

CRITERIA FOR APPOINTMENT OF PERSONS WITH RESPONSIBILITY FOR RADIATION SAFETY AT FACILITIES AS WELLAS OTHER OCCUPATIONALLY EXPOSED WORKERS.

A. APPOINTMENT OF REGULATORY OFFICERS

Purpose of appointment

The Regulatory Authority needs qualified staff who are technically competent to carry out regulatory functions to ensure protection of staff, patients and public as appropriate and safety of radiation sources at the workplace.

A Regulatory Officer is an individual who, by virtue of certification by an appropriate board or society, professional license or academic qualification and experience is duly recognised as having expertise in a relevant field of specialisation. Regulatory officers are required to enforce effective security and safety culture in authorised practices and facilities.

Legal requirement

By national legislation and regulations, the Nuclear Regulatory Authority is to appoint Regulatory Officers.

The Regulatory Authority shall approve the appointment criteria for the Regulatory Officers. The Regulatory Authority shall keep a registry of approved Regulatory Officers and maintain the records current.

Role of the Regulatory Officer

The Regulatory Officer shall enforce the regulatory requirements to ensure that the licensee/registrant comply with the applicable regulations.

Responsibilities of the Regulatory Officer

- Perform inspections based on requirements of existing regulations and in accordance with established inspection priorities and schedules.
- Carry out enforcement action as appropriate
- Investigate potential for abandoned, orphan sources
- Follow up on status of potential users that have not submitted appropriate notifications

Criteria for appointing Regulatory Officers

The Nuclear Regulatory Authority shall appoint Regulatory Officers based on the following criteria.

The criteria will include the following:

1. A postgraduate degree in Radiation Protection, Postgraduate Educational course in radiation Protection and safety of radiation sources (PGEC), Medical physics, engineering or other physical sciences or a suitable combination of other qualifications and experience
2. Education and Training, knowledge and experience of radiation protection and safety.
3. Sufficient work experience directly concerned with radiation protection and safety relevant to facility and activity.
4. Sufficient evidence of Continued Professional Development (CPD) activities.

B. APPOINTMENT OF RADIATION PROTECTION OFFICERS

The Licensees and registrants need qualified staff, technically competent to implement the Radiation Protection Programme of authorised practices and activities to ensure the protection of staff, patients and public as appropriate, and the safety and security of radiation sources at the workplace.

An RPO is a person technically competent in Radiation Protection matters relevant for a given type of Regulated Activity with Regulated Material who is designated by the Licensee to oversee the application of relevant requirements established in this regulation. RPO's have common core information on protection and safety as related to their field of practice and need to have specific personal attributes, such as communication skills, leadership and analytical skills, human – machine interface skills and multitask management skills. The RPO shall also have knowledge about applicable regulations.

Legal requirement

By national legislation and regulations each facility and activity is required to engage the services of a Radiation Protection Officer.

The Nuclear Regulatory Authority shall approve the appointment of the Radiation Protection Officer(s).

The Nuclear Regulatory Authority shall keep a registry of approved Radiation Protection Officers and maintain the records current.

Role of the Radiation Protection Officer (s)

A Radiation Protection Officer (RPO) is a specialist in radiation safety and compliance matters. The role of the RPO is to support management of the authorised practice or activity work with ionising radiations by ensuring arrangements are in place to manage radiation risks, so that work is carried out safely and in compliance with Regulations so that employees and the public are protected from the harmful effects.

The Radiation Protection Officer(s) shall advise the licensee with respect to the following:

- In consultation with the Qualified Expert will provide safety assessment review during the lifetime of the facility.
- Prior critical examination of operational plans,
- Acceptance into service of new equipment and facilities,
- Designation of controlled or supervised areas:
- Monitoring of the working areas;
- Written procedures for working areas,
- Regular checking of the effectiveness of protective devices and techniques,
- Regular calibration of measuring equipment,
- Emergency planning and response to nuclear accident and radiological emergency where appropriate.
- Investigation and reporting on incidents and accidents when they do occur.
- Safety assessment and Safety culture
- Any other requirements with respect to the existing regulations.

