km2
Currency	Euro (€)
Time zone	UTC +1
Calling code	+386
Internet TLD	.si

Competent Authority

Slovenian Radiation Protection Administration (SRPA)

Other authorities involved

Slovenian Nuclear Safety Administration

Implementation of E&T requirements in

- Ionising Radiation Protection and Nuclear Safety Act
- Rules on authorising radiation protection experts
- Rules on the obligations of persons performing radiation practices and holders of ionising radiation sources
- Rules on special radiation protection requirements and the method of dose assessment

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RPE tasks

Main mechanism how RPE is advising the undertaking is through radiation protection assessment i.e. a document which describes all the radiation protection measures for a given radiation practice. Assessment is mandatory in licencing or registration procedure. The content of the assessment is prescribed and covers matters relating to compliance with applicable legal requirements, in respect of occupational and public exposure including topics depicted in BSS 82.2, 34, 37, 38 and 68. RPE draws up an assessment in cooperation with the undertaking. In cases where the undertaking is competent in radiation protection matters (NPP, oncology department etc.), the assessment is drawn up by undertaking. In such cases RPE has to give his opinion about the assessment, which gives additional advice to the undertaking and a second opinion to the regulatory authority.

RPE education, training & retraining

Due to small number of RPEs in Slovenia the training scheme in radiation protection for RPEs on national level is not possible.
Training in radiation protection that candidate has received (e.g. training courses in foreign countries, on the job training, etc.) is evaluated in the recognition process together with other references.
RPEs are recognised for maximum 5 years, after that they have to apply for re-recognition.
List of RPEs (in Slovene language only) is published at SRPA webpage.

RPO tasks

Radiation protection officer is responsible for high radiation protection culture and implementation of radiation protection principles, especially for planning of work activities where radiation protection measures have to be applied, written work instructions and information of workers, carrying out radiation work activities, introduction of new workers to work with ionizing radiation, keeping records, organising the individual monitoring, performing the measurements in the supervised and controlled areas, organising health surveillance and training of exposed workers, emergency preparedness, reporting to the employer and workers about all matters concerning radiation protection, liaison with RPE and with the regulatory authorities and inspection in the field of radiation protection. In case of nuclear and radiation facility tasks of RPO is carried out by radiation protection unit. RPOs which are part-time employee or some other outside person are allowed only in radiation practices with minimal risk.

RPO education, training & retraining

Training scheme for RPOs is basically the same as for exposed workers. The duration of training vary according to the risk involved with the specific radiation practice (4-36 hours). All trainees have to pass an exam every five years. Training centres issue certificates and report the individual data to the regulatory authority in the prescribed electronic format.
Education requirements:

- RPOs in health and veterinary care, industrial radiography, industry, research and other activities with open sources of higher risk shall have at least higher or university education (Bologna first level degree or EQF level 6) in adequate disciplines.
- RPOs in other work sectors shall have at least high school education (EQF level 5).

Recognition of services and experts

Formal recognition is introduced for radiation protection experts, dosimetry services, medical physics experts and occupational health services. In addition, technical support organisation (also called recognised radiation protection experts – legal persons) can be recognised to give advice, perform checks of working environment, radiation sources and protective equipment and perform training in radiation protection.
RPEs are recognised by SRPA on case by case bases. Recognition is a two steps process. Application is first reviewed by a special three-member expert commission, consisting of specialists in radiation protection, appointed by the Ministry of Health and Ministry of Environment. Commission draws up an opinion. is issued by SRPA taking the commission's opinion into account. Recognition requirements for RPE are:
university degree (Bologna master degree or EQF level 7) in disciplines which give basic knowledge of physic and principles of radiation protection (evidence e.g. a copy of university diploma).
adequate knowledge, experience, skills and training in radiation protection (evidence e.g. radiation protection assessments, project reports, training courses abroad, prior engagement as an IAEA expert, scientific articles, etc.)
at least five years of work experience (evidence e.g. work contract with the employer)
Recognition is sector specific. Mutual and bilateral recognition of RPE is in place according to general provisions of "Act Regulating the Procedure for Recognition of Professional Qualifications for Practising Regulated Professions".
There is no recognition for RPOs, however there are requirements regarding formal education and training for RPOs, which are verified in the licencing procedure.

