RPA 2000
THE COMPETENCE CERTIFICATION SCHEMES

Document RWA4
Additional Guidance for the assembly of RWA portfolios in the medical sector

This guidance has been drawn up to supplement the guidance given in Document RWA2. It is intended to provide assistance to persons in the medical sector who are assembling RWA portfolios and may also be of interest to others, particularly potential applicants in the research and teaching sector.

A1.3 Cross Reference Table No.1 (b)

Applicants do not have to include everything contained within the 5th column (guidance for the medical sector RWA). These are examples of what might be considered appropriate to assist you with ideas for creating a portfolio. Applicants should include a balanced selection of evidence and explain, within the context of the requirements of the syllabus, why they consider that the evidence meets the competence.

EA No.	Topic	Depth	More detailed content (sub-topics)	Guidance for the Medical sector RWA
10c.	• Key national legislation and regulations (including competent authorities).	DU	• Legislative framework in the UK • UK Regulatory bodies and regulatory system • Knowledge of the main requirements of the following legislation and principles and guidance: o The Environmental Permitting Regulations o 2016 (EPR16)/The Radioactive Substances Act 1993 (RSA93)/The Environmental Auhorisations (Scotland) Regulations 2018 (EASR)	• RPA/RWA certifications and appointments • A thorough audit of a facility against the requirements of their registration / permit / authorisation or against the requirements of the legislation • Any relevant training on these subjects, run by any respected body. Include certificate of attendance and details of the programme / syllabus • Vocational training including these

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			○ Exemption orders made under EPR16/RSA93 ○ Published policies and guidance from the environment agencies ○ Limitations and conditions included in environment agencies' permits	subjects (i.e. STP/IPEM Part I & II training) – include competences and proof of candidate success • A report examining the potential for local use of exemption orders • Internal reports examining the local effect of policies and guidance from the environment agencies; minutes of meetings where the implications are discussed • Correspondence with the regulator on any relevant aspect
10d	• National legislation and regulations affecting radioactive sources and radioactive waste	BU	• The HASS and Orphan Sources Regulations 2005 • The Ionising Radiations Regulations 2017 • Directions made under Radioactive Waste Legislation	• Any report considering local HASS sources with regard to the regulations • A summary of the main requirements of the HASS and orphan source regulations • RPA/RWA certifications and appointments • Any relevant training on these subjects, run by any respected body. Include certificate of attendance and details of the programme / syllabus • Vocational training including these

EA No.	Topic	Depth	More detailed content (sub-topics)	Guidance for the Medical sector RWA
				subjects (i.e. STP/IPEM Part I & II training) – include competences and proof of candidate success • Correspondence with the regulator on HASS aspects
10e	• Other relevant Radioactive Substances Legislation	GA	• The Justification of Practices Involving Ionising Radiations Regulations 2004(as amended) • The Radiation (Emergency Preparedness and Public Information) Regulations 2019 • The Transfrontier Shipment of Radioactive Waste and Spent Fuel Regulations 2008 • Radioactive Contaminated Land legislation	• A brief summary of the main requirements of these regulations • Any relevant training on these subjects, run by any respected body. Include certificate of attendance and details of the programme / syllabus • Vocational training including these subjects (i.e. STP/IPEM Part I & II training) – include competences and proof of candidate success • A summary of work undertaken on an environmental impact assessment that considers contaminated land
10f	• Other relevant waste legislation	GA	• Nothing suggested but indicate your awareness of the topic	• A brief summary of any other waste legislation i.e. the OSPAR convention
11	**Operational Radiation**	DU	• Selection and implementation of suitable	• A radiological impact assessment

