

Guidance for RPA Applications

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1 Background

IRR19 defines the Radiation Protection Adviser (RPA) 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 individuals, which meets such criteria of competence as may from time to time be specified by the Agency*".

The Radiological Protection Act 1991 (Ionising Radiation) Regulations 2019 (S.I. No. 30 of 2019), which transpose the European Union Basic Safety Standards (BSS) Directive (Council Directive 2013/59/EURATOM), provide for the approval of RPAs in Ireland. These Regulations are hereafter referred to as IRR19. A reference in the guidance document to a "Regulation" should, unless stated otherwise in the text, be interpreted a reference to IRR19.

Regulation 79 provides that the Environmental Protection Agency (EPA) shall:

- establish criteria for the approval of RPAs and
- maintain a register containing the names of persons it has approved to act as Radiation Protection Advisers (RPA).

Regulation 79 also provides for the EPA to determine educational, training and other requirements to be met before it approves an individual to act as an RPA.

The criteria for approval of RPAs established by the EPA provide for two categories of RPA, referred to as Level 1 and Level 2. Level 1 RPA's may only advise on certain lower risk or lower complexity radiological practices, as detailed in Table 1 below. Level 2 RPA's may advise on any radiological practice detailed on the EPA website.

Table 1: Practices on which a Level 1 RPA can provide advice

Sector	Practice
Medical	General radiography giving rise to a medical exposure in a medical radiological installation
	Mobile radiography giving rise to a medical exposure in a medical radiological installation (Excluding fluoroscopy)
	Bone densitometry giving rise to a medical exposure
	Mammography giving rise to a medical exposure
	Specimen radiography for medical purposes
	Dental radiography using an intra/extra oral unit
	Dental cone beam CT
Dental	Dental radiography using an intra/extra oral unit
	Dental cone beam CT
	Handheld dental
Veterinary	General veterinary radiography carried out in a risk assessed veterinary clinic
	Vet radiography in the field
Industry	Product inspection/industrial radiography using cabinet X-ray systems e.g. Nickel 63
	Use of laboratory equipment incorporating sealed sources
	Use of XRF or XRD equipment
	Installation/servicing of radiological equipment
	Security screening of baggage, cargo or parcels using X-ray within shielded enclosure
	Security screening for explosive vapour detection using sealed sources e.g. Nickel 63

The RPA approval system is **competency based**; candidates must demonstrate that they have the required knowledge and practical experience of applying that knowledge, such that they can effectively advise undertakings on radiation protection matters. The competencies have been developed taking into account relevant international guidance and standards including those from the European Commission, the Heads of European Radiological Protection Competent Authorities (HERCA) and the International Radiation Protection Association (IRPA).

It is important to note that in accordance with Regulation 33. (1), undertakings must seek advice from an RPA(s), who is both approved and who has appropriate knowledge and expertise in relation to the particular practice on which advice is being sought. This means, therefore, that approval by the EPA does not of itself mean that an RPA can provide advice in any particular situation.

2 Assessment Criteria

In order to be approved as an RPA, candidates must demonstrate that they:

i. Meet minimum criteria set out in section 2.1 and
ii. Meet the competency requirements set out in section 2.2.

2.1 Minimum Criteria

The minimum criteria cover formal educational requirements, minimum years of experience and CPD over the previous 3 years. The EPA will only assess the competency requirements after the candidate has provided evidence of compliance with the minimum criteria.

The applicant will be expected to have achieved:

	Level 1	Level 2
Minimum Education	**Level 8 NFQ** *(In a relevant discipline e.g. physics, engineering or a relevant clinical discipline)*	**Level 9 NFQ** *(The applicants formal education Level 8 &Level 9 combined must include significant components of physics and radiation protection)*
Minimum Experience	**Minimum 3 years** relevant professional experience in radiation protection	**Minimum 3 years** relevant professional experience **at Senior Level** in radiation protection.

2.2 Competency Requirements

Candidates must provide sufficient evidence to demonstrate that they meet the competency requirements set out in Table 2.

All candidates (Level 1 & Level 2) must demonstrate the Core Competencies (Basic Knowledge, Knowledge of Radiation Protection Standards, Operational Radiation Protection and Organisation of Radiation Protection).