	Radiation Protection Expert	Radiation Protection Officer
Implementation	Yes	Yes
National terminology	Pooblaščeni izvedenec varstva pred sevanji	
Translation		Odgovorna oseba za varstvo pred sevanji
Role	Approved expert in radiation protection	Person responsible for radiation protection
Types or levels	Provides advice to the undertaking	Responsible for the high radiation protection culture and cooperation with competent authorities
Recognition arrangements	N.a.	N.a.

Spain

RPE & RPO Fact Sheet

The RPE. Definition, role and function in national legislation

The RPE is regulated in the national regulatory framework as the so-called “Head of Radiation Protection Service” (Head of RPS). The role and functions of the Head of RPS are consistent with those defined in the EU-BSS for RPE.
In Spain, RPS are technical services that provide advice and technical support in radiation protection to the licensees of nuclear and radioactive facilities, either medical, industrial, etc. RPS are approved by the Nuclear Safety Council (CSN)
Besides, at nuclear facilities, as well as in radioactive facilities where radiological risk may be significant, such as large hospitals, the licensee is requested to have its own Radiation Protection Service.
The RPS has to be led by a Head of the RPS
The RPE functions may cover any subject related to radiation protection of the exposed workers, management of radioactive wastes, emergencies, environment and public
In the medical field, the functions assigned to the head of an RPS are consistent with those defined in the EU-BSS for MPE.
There is only one level of RPE. The RPE must request a Diploma of Head of a RPS awarded by the CSN after a proper evaluation of the candidate according to the Panel of experts designated to this effect. The Diploma is the highest qualification in Spain in terms of Radiation Protection.
The diploma of Head of RPS shall be specific to a determined facility and for the activities approved to this RPS

The RPO. Definition, role and function in national legislation

The RPO is implemented in national regulation as the so called “Supervisor” and is a person with a specific license, granted by the CSN. The Supervisor license enables the operation of the facility in accordance with its operating procedures, within the limits and conditions defined in the official operating documents. It also enables to supervise and or perform the implementation of the radiation protection arrangements in a radioactive facility for a given type of practice.
The role and function of the supervisor are consistent with those defined in the EU BSS for RPO.
The RPO is an employee of the undertaking. The undertaking is required to provide adequate education, training and retraining in the field of radiation protection, specific for any type of practice.
The RPO is mandatory for radioactive facilities (including radiodiagnostic facilities). There are implemented 2 type of RPO depending on the field of application:

- Radioactive facilities: Nuclear Medicine, Radiotherapy, unsealed sources, industrial X-ray, process control and analytical techniques.
- Radiodiagnostic facilities.

Country info

Capital	Madrid
Official language	Spanish Basque, Catalan, Galician
Population	46 M
Area	505,990 km2
Currency	Euro
Time zone	CET (UTC+1) WET (UTC)
Calling code	+34
Internet TLD	.es

Competent Authority

CSN (Nuclear Safety Council): The CSN is the only regulatory body in Nuclear Safety and Radiological Protection.

Other authorities involved

Health Authority (in Medical Field)

Implementation of E&T requirements in

Implementation of E&T requirements are lay down in radiation protection regulations, Laws, Royal Decrees and CSN Instructions and Guides.

HERCA

RPE tasks

The role and function of the RPE are consistent with those defined in the EU- BSS for RPE.
The RPE functions may cover any subject related to radiation protection of the exposed workers, management of radioactive wastes, emergencies, environment and public.
In medical field, the functions assigned to the head of an RPS are consistent with those defined in the EU-BSS for MPE.
RPE may perform tasks of RPO if necessary.

RPO tasks

The role and function of the Supervisor of radioactive facilities are consistent with those defined in the EU-BSS for RPO.
The tasks of Supervisor can be carried out by a RPE or by a Radiation Protection Service.
RPO cooperates and liaises with the RPE.
The RPO tasks usually are assigned to a full time employee.

RPE education, training & retraining

The requirements for basic competence for the RPE are:

- Education: An official Bachelor's degree, or a degree in Engineering or Architecture, or an officially recognized equivalent, in the case of non-national degrees.
- Specific training: Training in the theoretical background and practical aspects of radiation protection (300 h). Knowledge in matters related to radiological safety, in relation to the type of facilities where services are going to be rendered.
- Experience and practice: A minimum three-year experience working in radiation protection.
- In the case of X-ray facility for purposes of medical diagnosis, only, a minimum six-month experience must be proven.
- In addition, the Head of a RPS in medical facilities must have an official recognition as Medical Physics Expert (MPE).