Responsibility of the licensee/registrant

The licensee / registrant has the primary responsibility for radiation protection and safety. The responsibilities are:

1. Appoint one or more Radiation Protection Officers in writing, and such appointment shall include the scope of the work of the Radiation Protection Officer
2. The appointed Radiation Protection Officer shall be empowered
 - To stop any unsafe operations

- Initiate, recommend, or provide corrective actions and verify implementation of corrective actions

Criteria for appointing Radiation Protection Officers

The Nuclear Regulatory Authority shall approve the appointment of the Radiation Protection Officer(s).

The criteria include the following:

1. A degree in Radiation Protection, Postgraduate Educational course in Radiation Protection and safety of radiation sources (PGEC), Medical physics, engineering or other physical sciences or a suitable combination of other qualifications and experience
2. Education and Training, knowledge and experience of radiation protection and safety
3. Sufficient work experience directly concerned with radiation protection and safety relevant to facility and activity.
4. Sufficient evidence of Continued Professional Development (CPD) activities.

Approval Process

1. Candidates must supply written evidence through an employer or directly to the Nuclear Regulatory Authority proving that they meet the criteria for a particular application.
2. The approval of the candidate may be subject to conditions and will be valid for a period not exceeding 3 years.

C. APPOINTMENT OF QUALIFIED OPERATORS

A Qualified Operator is a trained person who has the responsibility for the day to day use of radiation sources, radiation generators and has communication, analytical and human-machine interface skills to perform the work effectively and safely. Leadership skills may be necessary in supervisory functions. Qualified operators should be trained in the operation of the equipment and should have a high level of expertise in their area of work.

Educational requirements for qualified operators will vary considerably depending on the application. For many applications, a secondary educational level should be the minimum requirement. On the job training is essential. A qualified operator should have had several years of supervised working experience in a specific practice before being recognised as qualified.

Legal requirement

By national legislation and regulations, each facility and activity is required to engage the services of a qualified operator.

The Nuclear Regulatory Authority shall approve the appointment of the qualified operator. The Nuclear Regulatory Authority shall keep a registry of approved Qualified Operators and maintain the records current.

Role of the Operator

The role of the operator varies from practice to practice. The competence of Qualified Operators in facilities and activities which licensees/registrants are required to appoint during the authorisation process will be assessed by the Nuclear Regulatory Authority.

- The Operator shall operate equipment and facilities in accordance with approved procedures. The Operator shall follow local rules designed to foster safety and security culture.
- The Operator shall be conversant with emergency response procedures and participate as and when required.
- Implementation of QC / QA procedures.

Responsibility of the licensee/registrant

The licensee/ registrant has the primary responsibility for radiation protection and safety. The responsibilities are:

Appoint one or more Qualified Operators in writing, and such appointment shall include the scope of work that the operator is required to undertake.

Criteria for appointing Qualified Operators

The Nuclear Regulatory Authority shall approve the appointment of the Qualified Operator (s).

The criteria will include the following:

- A secondary/tertiary education with technical and scientific background relevant to the specific practice.
- Education and Training, knowledge and experience of radiation protection and safety of radiation sources in the specific practice, local rules and procedures, including safety and warning systems, and emergency procedures
- Sufficient work experience directly concerned with radiation protection and safety relevant to facility and activity.

D. APPOINTMENT OF QUALIFIED EXPERTS

Purpose of appointment

Licensees and registrant need to have access to appropriate radiation protection and safety advice to ensure protection of staff, patients and the public as appropriate and safety of radiation sources at the workplace. This service is to be provided by a qualified expert.

A qualified expert is an individual who, by virtue of certification by an appropriate boards or society, professional license or academic qualification and experience is duly recognised as having expertise in a relevant field of specialisation. Qualified experts are required to provide sound professional advice to promote effective and sound safety culture in authorised practices and facilities.

Legal requirement

By national legislation and regulations each facility and activity is required to engage the services of a qualified expert.

The Regulatory Authority shall approve the appointment of the qualified expert. The Regulatory Authority shall keep a registry of approved qualified experts and maintain the records current.

Role of the qualified expert

The qualified expert shall provide advice to enable the licensee/registrant comply with the regulations in order to achieve and maintain optimal level of radiation protection and safety.

The competence of qualified experts in facilities and activities which licensees/registrants are required to appoint during the authorisation process will be assessed by the Regulatory Authority and in consultation with appropriate professional bodies in the various fields of specialisation.