EA No.	Topic	Depth	More detailed content (sub-topics)	Guidance for the Medical sector RWA
11b	**Protection** • Hazard and risk assessment (including environmental impact)	DU DU BU	impact assessment methods • .Pathways by which radioactive discharges may lead to a public dose: o External o Airborne – direct ingestion o Airborne – deposition, followed by ingestion via food pathway o Airborne – inhalation o Liquid – direct ingestion (drinking water) o Liquid - ingestion via food pathway o Contact • Bio-accumulation effects • Impacts of radiation on non-human species	• Applications made to the environment agencies for authorisation that include an environmental impact assessment • A review of an existing environmental impact assessment with respect to a critical change (change to excretion factors, change to local maximum activities etc) • Any component of a Best Practicable Means document that considers the possible effects of discharges under normal or adverse conditions • Any risk assessment or contingency plan that considers the environmental impact of any scenario considered • Any relevant training on these subjects, run by any respected body. Include certificate of attendance and details of the programme / syllabus • Vocational training including these subjects (i.e. STP/IPEM Part I & II training) – include competences and proof of candidate success

EA No.	Topic	Depth	More detailed content (sub-topics)	Guidance for the Medical sector RWA
11d	• Control of releases ○ Quality and environmental management systems • Abatement technology	BU GA	• Investigation requirements for radiological incidents • Understanding of operating instructions relevant to RWL permits • Understanding of maintenance instructions relevant to RWL permits • Understanding of emergency instructions relevant to RWL permits • Understanding the reporting requirements and systems for radioactive sources and discharges • Abatement technologies available • Maintenance needs of abatement technologies	• A thorough audit of a facility against the requirements of their registration / permit / authorisation or against the legislation • Correspondence with the regulator following an inspection • An assessment or review of an existing assessment of reasonably foreseeable radiological incidents and the associated contingency plans and instructions for investigation • A report of an internal investigation into a breach of a registration / permit / authorisation • New build / civil modification design specification e.g. fume cupboard stack height, surface finish, aqueous disposal routeA review of the effectiveness and ongoing assessment / maintenance of any local abatement technologies used • A summary / brief literature review of abatement technologies generally available

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				• Any relevant training on these subjects, run by any respected body. Include certificate of attendance and details of the programme / syllabus • Vocational training including these subjects (i.e. STP/IPEM Part I & II training) – include competences and proof of candidate success • BAT/BPM document that incorporates an abatement / control options appraisal
11c	• Monitoring • Area monitoring	GA	• Monitoring of operations – instrumentation and control methods • Knowledge of instrument calibration procedures	• RPA certification and appointment • Any contribution towards SOPs outlining the process for the QA / calibration of equipment • Reports giving the results and conclusion following QA and calibration • Any relevant training on these subjects, run by any respected body. Include certificate of attendance and details of the programme / syllabus • Vocational training including these subjects (i.e. STP/IPEM Part I & II training) – include competences and proof

EA No.	Topic	Depth	More detailed content (sub-topics)	Guidance for the Medical sector RWA
				of candidate success
11f	Reference person concept/dose calculation for reference person	BU	• How to determine the collective dose • How to assess reference person dose	• Any relevant training on these subjects, run by any respected body. Include certificate of attendance and details of the programme / syllabus • Vocational training including these subjects (i.e. STP/IPEM Part I & II training) – include competences and proof of candidate success • Applications made to the environment agencies for authorisation that include an environmental impact assessment
12 12a	**Organisation of radiation protection:** • Role of qualified experts:	DU BU	• The role of the Radioactive Waste Adviser • The role of other experts employed to advise on radiological protection.	Consider including; • RPA/RWA certifications and appointments • A selection of evidence already included (all evidence submitted will to some degree demonstrate an understanding of the role of a RWA)
13	**Waste management:**	DU	• Sources of radioactive waste, waste types,	• A thorough audit of a facility against the

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13a	• Radioactive waste management		waste classification and waste characterisation • Principles of radioactive waste management: dilute and disperse, concentrate and contain, storage for decay and clearance from control • The waste hierarchy : avoidance, minimization, reuse, recycle and disposal • Storage options for radioactive waste • Treatment options for radioactive waste • Management of disused sealed sources: technical options and safety aspects	requirements of their authorisation or against the requirements of the legislation • Correspondence with the regulator on waste disposal • Any advice on, or review of, waste arrangements (routine, in response to local changes, in response to guidance or legislation changes) • Advice on or review shortly after the setting up of a new procedure or service, especially with respect to best practice for waste • Any relevant contribution to a BAT/BPM document regarding waste disposal options or a critical review of those aspects of a BAT/BPM document • Any advice issued regarding permanent cessation of source use, the removal of sources or the decommissioning of an area • Any relevant training on these subjects, run by any respected body. Include certificate of attendance and details of the programme / syllabus