The competence in this respect to act is recognized by the competent authority (CSN).
The RPE must request a Diploma of Head of a RPS awarded by the CSN after a proper evaluation of the candidate according to the Panel of experts designated to this effect
Validity of the Diploma is for life (It needs no administrative re-evaluation) and for a specific facility.
The undertaking is required to provide adequate education, training and retraining in the field of radiation protection, specific for any type of practice.
Regulatory framework update in the field of radiation protection, the implementation of new techniques that require the use of ionizing radiation, the acquisition of equipment and, in general, the application of the criterion of radiological optimization require retraining on the job training.
The list of institutions that teach courses approved by the CSN for training and retraining is available on the CSN website.
There is a register of Radiation Protection Services and Radiation Protections Units available on the CSN website.

RPO education, training & retraining

In order to obtain the different types of licenses awarded by the CSN, applicants are required to prove sufficient knowledge on radiation protection as well as other requirements on academic qualification and health.

The education requirement for supervisors is an official Bachelor's degree or a medium Bachelor´s degree.
It is necessary to successfully complete the courses (in the field of radiation protection) previously approved by the Nuclear Safety Council for the specific license and whose programs contain, the knowledge required for the license and type of practice.
The CSN does not teach courses but homologates courses given by public or private entities that allow exposed workers to obtain those licenses.
The list of entities that teach courses approved by the CSN is available on the CSN website.
There are two types of licenses:

- Accreditation: for radiodiagnostic facilities.
- License: for radioactive facilities.

Accreditation is individual and does not expire.
Validity of license is for 5 years. License is personal and specific to the facility concerned.
The competence in this respect to act is recognized by the competent authority (CSN).
Regulatory framework update in the field of radiation protection, the implementation of new techniques that require the use of ionizing radiation, the acquisition of equipment and, in general, the application of the criterion of radiological optimization require retraining on the job training.

Recognition of services and experts

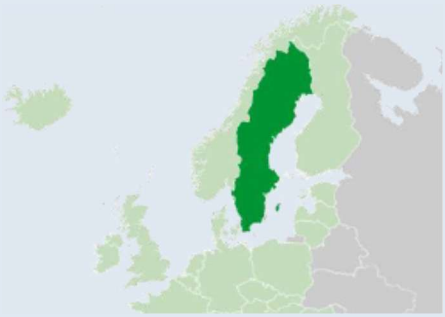
According to Spanish regulatory framework, RPS and Dosimetry Services must be approved by the CSN. RPE and RPO must obtain a specific license awarded by the CSN. Occupational health services are recognized by the Health Competent Authority.
The RPE needs no re-registration.

After 5 years the RPO is required to re-register. For re-registration of the RPO, evidences should be provided on the required minimum amount of working experience as well as training and compliance with health requirements.
There is no system for mutual or bilateral recognition in place.

	Radiation Protection Expert	Radiation Protection Officer
Implementation	Yes	Yes
National terminology	Head of RPS (Jefe de SPR)	Supervisor
Translation	Head of RPS	Supervisor of radioactive facilities
Role	Provide advice or supervise the compliance with regulatory requirements	Local supervision or performance of radiation protection tasks
Types ~~or levels~~	1. Personal and specific to the facility concerned	2. a) Accreditation: Radiodiagnostic facilities b) License: Radioactive facilities. • Nuclear Medicine • Radiotherapy • Unsealed sources • industrial X-ray • Process control and analytical techniques.
Recognition arrangements	Yes	Yes

Sweden

RPE & RPO Fact Sheet



The RPE. Definition, role and function in national legislation

The RPE is implemented in regulation SSMFS 2018:1 as »Strålskyddsexpertfunktion«, which is a literal translation of »Radiation Protection Expert function«. As it is considered as a function it may consist of an individual or a group of Radiation Protection Experts.

Each undertaking with a practice that need a license must have access to an RPE approved by the Radiation Safety Authority (SSM).

Examples of practices that require a license are medical exposure, handling of HASS, accelerators or unsealed sources above a specific level, industrial radiography, certain veterinarian activities, use of radioactive sources or radiation generators in the field and all activities in the nuclear fuel cycle.