Candidates for Level 2 RPA must demonstrate a greater depth and breadth of knowledge and experience in the Core Competencies commensurate with that required to provide effective radiation protection advice on higher risk and more complex practices. Additionally, they must cover the competencies of Transport and Waste Management.

Table 2: Competency Requirements for RPAs

Competency	Details
Basic Knowledge	(i) Atomic and nuclear physics, interaction of radiation with matter (ii) Biology, biological effects of radiation (iii) Interaction of radiation with matter (iv) Detection and measurement methods (v) Quantities and units (vi) Types of sources (nuclear devices/sealed sources, radioactive substances, irradiating apparatus)
Knowledge of Radiation Protection Standards	(i) Legal and regulatory requirements: • international recommendations/conventions • EU directives • Irish legislation, guidance and authorisation conditions (ii) Basis for radiation protection standards: Epidemiology; linear hypothesis; stochastic & deterministic effects. (iii) ICRP principles of justification, optimisation and dose limitation
Operational Radiation Protection	**(i) Hazard/risk assessment** (ii) Optimisation (ALARA), minimisation of risk (iii) Monitoring - Personal Dosimetry & Area Monitoring (iv) Installations: Shielding calculations/ design layout/engineering controls. (v) Radiation Safety Procedures (vi) Emergency procedures (vii) Investigation and analysis of accidents and incidents and appropriate remedial action. (viii) Work authorisation and dealing with contractors and outside workers (ix) Record Keeping (e.g. sources, doses, unusual occurrences) (x) Classification of areas and categorisation of workers (xi) QC/ Auditing – instrument calibration & testing, licence conditions. (xii) Training and retraining programmes for staff working with ionising radiation (xiii) Types of sources (sealed, unsealed, x-ray units, accelerators)
Organisation of Radiation Protection	(i) RP Governance – Role of RPA, RSC and RPO (ii) Safety Culture (importance of human behaviour) (iii) Communication skills (effective advocate for RP) (iv) Ability to advise (at both senior/ strategic and operational levels)
Additional Requirements for Level 2 Only	
Transport	(i) Knowledge of IAEA Transport of Dangerous Goods (ii) Carriage of Dangerous Goods by Road Regulations
Waste Management	(i) Principles of Waste Management (ii) Legislation of governing disposal

The types of evidence which may be provided to demonstrate the relevant competency include but are not limited to:

- relevant courses and academic qualifications,
- experience in a role involving a significant radiation protection component,
- practical experience/on the job training/ mentoring and
- professional qualifications/memberships/training schemes e.g. MPE, CSci, MIPEM, RPA2000.

It should be noted that the minimum education requirements set out in section 2.1 may not provide a sufficient academic foundation to allow candidates to meet the competency requirements as set out here. In assessing applications, the assessment committee will take into consideration both the candidate's level 8 qualification together with any relevant level 9 qualifications and any specialist

radiation protection courses completed. In general, the EPA recommends that all prospective candidates complete some suitable radiation protection courses. A non-exhaustive list of such courses can be found on the EPA website.

2.2.1 Assessment of RPA competencies

In assessing whether candidates meet the competency requirements, the assessment committee will take into consideration:

(i) the Competency Matrix completed by the candidate summarising evidence presented against each competency
(ii) a portfolio of relevant work by the candidate

The onus is on the applicant to clearly demonstrate the competencies as outlined by the EPA and not on the assessors to seek it from a less than adequate submission.

2.2.2 Competency Matrix

Candidates must use the EPA's Competency Matrix to summarise the evidence being presented against each competency. Sufficient evidence must be provided to demonstrate that each competency has been covered.

The Competency Matrix allows candidates to present their evidence under three categories: formal education, additional courses and practical experience. Practical experience may include actual work experience, on the job training and mentoring. Candidates may, depending on the nature of the competency and their professional backgrounds, use different combinations of these three categories of evidence. For example, a candidate with a physics background and relevant post graduate training may not need to provide additional evidence under Practical Experience to demonstrate the Basic Knowledge (see Figure 3). On the other hand, a candidate with a clinical background is likely to need more evidence under the Additional Courses and Practical Experience categories to demonstrate this competency. For competencies such as ability to advise, candidates will generally need to provide strong evidence under the Practical Experience category.

