Paper submitted to SNIFFER for the workshops organised under UKRSR10 Radioactive Substances Act 1993 and Qualified Experts

SNIFFER – QUALIFIED EXPERTS IN THE NON NUCLEAR SECTOR

Introduction

This paper addresses the requirements and makes suggestions regarding the development of a scheme for Qualified Experts for the provision of advice on the management of radioactive substances and radioactive waste, as required by the Basic Safety Standards Directive 96/29/Euratom. Although it is primarily aimed at the non-nuclear sector it could be applied to the nuclear sector.

The Basic Safety Standards Directive requires the appointment of a Qualified Expert (QE) in relation to activities involving radioactivity that have the potential to impact on people and the environment.

The Directive defines the Qualified Expert as:

"Persons having the knowledge and training needed to carry out physical, technical or radiochemical tests, enabling doses to be assessed and to give advice in order to ensure effective protection of individuals and the correct operation of protective equipment, whose capacity to act as a qualified expert is recognised by competent authorities. A qualified expert may be assigned the technical responsibility for tasks of radiation protection of workers and members of the public." (Council Directive 96/29 Euratom)

The BSS recognised that there would be different standards of QE. Many other countries ask for levels of competency related to levels of complexity. The basic competencies are laid down in a communication from the Commission's Official Journal, Annex I, C 133, 30/4/1998/ P.0003. These are the competences used as the basis for the RPA2000 Certificate of Competence and are listed in Annex A.

The communication states that the purpose of Annex I is to provide advice on the training and experience of the "qualified expert" as defined by Article 1 of the Directive 96/29/Euratom. Surveys carried out by the Commission across the Member States indicated a wide diversity in training and experience necessary for recognition of the qualified expert. It was therefore proposed that qualified experts should have received a basic syllabus, some of which may already been received through previous qualifications and training. The depth and level necessary would be dependant on the level and complexity of advice to be given by the qualified expert. They also went further by stating that "training by itself is not sufficient" and needs to be supplemented by appropriate practical experience.

Discussion

To ensure compliance with the requirements of the Basic Safety Standards Directive the scheme for "qualified experts" needs to ensure that the individual:

- has had appropriate training;

- holds appropriate qualifications and;
- has appropriate practical experience.

The depth and level of training and experience should be appropriate for the level and complexity of advice required of the "qualified expert". For some of the basic competences this could be a very basic understanding or even a general awareness.

Where an individual has a Certificate of Competence to act as a Radiation Protection Adviser (RPA) this should be sufficient to satisfy the requirements of the EU Directive. It is recognised that at the larger nuclear sites it may not be possible for an individual to have the full range of competences and this may have to be satisfied by having a corporate body of experts fulfilling the criteria for the qualified expert.

What needs to be addressed is the non-nuclear industry where those responsible for ensuring compliance with the regulatory requirements are not necessarily the appointed RPA. In some circumstances it is not necessary or justified to employ a full time RPA and organisations have chosen to employ a consultant as the RPA. In many situations it would be inappropriate for the consultant RPA to act as the qualified expert for compliance with the radioactive substances environmental legislation as they have neither the responsibility nor control over the day to day activities, nor do they necessarily have the intimate knowledge of the in-house waste management.

Whatever scheme is adopted it should not be overly complicated, appropriate for the level of risk and relatively easy to administer. For many smaller users it will not need to meet the standard of competency required to be an appointed Radiation Protection Adviser, as defined under the Ionising Radiations Regulations (IRR99). In some situations the work may not provide the diversity of work for the individual to gain their RPA certificate. They may also be perfectly capable of gaining a certificate but choose not to apply, as they do not wish to collect the evidence of work involving IRR99.

However the individual needs to be capable of interpreting the regulatory requirements and those of the authorisation and of making the appropriate judgements. They will also need to have sufficient authority and responsibility within the company to be able to advise at different management levels.

<u>Requirements of the Certification Scheme</u>

Any scheme needs to be sufficiently flexible to be able to address the diverse needs of different radiation employers. The employer will always retain responsibility for assessing suitability as regards his needs for a qualified expert.