There is one level of RPE-expertise however RPEs are only approved for specified practices or a specific activity. RPEs can be an internal resource or commisioned to external resources.

The RPO. Definition, role and function in national legislation

There is no requirement for an RPO in the regulatory framework.

Country info

Capital	Stockholm
Official language	Swedish
Population	10.1 M
Area	447 000 km2
Currency	Krona (SEK)
Time zone	UTC +1
Calling code	+46
Internet TLD	.se

Competent Authority

Swedish Radiation Safety Authority (SSM)

Other authorities involved

n.a.

Implementation of E&T requirements in

- Strålskyddslag (Radiation protection act)
- Föreskrifter (Regulations)
  SSMFS 2018:1 (requirements for activities where a license is required)
  SSMFS 2018:2 (requirements for activities where registration is required)
  SSMFS 2018:5 (medical exposure)
  SSMFS 2018:6 (industrial radiography)
  SSMFS 2018:7 (veterinarian activities that require licensing)

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RPE tasks

The RPE shall be able to give advice according to article 82.2 Euratom 2013/59, which is implemented in regulations SSMFS 2018.1.

According to SSMFS 2018:5 the MPE shall consult the RPE on issues concerning education and training, radiation protection of workers, optimisation and investigations of incidents.

The RPE is not legally assigned the tasks of radiation protection of workers or members of the public. This is the responsability of the undertaking and other parts of the organisation.

RPEs may besides the tasks according to 82.2 also perform tasks of RPO or other tasks, however this is up to the undertaking to agree with the RPE.

RPO tasks

Not applicable.

RPE education, training & retraining

There is no established training system for education of RPEs.

RPO education, training & retraining

Not applicable.

Recognition of services and experts

The RPE is recognised for each undertaking by the Swedish Radiation Safety Authority according to SSMFS 2018:1.

Each individual acting as RPE needs to fulfil the following criteria specified in the regulations SSMFS 2018:1

- An academic degree in physics, engineering, chemistry or biology or other relevant education
- Competence in radiation protection and relevant radiation protection legislation
- At least three years of relevant experience of work with radiation protection in the relevant areas, thus being able to give advice in the relevant areas mentioned in 82.2 (annex 5 SSMFS 2018:1).

The RPE may also be acknowledged RPE from another EU-country.

	Radiation Protection Expert	Radiation Protection Officer
Implementation	Yes	No
National terminology	Strålskyddsexpertfunktion	N/A
Translation	Radiation Protection Expert	
Role	Give advice according to 82.2 Euratom 2013/59	
Types or levels		
Recognition arrangements	Yes	No

Switzerland

RPE & RPO Fact Sheet

In Switzerland, the Radiological Protection Act assigns the responsability for the compliance with the provisions for radiation protection to the licence holder. He must designate one or more *Strahlenschutz-Sachverständige* with a dedicated level of expertise to perform the different tasks and duties. The roles and the functions of the RPO and RPE, according to the BSS, are implemented in the Swiss regulations but are divided between the licence holder, the *Strahlenschutz-Sachverständige* and the competent authorities.

RPE and RPO. Definition, role and function in national legislation

The BSS defines the RPO as an individual competent to supervise the implementation of the radiation protection arrangements related to an authorized and defined type of practice in order to ensure effective protection. In the Swiss national legislation, the functions of RPO are extended with those of the RPE. The *Strahlenschutz-Sachverständige* has to follow a recognized training in order to aquire the knowledge and experience needed to also give radiation protection advices (a task of an RPE) in order to ensure effective protection of individuals, patient and environment. When appropriate, the competent authority provides support in radiation protection and gives advice.

The undertaking manufacturing, distributing, installing or using installations and equipment capable of emitting ionizing radiation requires a license. The license holders are responsible for ensuring compliance with the radiological protection regulations. For this purpose, they are required to appoint an appropriate number of *Strahlenschutz-Sachverständige* with recognized training. The tasks can be achieved by an individual as well as by a group of individuals.

The roles, functions, responsabilities and authorised tasks in radiation protection of the licence holder, the *Strahlenschutz-Sachverständige* and the competent authorities are well defined in the Radiological Protection Ordinance and the Radiation Protection Training Ordinance. In the medical, nuclear and industrial fields, the role and function of the RPO and RPE for a given task and activity are mainly ensured by the *Strahlenschutz-Sachverständige*. In the nuclear field, additional *Strahlenschutz-Fachkräfte* (RP-controller) and *Strahlenschutz-Techniker* (RP-technician) are allowed to take over function and tasks of a RPO.