EA No.	Topic	Depth	More detailed content (sub-topics)	Guidance for the Medical sector RWA
				• Vocational training including these subjects (i.e. STP/IPEM Part I & II training) – include competences and proof of candidate success

13b	• Radioactive waste assay	BU	• Sampling methodologies and minimisation of secondary waste
			• Assay methodologies
			  ○ Uncertainties and limitations in assay data
			  ○ Assay recording methods
				• Any contribution towards local SOPs outlining the process for radioactive waste assay, results analysis and the uncertainties
				• Any report giving the results and conclusions following radioactive waste assay, taking into account uncertainties
				• Any relevant training on these subjects, run by any respected body. Include certificate of attendance and details of the programme / syllabus
				• Vocational training including these subjects (i.e. STP/IPEM Part I & II training) – include competences and proof of candidate success

13c	• Radioactive waste disposal	DU	• Disposal options for radioactive waste including waste acceptance criteria	• Any advice on, or review of, waste arrangements (routine, in response to local changes, in response to guidance or

EA No.	Topic	Depth	More detailed content (sub-topics)	Guidance for the Medical sector RWA
				legislation changes) • Any relevant contribution to a BAT/BPM document regarding waste disposal options or a critical review of those aspects of a BAT/BPM document • An audit of a facility against the requirements of their authorisation or against the requirements of the legislation where the current waste arrangements are verified best practice
14	**Transport**	GA	• Transport of radioactive materials o Packaging of radioactive materials and waste for transport o Security of radioactive materials during transport • Transport documentation – dispatch and receipt	• RPA / DGSA certification and appointment • Any contribution to an SOP regarding the preparation and transport of radioactive materials or an audit of existing arrangements (including security and documentation) • Any documented involvement in the transportation of radioactive materials • Any specific advice given on arrangements for the transportation of radioactive materials • Any correspondence with the regulator

EA No.	Topic	Depth	More detailed content (sub-topics)	Guidance for the Medical sector RWA
				regarding the transportation of radioactive materials or waste
15	**Optimisation techniques** • BAT/BPM	DU	• How to apply the BAT/BPM condition, and audit against BAT/BPM requirements, in relation to: o Facility design o Facility operation, including abatement of discharges o Minimisation of risk o Radioactive waste management o Facility decommissioning o Identification of critical assets for facility operation and maintenance • Appropriate balance between employee dose and public dose	• The significant contribution to, or critical review of, a BAT/BPM document • Any relevant training on these subjects, run by any respected body. Include certificate of attendance and details of the programme / syllabus • Vocational training including these subjects (i.e. STP/IPEM Part I & II training) – include competences and proof of candidate success • Any advice given on the requirements for decommissioning an area or a facility, or reports or correspondence concerned with a decommissioning event itself • Any contribution to an SOP outlining the steps to be taken when decommissioning an area or a facility

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16	**Environmental monitoring**	BU	• Environmental monitoring: atmosphere, water bodies, foodstuffs, other environmental indicators, verification of compliance with derived environmental reference levels, survey techniques. • Tools available for environmental radiation monitoring • Sampling and analysis methods for environmental measurements • Mapping and data presentation for environmental data • Monitoring at source: external radiation and liquid and gaseous effluents, verification of compliance with discharge limits • Application to different sources	• Certificate of attendance from workshops run for current / prospective RWAs that discuss environmental monitoring • Any relevant training on these subjects, run by any respected body. Include certificate of attendance and details of the programme / syllabus • Vocational training including these subjects (i.e. STP/IPEM Part I & II training) – include competences and proof of candidate success • Any contribution to an SOP concerned with environmental monitoring • Any reports or other correspondence relating to environmental monitoring undertaken • Any correspondence with the regulator regarding environmental monitoring methods or results