Any scheme also needs to ensure that it is demonstrable, accountable, traceable and auditable to satisfy the regulatory authorities.

Before a scheme can be developed there are a number of questions that need to be asked:

- What is the range and extent of usage of radioactive materials?
- What does the regulator require in terms of documentary evidence to satisfy them that the individual has the competence to do the required task?

- What will be acceptable as relevant training and experience?
- How is it going to be administered and who is going to assess the individual's competence?

Range and extent of usage of radioactive materials

The competences required for different sectors can vary greatly. Sectors can range from industries who may only use small quantities of one or two radionuclides with short half lives, e.g. pharmaceutical research, to others such as hospitals and universities who use large quantities of longer lived isotopes.

Small users may be those who simply use the VLLW route for general laboratory waste and the remainder of the waste in the form of scintillation vials goes for incineration via an approved disposal contractor. Their needs are fairly basic and could be satisfied by a basic course with experience covering the requirements detailed in the authorisation.

A major hospital on the other hand will require a qualified expert with similar competences to the RPA certificate of competence. This could be someone in the Nuclear Medicine department, who is not the hospital RPA. Major hospitals will also hold large sources that are subject to HASS Regulations and all the additional controls they require.

Schools and college handle a small range of sources for research and teaching and very rarely have a need for disposal of sources. They are also subject to Exemption Orders and have no need for an authorisation or registrations, so in theory are not part of the scheme. It would be inappropriate to expect every RPS in a school to have a certificate of competence for such small quantities. It could however be deemed necessary for the Local Education Authority Radiation Protection Officer to hold a certificate or insist that they consult the LEA RPA, which is what currently happens.

Other industries may only have basic needs although they may have a registration for holding radioactive materials. There are companies who only hold one source in the form of a level gauge for production lines. There are companies who manufacture fire detection systems and either assemble the detectors into the cases of smoke detectors or who merely buy in the smoke detectors. The level of competence required will be minimal as they will normally not have waste for disposal and surplus sources will be returned to the manufacturer. In these circumstances it would be appropriate for the RPA to provide the relevant advice, as they will have an RPA.

Documentary Evidence

It is assumed that the regulators will require a certificate from an approved body detailing the competence to provide advice as the qualified expert with a particular level of expertise for a particular area.

The certificate will indicate that the person has the necessary training and practical skills required to perform the task required of him by his employer.

If the individuals assessment is via his employer, he may need a letter of appointment detailing his responsibilities and duties to his employer.

The Requirements for a Certification Scheme

The scheme needs to be sufficiently flexible to satisfy all needs, i.e. simple user to nuclear industry, basic requirements for low level users and more detailed technical requirements that will satisfy the more high level users. The scheme should be risk based, preferably with some cost-benefit analysis being conducted.

A training course covering all the elements of competence required will not satisfy the Commission's requirement as there needs to be an element of practical experience. It is stated in the Commission communication that a scheme needs to include the requirement for appropriate practical experience.

In addition to the Commission's basic syllabus there is a list of additional material where it is suggested that coverage of items, selected as appropriate, should be expanded to a greater depth according to the specific needs of the qualified expert. The list could be adopted and modified to suit the needs across the industries as a basis for identifying the areas where practical evidence should be submitted, as with RPA2000 (Annex B).

Basic Competences

It is not considered that all situations require a degree level qualification for a basic level of certificate. Training courses that could provide the basic core competences could be a City & Guilds in Radiation Safety Practice, HPA Foundation Course in Radiation Protection or certain modules from the Strathclyde Certificate of Professional Development in Radiation Protection, if appropriately modified. If an individual is experienced but cannot attend an appropriate training course, then a system could be set up where they sit an examination to assess their basic knowledge, similar to the DTI scheme for transport of dangerous goods.

Whichever training course or route is chosen it needs to cover the basic syllabus identified in the Directive given in Annex A. For those who have been through the process of applying for the RPA Certificate of Competence they will recognise the syllabus as the components forming the basic underpinning knowledge in Section 1 of the RPA2000 application form (Annex B).