The *Strahlenschutz-Sachverständige* has to follow an additional specialized education and training recognized by the competent authority to ensure a high-level in radiation protection for a given and authorised type of activities. A mandatory retraining (continuous education) in the field of radiation protection is foreseen by the legislation with a periodicity of five years in general.

The *Strahlenschutz-Sachverständige* as well as the autorized practices and tasks are stated in the licences issued by the competent authorities for the use of ionizing radiation.

Country info

Capital	Bern
Official language	German, French, Italian, Romansh
Population	8.5 M
Area	41 300 km²
Currency	CHF
Time zone	UTC + 1
Calling code	+41
Internet TLD	.ch

Competent authority

- Federal Office of Public Health (FOPH) for medical field, research, education
- Swiss Federal Nuclear Safety Inspectorate (ENSI) for nuclear field
- Swiss National Accident Insurance Fund (Suva) for industry (only supervising authority)

Other authorities involved

- Department of Defence, Civil Protection and Sport (DDPS) for emergency preparedness and response

Implementation of E&T requirements in

- *Strahlenschutzgesetz* (Radiological Protection Act)
- *Strahlenschutzverordnung* (Radiological Protection Ordinance)
- *Verordnung über die Ausbildungen und die erlaubten Tätigkeiten im Strahlenschutz* (Radiation Protection Training Ordinance)
- Guidelines of the ENSI, FOPH and Suva

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RPE and RPO tasks

In the Swiss national legislation, the roles and functions of the *Strahlenschutz-Sachverständige* are equivalent to the roles and the functions of the RPO as well as RPE for a given authorized type of practice or activity. The tasks, the responsibilities and the topics mentioned in the BSS for RPO as well as for RPE are all included. This concern articles 34, 37, 38, 40, 68 and 82.2, 84.2, such as categorization of controlled and supervised areas, quality assurance, licensing, dose and workplace monitoring, training etc. In several fields in medicine, the role of *Strahlenschutz-Sachverständige* is endorsed by medical physicists. In cases with low risks, only a cooperation with medical physicists is required. The tasks of the RPE/RPO in the nuclear field are divided between RPE, RP-technician and RP-controller.

RPE and RPO education, training and retraining

The trained *Strahlenschutz-Sachverständige* is expected to be able to provide high-level, specialized, advice on radiation protection issues to untertakings using ionizing radiation for an authorized practice. As such, the *Strahlenschutz-Sachverständige* needs, besides professional education, a recognised radiation protection training. He must have a good understanding of radiation protection principles and how they are applied and implemented in workplaces. The *Strahlenschutz-Sachverständige* also need to have a comprehensive understanding of the relevant national legislation and to be able to give advise on the actions needed to ensure compliance. All *Strahlenschutz-Sachverständige* require a radiation protection training with exam, recognised by the competent authority, to be competent in radiation protection matters relevant for a given type of practice.

The required level of training, skills and competences are adapted according to the risk and complexity of the practices, which are 1) medical applications, dentistry and veterinary applications, 2) nuclear power plants, 3) industry (open source, industrial radiography, NORM), trade, teaching, research and transport, 4) emergency organizations. A precise description of the authorized activities as well as the duration, competence, topics and the minimum requirements of training are defined in the Radiation Protection Training Ordinance. In total more than 50 training and education courses are defined in order to exercise the function of *Strahlenschutz-Sachverständige* for a specific application. In the Swiss legislation, the amount of required working experience for the *Strahlenschutz-Sachverständige* is specified in the nuclear power plants field, for medical physicists and for some physicians.

The education and mandatory retraining (continous education) of the *Strahlenschutz-Sachverständige as well as* all persons working with ionizing radiation has to be coordinated and documented by the licence holders. The frequency of the required retraining is set to a minimum of 5 years (in the area of nuclear power plants a minimum of one retraining per 3 years is required). The content and duration of the retraining is also defined in the legislation. Retraining courses for persons involved in fields with high risk have to be recognised by the competent authority (for example nuclear power plants personnel, nuclear medicine physicians, medical physicists and all persons exercing the function of *Strahlenschutz-Sachverständige* in nuclear medicine and working with unsealed sources as well as in mobile industrial radiography).