EA No.	Topic	Depth	More detailed content (sub-topics)	Guidance for the Medical sector RWA
17	**Security of radioactive materials**	BU	• Understanding of where to get advice. • Security requirements for radioactive sources (e.g. from CPNI/NaCTSO or OCNS). • Understanding the purpose and use of a security plan. • Understanding of protecting information.	• Any contribution to, or critical review of, the security aspects of a BAT/BPM document • Any relevant training on these subjects, run by any respected body. Include certificate of attendance and details of the programme / syllabus • Vocational training including these subjects (i.e. STP/IPEM Part I & II training) – include competences and proof of candidate success • Any advice given regarding the security of radioactive materials • Any correspondence with regulators or enforcers on the subject of security of radioactive materials

A2.2 Cross Reference Table No.2 - Practical competence and workplace experience

Applicants do not have to include everything contained within the 4th column (guidance for the medical sector RWA). These are examples of what might be considered appropriate to assist you with ideas for creating a portfolio. Applicants should include a balanced selection of evidence and explain, within the context of the requirements of the syllabus, why they consider that the evidence meets the competence

EA No.	Topic	More detailed content (sub-topics)	Guidance for the Medical Sector RWA

10c	Legal and Regulatory Basis- Key national legislation and regulations (including competent authorities)	• Legislative framework in the UK*
		• UK Regulatory bodies and regulatory system*
		• Knowledge of the main requirements of the following legislation and principles and guidance:
		  ○ The Environmental Permitting (England and Wales) Regulations 2016(EPR16)/The Radioactive Substances Act 1993 Amendment (Scotland)Regulations (RSA)*/The Environmental Authorisations (Scotland) Regulations 2018 (EASR)
		  ○ Exemption orders made under EPR16/RSA*
		  ○ Published policies and guidance from the environment agencies*
			• RPA/RWA certifications and appointments
			• A thorough audit of a facility against the requirements of their registration / permit / authorisation or against the requirements of the legislation
			• A report examining the potential for local use of exemption orders
			• Internal reports examining the local effect of policies and guidance from the environment agencies; minutes of meetings where the implications are discussed
			• Any advice given with references to how to meet all applicable legal requirements following; introduction of a new procedure, construction of a new facility, change in technique or practice etc
			• Relevant presentations that teach the content required by this competence

EA No.	Topic	More detailed content (sub-topics)	Guidance for the Medical Sector RWA
		○ Limitations and conditions included in environment agencies' permits*	• Applications or variations to permits, registrations 15 RWA4 medical sector guidance v1.0 or authorisations • Correspondence with the regulator on any relevant aspect
11b	Operational Radiation Protection- Hazard and risk assessment (including environmental impact).	• Selection and implementation of radiological impact assessment methods* • Pathways by which radioactive discharges may lead to a public dose: ○ External* ○ Airborne – direct ingestion* ○ Airborne – deposition, followed by ingestion via food pathway* ○ Airborne – inhalation* ○ Liquid – direct ingestion (drinking water)* ○ Liquid - ingestion via food pathway* ○ Contact* • -Bio-accumulation effects* ***In respect of the 7 pathways listed above, it is important that any submitted evidence demonstrates that you have an <u>understanding</u>***	• A radiological impact assessment • Any assessment of exposure to external radiation (could come from an IRR99 risk assessment) • Applications made to the environment agencies for authorisation that include the pertinent points of an environmental impact assessment • A review of an existing environmental impact assessment with respect to a critical change (change to excretion factors, change to local maximum activities etc) • Any component of a Best Practicable Means document that considers the possible effects of discharges under normal or adverse conditions • Any risk assessment or contingency plan that considers the environmental impact of any scenario considered • Advice on the undertaking of environmental monitoring