With the exception of specialised posts in the nuclear industry, the basic core competences should be similar for everyone but the depth of knowledge required will vary and it is understood that the regulators are examining these requirements.

Practical Competences

The area where SNIFFER is lacking information is that of practical competences. There has been a suggested breakdown of users for the non-nuclear industry, e.g. research, NDT, medical, education, etc. however this does not address the disparate needs across the areas such as research.

For example if a university does not have a Medical School the use of isotopes may be limited to few radionuclides and the activities relatively small. Other universities that have a Medical School and Veterinary College may use significant quantities of radioisotopes that will be discharged to the environment by a variety of routes. They may have their own incinerator for dealing with clinical and hazardous waste.

To develop a scheme for assessing the practical and or detailed competences we need to establish the range and extent of usage of radionuclides. One method of achieving this is to refer to the Defra document detailing the types of "Practices" produced as a result of the implementation of "The Justification of Practices involving the use of Ionising Radiation 2004 (SI 2004, No.1769). The list of practices could be used as a basis for identifying the range of practical competences and have an indication as to the level of use and depth of knowledge required. A suggested matrix is shown below:

Purpose	**Type of Practice**	**Level of understanding required**	**Competence Assessment Route**
Production of nuclear fuel	Manufacture of fuel for research and materials testing reactors	Specialised knowledge	RWA/RSA Certificate Part of Corporate RSA Body
Production of Radioisotopes	Manufacture of radioisotopes using nuclear reactors or accelerators.	Detailed	RPA Certificate or equivalent
Safety Devices	Production of smoke detection systems using ionising radiation in fire detection.	Basic	Appropriate training course, application form supported by simple portfolio or Application form supported by two referees.
Radioactive tracers	Use of tracers for biomedical research	Basic	

Further columns could be added detailing the minimum training requirements.

<u>The Assessment Scheme</u>

It is suggested the scheme is in various levels, starting with basic competences and qualifications, leading on to the more detailed requirements, which would need to be assessed by an assessing body. The basic competences could be determined by the level of education and training supported by either a simple portfolio demonstrating practical competences or a questionnaire with tick boxes detailing the various ractical competences which are confirmed and supported by one or two referees. The referees could be the employer and supervisor or the RPA.

The form currently used by SEPA (Annex C) could be adopted for use for assessing competence at a basic level.

For a more detailed assessment, the practical competences could be assessed by an independent assessing body such as RPA2000 and the application form along similar

lines, but detailing RSA93 requirements. It is unlikely that the regulators would wish to be involved in this approvals process as there could be a conflict of interest if a regulator approved someone and then chose to prosecute them.

For a scheme similar to RPA2000 a suggested syllabus is given below:

Practical Competencies for Radioactive Substances/Waste Advisers.
The items listed here should be used to judge how the applicant meets the requirements for interpreting and applying data, supervising procedures and advising management. (Criteria of competence).

Practical Competences	Suggested areas covered
1. Legislative Compliance a) Identify activities subject to compliance with radioactive substances legislation. b) Identify shortfalls in compliance and standards c) Promote action to rectify shortfalls	*Legislation* *- RSA93 (Authorisations and Registrations), HASS, Contaminated Land, Hazardous Waste, Trans-frontier Shipments, Environmental protection*
2. Updating and maintenance of policy for the management of radioactive substances a) Contribute to updating the safety policy and associated documentation for the management and control of radioactive substances. b) Communicate the policy and arrangements. c) Contribute to the identification and specification of responsibilities for the management of radioactive substances.	*-Policy for compliance, management of sources, accountancy, procurement, control and disposal of material.* *-Documentation* *-Roles of RPO, RPS, users, management responsibilities*
3. Supporting risk management a) Provide information and advice on the management of radioactive substances. b) Contribute to problem solving.	*-Reporting to regulators and management* *-Advising users*
4. Assessing risk to personnel and environment a) Identify hazards and control measures for management of radioactive substances. b) Assess the risks associated with radiation sources and their discharge to the environment.	*- Assessment of disposal routes, decay storage, packaging, waste stores* *-Doses, critical groups*
5. Establishing controls a) Assess the environmental impact from discharges of radioactive waste. b) Assess best practicable means for discharges to the environment. c) Design engineering and procedural controls to minimise impact on the environment. d) Contribute to the implementation of sound environmental controls. e) Promote and support the development of emergency and contingency plans.	*-Radiological assessments, modelling, risk assessments* *- BPM, BPEO* *-Abatement, delay tanks, waste conditioning* *- Disposal routes, VLLW, LLW, contaminated land, selection of disposal routes* *-Developing site plans, local procedures*