An example of typical information that could be included in a Competency Matrix is provided in Figure 3.[1] A template for the Competency Matrix can be found on the EPA website. No other format will be acceptable to the Assessment Committee.

[1] It is important to note that Figure 3 includes examples of the types of information candidates might include against the competencies and should not be considered as the information required to fully demonstrate those competencies

Figure 3: Example of typical information that could be included in a Competency Matrix

Competencies	Nature of required competency	Education	Additional courses/ sources of information	Practical experience/ mentoring
Basic knowledge				
(i) Atomic and nuclear physics	Understanding of basic units of radiation, biological effects, detection methods and types of sources	BSc in Physics	Postgraduate course in radiation protection	Working as a Basic grade physics for 4 years
Knowledge of Radiation Protection Standards				
(i) Legal and regulatory requirements: International recommendations/conventions, EU Directives, Irish Legislation, Guidance and Authorisation Conditions	Understanding of the International Radiation Protection Framework, European Directives and Irish regulatory requirements	Covered in medical physics aspect of BSc and postgraduate professional certificate in Radiation Protection	Self-study of both the Irish Legislation IRR19 and BSS 2013/59/Euratom. Attendance at EPA RPA liaison meetings in 2020 and 2021 where the new regulations were discussed. Review of information on ICRP & IAEA websites	Conducted a review of Risk Assessments and Radiation Safety Procedures to identify updates/changes required as a result of the new legislation.
Operational Radiation Protection				
(i)Hazard/Risk Assessment	Ability to identify and assess the risks of actual and potential exposure to ionising radiation and advise on the control measures required.	Risk Assessment module in BSc.	Completed 2-day shielding course in 2018 Attended EPA Risk Assessment Workshop IRR19 Guidance Document - Risk Assessment IRR19 Reg 31	I have developed risk assessments for all dental irradiating apparatus including CBCT, X-ray & handheld units.
Organisational Radiation Protection				
(iii) Communication skills (effective advocate for RP)	The ability to communicate effectively both verbally and in writing and influence good radiation protection practice	Completed presentation and communication skills module as part of BSc.	Completed Effective Communication training course	Developed annual RPA report which clearly outlines status of RP issues and areas for improvement. Regularly advise Senior management and staff on how to improve radiation protection practice including giving "toolbox talks"

2.2.3 Portfolio

Candidates are required to submit a portfolio of recent examples of their own work in radiation protection. All portfolios must include:

- a detailed Risk Assessment including identification of control measures, estimation of expected and potential doses, categorisation of workers and classification of areas, and
- For Level 1 candidates two examples of their work or for Level 2 candidates four examples of their work from the indicative list below.

Indicative examples of work
○ **Design/shielding calculations or detailed peer review of shielding calculations for new or modified design of building and confirmatory radiation survey.** ○ **Installation/Acceptance Testing report for new equipment/ facilities.** ○ **Development of a QA/QC programme for an undertaking including relevant guidelines/standards utilised.** ○ **Development of Radiation Safety Procedures for a designated work area where ionising radiation is used.** ○ **Establishment of or advice on a RP training programme including educational information and training material related to the safe use of ionising radiation.** ○ **Advice provided on personal dosimetry requirements or interpretation of staff dosimetry results.** ○ **Advice provided on radiation incidents and implementation of incident learning outcomes/system.** ○ **Advice provided in relation to equipment performance e.g. taking equipment out of use due to sub-optimal performance.** ○ **Critical review of radiation protection in the workplace, compliance with regulatory requirements, highlighting deficiencies and improvements required e.g. audit of compliance with Regulations/licence conditions, audit of compliance with dosimetry procedures.** ○ **Advice on safe transport/security of radioactive sources e.g. HASS/radiopharmaceuticals.** ○ **Development of emergency drills and education material for emergency training** ○ **Advice on appropriate management/disposal of radioactive waste/disused sources.** ○ **Other relevant examples of work in radiation protection**

The assessment committee will be looking for portfolio submissions that can demonstrate a significant contribution to radiation protection at an advisory level. The portfolio should demonstrate the candidate's knowledge, skills and ability to advise.

For each piece of evidence submitted, a brief description setting out the context shall be included (max 300 words). This must identify the following:

- Situation: What was the problem?
- Task: What was done?
- Action: What was your role?
- Result: What was the outcome?