Recognition of services and experts

The activities and tasks of the *Strahlenschutz-Sachverständige* can only be excercised if the radiation protection training is recognised by the competent authority (ENSI, FOPH, Suva) – or by the DDPS for emergency organisations. The requirements/criteria for the recognition of the training is documented in the Radiation Protection Training Ordinance. The *Strahlenschutz-Sachverständige* stand in the licences as responsible persons for radiation protection within the undertaking. Persons excercising a fonction as *Strahlenschutz-Sachverständige* are listed in a national register. There is no system in place between Switzerland and other countries for mutual or bilateral recognition. Foreign *Strahlenschutz-Sachverständige* can apply for recognition, by showing to the competent authority that their qualification/training is equivalent to the Swiss requirements. If necessary, the competent authority may require that the *Strahlenschutz-Sachverständige* undergoes additional training or passes additional exams to fulfill the equivalence.

	Radiation Protection Expert	**Radiation Protection Officer**
Implementation	Yes *	Yes
National terminology	Strahlenschutz-Sachverständige	Strahlenschutz-Fachkraft, - Techniker (nuclear field)
Translation	Radiation Protection Expert *	RP-controller, RP-technician (nuclear field)
Role	Provide advice, supervise the compliance with legal requirements and perform radiation protection tasks	
Types or levels	Specific to the type and scope of the practice 1) medical applications, dentistry and veterinary applications 2) nuclear power plants (three levels: RP Experts, RP-Controller, RP-Technician) 3) industry, trade, teaching, research and transport 4) emergency organizations	
Recognition arrangements	Yes	

* The role and the function of a *Strahlenschutz-Sachverständige* is equivalent to the tasks and function of the RPO and RPE but specialized for a specific practice (authorised activities).

The Netherlands

RPE & RPO Fact Sheet

The RPE. Definition, role and function in national legislation

The RPE is implemented in national legislation as 'Stralingsbeschermingsdeskundige' (SBD), which is a literal translation of 'Radiation Protection Expert'. The role and function of the RPE in national legislation is to provide competent advice, or to supervise, the compliance with legal requirements on behalf of the undertaking, in respect of occupational and public and environmental exposure.
The RPE is an individual and cannot be a group of individuals. However, the RPE may be a member of a Radiation Protection Unit (RPU). The presence of an RPU in an undertaking can be mandatory depending on the types of practices.
The advice of an RPE is mandatory for all type of practices. The RPE can be an employee of the undertaking, but may also be an external consultant.
RPE's are allowed to advice or supervise all types of exposures and all fields of practices (comprehensive expert), but in reality the RPE will be a specialized expert for some practices. The level of the required expertise should be commensurate to the associated risk of the practice. At this moment two RPE-levels are implemented. The higher RPE-level (general coordinating expert) is in general required for undertakings that have a more complex licence and/or require a higher level of radiation protection.

The RPO. Definition, role and function in national legislation

The RPO is implemented in national legislation as 'Toezichthoudend Medewerker Stralingsbescherming' (TSB), which can be translated as 'Supervisory Officer Radiation Protection'. The role and function of the RPO is both to supervise and/or to perform the implementation of the radiation protection arrangements for a given type of practice in the undertaking. The RPO is an employee of the undertaking. The undertaking is required to provide adequate education, training and retraining in the field of radiation protection, specific for the type of practice. The employer of outside workers is also required to designate an RPO as necessary to supervise or perform relevant radiation protection tasks as they relate to the protection of their workers. The RPO is mandatory for all types of practices. There are nine types of RPO in the Netherlands, each specialized in a specific type of practice.

Country info

Capital	Amsterdam
Official language	Dutch
Population	17,4 M
Area	41 500 km2
Currency	Euro (€)
Time zone	UTC + 1
Calling code	31
Internet TLD	.nl

Competent Authority

ANVS (Authority for Nuclear Safety and Radiation Protection), under responsibility of the Ministry of Infrastructure and Water Management (Min IenW)

Other authorities involved

• Ministry of Health, Welfare and Sport (Min VWS) for medical exposures and Medical Physics Experts
• Ministry of Social Affairs and Employment (Min SZW) for exposure of workers.