6. Monitoring controls a) Monitor and evaluate risk management activity. b) Identify shortfalls in management of radioactive substances. c) Identify shortfalls in the control of personal and environmental exposure. d) Evaluate and improve contingency arrangements.	*-Audit, inspections, accountancy, monitoring discharges* *-Incidents, nvestigations, reviews* *-Incidents, investigations, formal reviews* *-Review arrangements, recommend revisions, practice arrangements*
7. Cultivating safety awareness a) Promote and support management commitment to the safe management of radioactive substances. b) Promote and support consultation between employer and employees and contribute to the resolution of safety related conflict.	*- Promote environmental awareness, encourage best practice, control procurement* *- Raise awareness at Safety Committee and Environmental Committee meetings.*
8. Training of staff a) Identify training needs. b) Provide training to enable competency to be achieved.	*- Training for users of radioactive materials on use, accountancy, disposals, discharges, transport*
9. Contribute to advances in safety a) Contribute to advances in management of radioactive substances. b) Evaluate advances and provide information and support to local management of radioactive substances and waste disposal.	*- Maintain knowledge base, participate in seminars, meetings, liaise with regulators* *- Ensure local management and users aware of current and future requirements*

Assessing Body

The scheme will require an assessing body to process and assess applications. A body similar to RPA2000 would need to be set up if it intended that applications are to be assessed independently. As stated previously it is inappropriate for the assessment to be carried out by the regulatory bodies because of conflicts of interest.

Since its introduction, the RPA2000 scheme has worked well. After its initial introduction there were some teething problems relating to compilation of portfolios and the type of evidence required. Detailed guidance giving examples of the type of evidence required has been produced to assist applicants with collating information for their portfolio.

The scheme has been so successful that it is currently the only scheme for the assessment of competence for Radiation Protection Advisers and it is well recognised by those in the industry.

The assessing body would need to be set up as a company, with charitable status and would need a management board in addition to assessors. There would need to be guidance on how the company is to be run, administration of the scheme and how an appeals procedure is adopted. If preferred RPA2000 could be approached and they could use their existing scheme, with relevant modifications, to run the qualified expert assessment scheme.

If such a scheme were to be adopted for the radioactive substances consideration would need to be given to who would be the assessing body. The assessors for RPA2000 are volunteers who carry out the task in their own time for no remuneration. It is unlikely that the current assessors would wish to add to their burden as the work for RPA2000 has at times been quite onerous. A portfolio can take quite a few hours to read through and assess against the various competences. There is also the added complication where evidence is not considered adequate and the assessor has had to search through the rest of the portfolio to find suitable evidence. This is not recommended, but most assessors feel obliged to assist the applicant where they can.

The RSA scheme is also likely to have a greater number of applicants if the qualified expert is to be someone in-house. Many independent RPAs cover a number of companies and each of these companies may require someone to be approved as the qualified expert for radioactive substances.

To overcome the difficulty, it may be necessary to recruit additional volunteers specifically for the RSA assessment or for some recompense to be paid to RPA2000 assessors.

Conclusion

The scheme for assessing competence of a Qualified Expert to advise on management of radioactive substances and environmental discharges and disposals needs to be sufficiently flexible to address the requirements of a range of sectors across the nuclear and non nuclear industry, including medical, research and teaching.