3 Application Process

3.1 Application Form

All evidence must be submitted using the relevant RPA application form. Part 4 of the application form is a declaration in support of candidate, which must be signed by a mentor or a member of the senior management familiar with the candidate's work

Part 8 is a Self-Declaration, which must be signed by the candidate, confirming that they will limit their professional work to their area of expertise.

Evidence of qualifications, certifications and supporting documentation must be retained for audit but do not need to be submitted at time of application. The assessment committee may request information about courses that are not listed on the EPA website.

The assessment committee may request a candidate to attend an interview where it is felt it would be helpful to clarify aspects of the application.

3.2 Receipt of application

Only fully complete applications accompanied by the appropriate fee will be accepted. Complete applications must include:

1. Part 1: Applicant details
2. Part 2: Qualifications and Professional/Learned Societies
3. Part 3: Professional Records
4. Part 4: Declaration of support from Mentor/RPA/Senior Management
5. Part 5: Complete Core Competency Matrix and Portfolio.
6. Part 6: Inclusion in list of RPAs available for consultation
7. Part 7: Self Declaration
8. Part 8: Declaration by applicant that all essential items have been included in submission.

On receipt of an application, the EPA will review the submission and ensure that the minimum criteria (as outlined in Section 2.1) are met. If the minimum requirements are not met, the application will be returned without proceeding any further in the review process.

Applications will be accepted throughout the year however there will be two closing dates for submissions. The Assessment committee will assess the applications submitted within 6 weeks of each closing date. All candidates will be informed of the Committees verdict within 60 working days of submission dates below.

Submission Dates	Response
Last Friday in February	Mid May
Last Friday in August	Mid November

4 Assessment Committee

4.1 Approval

The Assessment Committee established by the EPA includes EPA staff and independent external experts. The assessment committee will make a recommendation to approve or reject an application to the EPA Programme Manager based on their review of the evidence provided. It should be noted that approval from the EPA Assessment Committee is a recognition of competence, sufficient to show that the individual satisfies the general definition of an RPA. It does not of itself necessarily make the holder a suitable RPA to consult for a particular practice.

Approvals are valid for 5 years, after which they must be renewed if the RPA wishes to continue providing the service.

In the event that the candidate is refused approval, they will be notified by the Chairperson of the RPA Assessment Committee and advised of the areas in which they failed to meet the approval criteria.

Any complaints against an approved RPA, or information questioning the competence of an approved RPA will be investigated by the EPA. The EPA may remove the name of a person from the register where the Agency is of the view that such person no longer meets the approval criteria.

4.2 Appeals

Candidates who have been refused approval or have been removed from the register have the right of appeal to the EPA within four weeks of being notified. The EPA will appoint a Director to establish an independent appeal panel. The aim of the appeal process is to ensure that the Assessment Committee's assessment has been fair and reasonable.

Appeals shall be accompanied by a statement from the appellant setting out the grounds for appeal. The Appeals Panel reserves the right to request additional information and/or interview the appellant if considered necessary. Following its investigation, the Appeals Panel will report its recommendations to the Board who will decide the outcome of the appeal and inform the appellant accordingly. The decision of the Board is final.

5 RPA reapprovals

The initial RPA certificate of approval is valid for a period of **5 years** from the date on which approval is granted.

When the candidate first applies for approval to act as an RPA, the EPA assesses whether they meet the competency requirements. The renewal process does not seek to re-assess that the candidate meets these requirements. The candidate is instead required to provide evidence that, over the preceding five-year period, they have been active as an RPA providing radiation protection advice to undertakings and that they have maintained their knowledge of the competencies through continuous professional development (CPD).

The candidate will be required to submit:

1. a short summary (max 1500 words) detailing the major items of radiological protection advice they have given in the preceding 5 years, and
2. their CPD record in the format of the Renewal CPD spreadsheet.

An individual seeking renewal is expected to have accrued a minimum of **75 credit points at Level 1** and **100 credit points at Level 2** over the preceding five-year period.

Of these, at least **25 credit points** must be from activities where the RPA was the recipient of knowledge or training through attending courses or other educational activities. These correspond to Category 1 CPD activities as detailed in Appendix I. This is to ensure that candidates are aware of changes in radiation protection philosophy and regulations and are up to date with developments in radiation protection practice.