Implementation of E&T requirements in

- Besluit basisveiligheidsnormen stralingsbescherming (Decree on basic safety standards for radiation protection)
- Regeling basisveiligheidsnormen stralingsbescherming (Regulation on basic safety standards for radiation protection)
- ANVS-verordening basisveiligheidsnormen stralingsbescherming (ANVS-regulation on basic safety standards for Radiation Protection)

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RPE tasks

Possible tasks and topics of advice of the RPE may include the topics mentioned in the BSS (articles 82.2, 34, 37, 38, 68), such as categorisation of controlled and supervised areas, quality assurance, licensing, dose monitoring, setting up ALARA, prevention, training etc. When necessary, the RPE cooperates with and liaises with the RPO and the Medical Physics Expert in a medical centre. The RPE may be assigned the tasks of radiation protection of workers or members of the public. The RPE may also perform the tasks of an RPO when trained for the specific type of practise and competent to perform the supervisory role.

RPO tasks

Possible tasks of the RPO may include the topics mentioned in the BSS (article 84.2), such as to ensure that work with radiation is carried out in accordance with radiation protection requirements, supervision of workplace monitoring etc. The RPO cooperates and liaises with the RPE.
The task of RPO can be carried out by a Radiation Protection Unit or RPE.

RPE education, training & retraining

A specific RPE-basic training course with specificied learning outcomes is required to become an RPE. After the basic RPE-training it is possible to follow the high level RPE-training course (general coordinating expert), which can be mandatory depending on the type of practice.
The RPE-training courses (basic and high level) are taught at training centers such as universities or private institutions that are accredited by the ANVS. Passing the exam results in the required diploma to become an RPE at basic or high level. There is no specific educational entrance level for the RPE-training courses. However, the training is at a higher vocational level or university level (estimated EQF 6-7).
The amount of working experience to become an RPE is not specified in regulations.
Retraining of the RPE (basic and high level) is regulated and documented through the formal recognition requirements.

RPO education, training & retraining

A specific RPO-training course with specificied learning outcomes is required to become an RPO. The training is taught at accredited training centers such as universities or private institutions. Passing the exam results in the required diploma to become an RPO. The required level of training, compentences and learning outcomes of the RPO are proportional to the risk and complexity of the practices, which are 1) medical applications, 2) dentistry, 3) veterinary applications, 4) nuclear fuel cycles, 5) dispersable radioactive materials 6) NORM, 7) accelerators, 8) industrial radiography (including non-destructive testing and exploration research), 9) gauging techniques.
There is no specific educational entrance level for the RPO-training. The level of training depends on the type of practice (estimated EQF 4-7).
The amount of working experience to become an RPO is not specified in regulations.
Retraining of the RPO is provided and documented by the undertaking. The content and frequency of the (documented) retraining is established by the relevant trade association, with a minimum of one retraining per 5 years.

Recognition of services and experts

Services and experts are formally recognised when their registration in a central register is accepted by the responsible authority. For acceptance in the central register, services and experts must comply to the acceptance criteria.
The central register for the formal recognition of occupational health services, the national dosimetry service, and RPEs is kept by the Competent Authority, ANVS. The Ministry of Health is responsible for the recognition of the MPE. Recognition of the RPO is not required.
For the first registration as an RPE (basic or high level) in the central register an RPE-diploma from an accredited training institution is required. After 5 years the RPE is required to re-register. For re-registration of the RPE, evidence should be provided on the required minimum amount of working experience as well as training points that has been acquired every year. Re-registration is again valid for 5 years.
Recognition of foreign RPE on basis of DIRECTIVE 2005/36/EC on the recognition of professional qualifications is possible. If necessary, the ANVS may require the RPE to undergo an aptitude test or adaptation period which may include additional training (Dutch-language and -regulations).

	Radiation Protection Expert	Radiation Protection Officer
Implementation	Yes	Yes
National terminology	Stralingsbeschermingsdeskundige (SBD)	Toezichthoudend Medewerker Stralingsbescherming (TMS)
Translation	Radiation Protection Expert	Supervisory Officer Radiation Protection
Role	Provide advice or supervise the compliance with legal requirements	Local supervision or performance of radiation protection tasks
Types or levels	SBD-I SBD-II	1) medical applications 2) dentistry 3) veterinary applications 4) nuclear fuel cycles 5) dispersible radioactive materials 6) NORM 7) accelerators 8) industrial radiography 9) gauging techniques
Recognition	Yes	No