It is suggested that there is a basic level certificate for the small users and a more formal certification scheme for the larger users, adopting the RPA2000 scheme. Where someone has a certificate of competence as a Radiation Protection Adviser, unless they are in a specialised waste management post, they would not be expected to require a certificate of competence as a Radioactive Substances/ Radioactive Waste Adviser. They should already have sufficient knowledge of the requirements of the environmental legislation and experience of its interpretation to adequately perform the task.

Any certificate issued would need to be endorsed with the level of expertise and the sector to which it applies.

Sheila Liddle
Consultant RPA

15th March 2007

ANNEX A

BASIC SYLLABUS FOR THE QUALIFIED EXPERT IN RADIATION PROTECTION

The depth to which topics of the syllabus should be covered should depend on the level of advice/input required from the qualified expert.

Basic atomic and nuclear physics

Basic biology

Interaction of radiation with matter

Biological effects of radiation

Detection and measurement methods (including uncertainties and limits of detection)

Quantities and units (including dosimetry underlying regulatory quantities)

Basis of radiation protection standards (e.g. epidemiology, linear hypothesis for stochastic effects, deterministic effects)

ICRP principles:

- Justification
- Optimisation
- Dose limitation

Practices and interventions (including natural radiation especially radon)

Legal and regulatory basis:

- International recommendations/conventions
- European Union legislation
- National legislation and regulations (including competent authorities)

Operational radiation protection:

- Types of sources (sealed, unsealed sources, X-ray units and accelerators)
- Hazard and risk assessment (including environmental impact)
- Minimisation of risk
- Control of releases
- Monitoring
- Area monitoring
- Personal dosimetry (external, real time and internal)
- Biological monitoring
- Critical group concept/dose calculation for critical group
- Ergonomics (e.g. user-friendly design and layout of instrumentation)

- Operating rules and contingency planning
- Emergency procedures
- Remedial action/decontamination
- Analysis of past incidents including experience feedback

Organisation of radiation protection:

- Role of qualified experts
- Safety culture (importance of human behaviour)
- Communication skills (skills and ability to instil safety culture into others)
- Record keeping (sources, doses, unusual occurrences, etc.)
- Permits to work and other authorisations
- Designation of areas and classification of workers
- Quality control/auditing
- Dealing with contractors

Waste management

- Principles of management
- Principles of disposal

Transport

Practical work/exercises (e.g. monitoring, laboratory techniques, handling of emergencies, etc.)

ANNEX B

Assessor's Report (New Applications)

Ref. _____ **Name** _____ .

BASIC UNDERPINNING KNOWLEDGE FOR RADIATION PROTECTION ADVISERS

The components of the basic syllabus detail the extent and depth of the knowledge and training required by an RPA under IRR99. This can be found at Annex 3 of the HSE Statement on Radiation Protection Advisers and is based on the requirements for a 'qualified expert' as defined in Article 1 of the Basic Safety Standards Directive 96/29/Euratom. The three levels of the depth of knowledge are defined as follows:

Depth of knowledge	Definition
GA	**General Awareness**. Knows that the topic exists and aware of its significance to work activities in context. Also knows how and where to obtain help on the topic if needed.
BU	**Basic Understanding**. Has a basic understanding of the topic with a level of detail that allows the RPA to apply it to familiar work activities in context. If necessary, can research further knowledge using readily available sources and apply it in less familiar circumstances.
DU	**Detailed Understanding**. Has a good understanding of the topic and the underlying principles and can apply the knowledge in appropriate contexts. Can apply the knowledge working from basic principles to deal with situations in new or unfamiliar areas and can identify and influence the peripheral and long-term issues arising from its application.