A broader range of CPD activities are included in Category 2, which encompasses self-directed learning, on the job training/experiences and activities related to teaching and research.

Points claimed should relate primarily to occupational/public radiation protection within the scope of IRR19. However, the EPA recognise that aspects of other courses, which are more generally relevant to radiation safety, may also be included. Such courses might, for example, include installation of new equipment, commissioning, QA and scientific basis for new radiological techniques. Candidates are reminded that all points claimed must relate to the role of an RPA.

Ideally, candidates CPD activities should be varied and spread evenly over the five-year period, however, allowance will be made for individual circumstances, for example, career breaks or maternity leave. Candidates should be selective in their choice of evidence and aim for quality over quantity.

Applicants should indicate the number of points claimed and the learning outcomes under the various CPD activities (as described in Appendix I) in the Renewal CPD spreadsheet. Applicants should provide a summary of the points claimed for both Category 1 and Category 2 activities.

Candidates must maintain relevant records/ verification material supporting their CPD record. This may include certificates of attendance/ conference schedules / meeting agendas / articles / service level agreements etc. This evidence does not need to be submitted with the renewal application but may be requested by the EPA as part of an audit.

6. Corporate RPA Body

Corporate RPAs normally comprise individuals who themselves are EPA approved RPAs under Regulation 79. In that way, any advice given by the corporate RPA, pursuant to Regulation 33, will in effect be given by an RPA approved by the EPA under Regulation 79. It is important to note that approval of a corporate body RPA does not equate to approval of any individual employed by that corporate RPA body acting as an RPA in Ireland. Any RPA advice given to an Undertaking in Ireland by a corporate RPA body, pursuant to Regulation 33, must be overseen and signed off by and an EPA approved RPA employed or otherwise working on behalf of that Corporate RPA body. In addition, the RPA advice given must be within the RPA competence of the EPA approved RPA.

Appendix I

CPD Credit Points (derived from European Federation Of Medical Physics guidelines on National Schemes for CPD, 2016)

Category 1 – Educational Activities		
Activity	**Details**	**Credit points (cp)**
1.1	Attendance at national and international courses (i.e. lectures, scientific meetings, workshops, refresher/training courses, online educational webinars)	1 cp/ hour 1.5 cp/ hour with exam
1.2	Attendance at formal local educational activities (e.g., lectures, seminars, organised teaching activities)	1 cp/ hour

Category 2 – Self – directed learning, on the job activities & teaching/research		
Activity	**Details**	**Credit points (cp)**
2.1	Planned self-directed learning (e.g., reading of textbooks, journals, including 'distance learning facilities')	1 cp/hour The applicant would be expected to provide titles of the articles or books read or of the distance learning programme as appropriate
2.2	Special training visits to other departments to study the implications for radiation protection of new technology or a new procedure	1 cp/hour
2.3	On the job training activities and experiences, e.g., development of interpersonal/communication skills	1 cp/hour
2.4	Preparation and delivery of formal lecture or seminar	8 cp for first time presentation 2 cp for repeated presentation
2.5	Organisation of an approved scientific meeting or training course	5cp per meeting or day
2.6	Publication of a) a paper in a recognized scientific journal b) a textbook c) a chapter in a book	 2 to 20 cp 5 to 30 cp 5 cp The number of points claimable would depend on factors such as whether the paper

		was peer reviewed, the status of the journal or book and the contribution of the author
2.7	Editor of Scientific Journal/Book	15 cp
2.8	Oral or poster presentation at conference or meeting	2 to 10 cp per presentation, depending on type of congress (international, national, regional) and authorship (single author, co-author)
2.9	External examiner for: a) a PhD thesis b) an MSc thesis c) a post-graduate course	 15 cp per thesis 10 cp per thesis 10 cp per year
2.10	Implementation of new technologies/procedures	Up to 5 cp per activity, depending on the complexity of the technology and the involvement of the candidate in its implementation/development
2.11	Active membership of tasks groups (working groups, standardization committees etc.)	Up to 5 cp per membership and per year, depending on type of group (international, national, regional, local) and relevance to radiation protection