EA No.	Topic	More detailed content (sub-topics)	Guidance for the Medical Sector RWA
		of those pathways and not simply the use of proprietary software.	• Evidence of environmental monitoring results and a discussion of their implications
11d	Operational Radiation Protection - Control of releases Quality and environmental management system	• Investigation requirements for radiological incidents • Understanding of operating instructions relevant to RWL permits • Understanding of maintenance instructions relevant to RWL permits • Understanding of emergency instructions relevant to RWL permits • Understanding the reporting requirements and systems for radioactive sources and discharges	• A thorough audit of a facility against the requirements of their registration / permit / authorisation or against the requirements of the legislation • Any report detailing the measures necessary to achieve compliance with the legislation • Correspondence with the regulator following an inspection • An assessment or review of an existing assessment of reasonably foreseeable radiological incidents and the associated contingency plans and instructions for investigation • A report following an internal investigation into a breach of a registration / permit / authorisation
12 12d	**Organisation of Radiation Protection** • Record keeping	• Record keeping to comply with legislative requirements • Content, format and maintenance of records	• A thorough audit of a facility against the requirements of their registration / permit / authorisation or against the requirements of the legislation

EA No.	Topic	More detailed content (sub-topics)	Guidance for the Medical Sector RWA
	(sources, doses, unusual occurrences etc)		• Any contribution towards local SOPs outlining the process for the keeping and use of radioactive materials, including associated record keeping • Any reports summarising the quantities of radioactive material used and radioactive waste disposed of over a period of time; either internal or 17 RWA4 medical sector guidance v1.0 for the benefit of an environment agency • Radioactive waste policy or detailed BAT/BPM document describing roles, responsibilities and means for demonstrating compliance with a permit / authorisation
13a	Waste management - Radioactive waste management	• Sources of radioactive waste, waste types, waste classification and waste characterisation • Principles of radioactive waste management: dilute and disperse, concentrate and contain, storage for decay and clearance from control • The waste hierarchy : avoidance, minimization, reuse, recycle and disposal • Storage options for radioactive waste • Treatment options for radioactive waste	• A thorough audit of a facility against the requirements of their authorisation or against the requirements of the legislation • Correspondence with the regulator on waste disposal • Any advice on, or review of, waste arrangements (routine, in response to local changes, in response to guidance or legislation changes) • Advice on or review shortly after the setting up of a new procedure or service, especially with respect to best practice for waste

EA No.	Topic	More detailed content (sub-topics)	Guidance for the Medical Sector RWA
		• Management of disused sealed sources: technical options and safety aspect	• Any relevant contribution to a BAT/BPM document regarding waste minimisation and disposal options or a critical review of those aspects of a BAT/BPM document • Any advice issued regarding permanent cessation of source use, the removal of sources or the decommissioning of an area
13 13c	**Waste management** • Radioactive waste disposal	• Disposal options for radioactive waste.	• Any advice on, or review of, waste arrangements (routine, in response to local changes, in response to guidance or legislation changes) • Advice on or review shortly after the setting up of a new procedure or service, especially with respect to best practice for waste • Any relevant contribution to a BAT/BPM document regarding waste disposal options or a critical review of those aspects of a BAT/BPM document • An audit of a facility against the requirements of their authorisation or against the requirements of the legislation where the current waste arrangements are verified best practice
15	Optimisation techniques -	• How to apply the BAT/BPM condition, and	• The significant contribution to, or critical review of, a

EA No.	Topic	More detailed content (sub-topics)	Guidance for the Medical Sector RWA
	BAT/BPM	audit against BAT/BPM requirements, in relation to: ○ Facility design* ○ Facility operation, including abatement of discharges* ○ Minimisation of risk* ○ Radioactive waste management* ○ Facility decommissioning* ○ Identification of critical assets for facility operation and maintenance, • Appropriate balance between employee dose and public dose.	BAT/BPM document • Any advice given on the requirements for decommissioning an area or a facility, or reports or correspondence concerned with a decommissioning event itself • Any contribution to an SOP outlining the steps to be taken when decommissioning an area or a facility • New build / civil modification design specification e.g. fume cupboard stack height, surface finish, aqueous disposal routes