A1.3 Cross-reference Table No.1

Components of Basic Syllabus	Depth	Assessed depth	Evidence	Assessment	
				Sufficient	Insufficient
Basic atomic and nuclear physics	**BU**				
Basic biology	**BU**				
Interaction of radiation with matter	**BU**				
Biological effects of radiation	**BU**				
Detection and measurement methods (including uncertainties and limits of detection)	**BU**				
Quantities and units (including dosimetry underlying regulatory quantities)	**BU**				
Basis of radiation protection standards (e.g. epidemiology, linear hypothesis for stochastic effects, deterministic effects)	**BU**				
ICRP principles: • justification;	**BU**				
• optimisation;	**DU**				
• dose limitation	**DU**				
Practices and interventions (including natural radiation especially radon)	**BU**				

Legal and regulatory basis: • international recommendations/conventions;	**GA**				
• European Union legislation;	**GA**				
• national legislation (including competent authorities): - IRR99 - other relevant legislation	 **DU** **BU**				
Operational radiation protection: • types of sources (sealed, unsealed, x-ray units, accelerators);	**BU**				
• hazard and risk assessment (including environmental impact);	**DU**				
• minimisation of risk;	**DU**				
• control of releases;	**BU**				
• monitoring: area, personal dosimetry (external, real time and internal), biological;	**BU**				
• critical dose concept/dose calculation for critical group;	**GA**				
• ergonomics (e.g. user-friendly design and layout of instrumentation);	**GA**				
• operating rules and contingency planning;	**BU**				
• emergency procedures;	**BU**				
• remedial action/decontamination;	**BU**				
• analysis of past incidents including experience feedback	**GA**				
Organisation of radiation protection: • role of qualified experts;	 **BU**				
• safety culture (importance of human behaviour);	**BU**				
• communication skills (skills and ability to instil safety culture into others);	**BU**				
• record keeping (sources, doses, unusual occurrences, etc.);	**BU**				
• permits to work and other authorisations;	**BU**				
• designation of areas and classification of workers;	**DU**				
• quality control/auditing;	**BU**				
• dealing with contractors	**GA**				
Waste management: • principles of management;	 **GA**				
• principles of disposal	**GA**				
Transport	**GA**				

This syllabus should be reinforced by practical work/exercises (eg monitoring, laboratory techniques, handling of emergencies, etc.)

4. Practical Competencies for Radiation Protection Practitioners.

The items listed here should be used to judge how the applicant meets the requirements for interpreting and applying data, supervising procedures and advising management. (Criteria of competence).

Practical competencies 9 Main Categories with sub-categories	Evidence	Assessment	
		Sufficient	Insufficient
1. Supporting Risk Control a) Provide information and advice			
b) Contribute to problem solving			
c) Facilitate group working			
2. Updating Radiation Safety policies a) Contribute to the updating of the radiation safety policy and associated documentation			
b) Communicate the radiation safety policy and associated documentation			
c) Contribute to the identification and specification of radiation safety responsibilities			
3. Assessing risk a) Identify sources or potential sources of radiation exposure			
b) Assess risks of exposure to radiation sources			
4. Establishing Radiation Controls a) Design engineering and procedural controls to sound radiological principles			
b) Contribute to the implementation of radiation controls			
c) Promote and support the development of contingency plans			
5. Monitoring of Controls a) Monitor and evaluate risk control activity			
b) Identify shortfalls in radiation and contamination controls			
c) Identify shortfalls in the control of personal exposure			
d) Evaluate and improve contingency plans			
6. Cultivating Safety Awareness a) Promote and support management commitment to radiation safety			
b) Promote and support consultation between employer and employees			
c) Contribute to the resolution of safety related conflicts			
7.Legislation Compliance a) Identify activities subject to legislation			
b) Identify compliance shortfalls			

c) Promote action to rectify shortfalls			
8. Training of Staff a) Identify training needs			
b) Measure current competencies			
c) Provide training and advice			
9. Contribute to Advances in Safety a) Contribute to advances in radiation safety			
b) Provide information and support to enable others to contribute to advances			
c) Evaluate advances in radiation safety practice			

ANNEX C

APPLICATION IN SUPPORT OF THE PROPOSAL OF PERSON(S) AS A QUALIFIED EXPERT

The information submitted in this application form and any evidence submitted to support the application will be retained by SEPA. SEPA reserves the right to request proof of any qualification claimed. If there is insufficient space on the application form please continue responses on a separate sheet, clearly identifying which question is being answered.

PART 1 - AUTHORISATION TO WHICH THIS APPLICATION APPLIES

SEPA's recognition of an individual or corporate body to act as a Qualified Expert will be linked to an particular authorisation granted under the Radioactive Substances Act 1993. Part 1 of this application requires information so that SEPA can assess the suitability of the proposed Qualified Expert against the authorisation. If this form is being submitted with an application for an authorisation, the authorisation certificate number need not be included.

Authorisation certificate number:	
Authorisation Holder:	
Authorised Premises:	

PART 2 – PROPOSED QUALIFIED EXPERT DETAILS

This part of the application form requires information on the proposed Qualified Expert and must be completed in full.

Title:	
Surname:	
First name(s):	
Business address: (for correspondence)	
Telephone number:	
Fax number:	
Email address:	

PART 3 – QUALIFICATIONS AND TRAINING

This part of the application form requires information on the qualifications and training that the proposed Qualified Expert has that are applicable to his/her suitability to be recognised as a Qualified Expert by SEPA. This part must be completed, it is not sufficient to refer to the Portfolio of Evidence..

3.1 Degrees, diplomas, academic awards and professional qualifications

Please include information on any relevant academic qualification and any relevant professional qualification e.g. RPA certification.

Qualification:	
Grade achieved:	
University or awarding body:	
Date awarded:	
Principal subjects:	

3.2 Relevant training courses attended

Please include a description of any other relevant training courses attended; this should include internal and external courses. Please indicate whether the performance at this course was formally assessed and give the result of that assessment if applicable. Attendance will be used in assessing the level of knowledge of the principles and application of radiation protection and, if approved, could be counted as contributing to one year of the "three years relevant experience" requirement.

Course title	Course organiser	Course duration and dates	Assessed course results (if applicable)

3.3 Current membership of professional bodies and learned societies

Membership of professional bodies and learned societies is intended to assist in assessing professional status, list only those considered relevant to this application.

Professional body or learned society	Membership level or accreditation status	Date awarded

PART 4 – RELEVANT PROFESSIONAL RECORD

All of this section must be completed and should be used to demonstrate that the proposed Qualified Expert has at least three years relevant experience.

4.1 Employment history

This question requires the applicant to list employment covering at least the previous three years outlining full time experience in:

- *Carrying out physical, technical and radiochemical tests, enabling dose assessments to be made*
- *Advising orally or through written procedures to ensure protection of workers and the public*
- *Experience of the correct operation, calibration and maintenance of protective equipment.*

Dates employed	**Position held, name and address of company or organisation**	**Description of duties**

4.2 Current organisational responsibility

This part should be used to show the level of responsibility, not only with respect to radiation protection, but also in relation to line management functions and how advice given by the Qualified Expert will be implemented.

Please include the following information:

- An organogram showing the proposed Qualified Expert's position within the company or organisation.

- A description of the responsibilities of the proposed Qualified Expert in his nominated role.
- An estimate of the percentage of time spent by the proposed Qualified Expert on matters directly related to radiation testing, monitoring and radiation protection.

4.3 Portfolio of evidence

Please provide a portfolio of evidence containing sufficient information to support the training, knowledge and competence described in this application.

PART 5 – SIGNATURE AND REFEREE

The proposed Qualified Expert must sign the application form and have this and the Portfolio of Evidence authenticated by a line manager, or other suitable person with knowledge of their work, and signed by them to that effect.

5.1 Declaration and signature of proposed QE

I certify that the information given by me in this application is correct and declare that I undertake a commitment to remain active and acquainted with the scientific, technical and regulatory developments required by a Qualified Expert.

Signature of proposed Qualified Expert:	
Date:	

5.2 Declaration and signature of Referee

I certify that I have examined the application form and Portfolio of Evidence compiled by the proposed Qualified Expert and that it truly reflects the extent and nature of their work. I also certify that I know of no reason why the proposed Qualified Expert would be unsuitable to undertake the duties of a Qualified Expert as set out in Article 47(1) of the Basic Safety Standards Directive.

Name of referee (print):	
Job title:	
Address:	
Telephone number:	
Signature of referee:	
Date:	