Responsibility of the licensee/registrant

The licensee/ registrant has the primary responsibility for radiation protection and safety. The responsibilities are:

1. Appoint one or more qualified experts in writing and such appointment shall include the scope of the advice which the qualified expert is required to give.
2. Consult the qualified expert for advice with respect to the following:
 - Prior critical examination of operational plans,
 - Acceptance into service of new equipment and facilities,
 - Designation of controlled or supervised areas:
 - Monitoring of the working areas;
 - Written procedures for working areas,

- Regular checking of the effectiveness of protective devices and techniques,
- Regular calibration of measuring equipment,
- Emergency planning and response to nuclear accident and radiological emergency where appropriate.
- Investigation and reporting on incidents and accidents when they do occur.
- Safety assessment and Safety culture
- Any other requirements with respect to the existing regulations.

Criteria for appointing qualified experts

The Regulatory Authority in consultation with the relevant professional societies and educational institutions will establish a qualifying criterion for the appointment of qualified experts.

The generic criteria will include the following:

1. A postgraduate degree in diagnostic radiography, medical physics, medicine, engineering or other physical science or a suitable combination of other qualifications and experience
2. Education and Training, knowledge and experience of radiation protection and safety
3. Sufficient work experience directly concerned with radiation protection and safety relevant to facility and activity.
4. Sufficient evidence of Continued Professional Development (CPD) activities.

FACILITY AND ACTIVITY SPECIFIC CRITERIA FOR APPOINTMENT OF QUALIFIED EXPERTS

Facility and Activity	Criteria
1. Diagnostic and Interventional Radiology	<ul style="list-style-type: none"> • Postgraduate Degree in diagnostic radiography, medical physics • Five (5) years full time work experience in diagnostic and interventional radiology department; • Attendance at radiation protection training course within the past four (4) years covering topics in radiation protection and safety. • Evidence of Continuous Professional Development in the subject area.
2. Radiotherapy	<ul style="list-style-type: none"> • Two (2) years Postgraduate training in Medical Physics • Five (5) years full time work experience in radiotherapy department, • Attendance at radiation protection training course within the past four (4) years appropriate to Medical Physics, • Evidence of Continuous Professional Development in the subject area.
3.Nuclear Medicine	<ul style="list-style-type: none"> • Postgraduate Degree in physical science, or diagnostic radiography, or medical doctor (Nuclear Medicine Physician); • Five (5) years full time work experience in nuclear medicine department; • Attendance at radiation protection training course within the past four (4) years covering topics in radiation protection and safety

	<ul style="list-style-type: none"> • Evidence of Continuous Professional Development in the subject area.
4. Industrial radiography and Non-destructive testing.	<ul style="list-style-type: none"> • First Degree in physical and Biological Sciences or Engineering, • Five (5) years full time work experience in an industrial radiography facility • Attendance at radiation protection training course within the past four (4) years covering topics in radiation protection and safety • Evidence of Continuous Professional Development in the subject area.
5. Research and industrial Irradiator	<ul style="list-style-type: none"> • First Degree in physical and Biological Sciences or Engineering, • Five (5) years full time work experience in a research and industrial Irradiator facility • Attendance at radiation protection training course within the past four (4) years covering topics in radiation protection and safety • Evidence of Continuous Professional Development in the subject area.
6. Nuclear Gauging and well logging	<ul style="list-style-type: none"> • First Degree in physical and Biological Sciences or Engineering, • Five (5) years full time work experience in a Nuclear Gauging and well logging facility • Attendance at radiation protection training course within the past three (3) years covering topics in radiation protection and safety • Evidence of Continuous Professional Development in the subject area.

7. Research Reactors	<ul style="list-style-type: none"> • Postgraduate Degree in physical science, nuclear physics or nuclear engineering • Five (5) years full time work experience in a Research reactor facility. • Attendance of specialist training courses in nuclear safety, safeguards, criticality assessment, spent fuel and radioactive waste management within the last four (4) years. • Evidence of Continuous Professional Development in the subject area.
8. Power Reactors	<ul style="list-style-type: none"> • Postgraduate Degree in physical science, nuclear physics or nuclear engineering, • 7-10 years' full time work experience in a Power reactor facility. • Attendance of specialist training courses in nuclear safety, safeguards, criticality assessment, spent fuel and radioactive waste management within the last four (4) years • Evidence of Continuous Professional Development in the subject area.

Approval Process

1. Candidates must supply written evidence through an employer or directly to the Regulatory Authority proving that they meet the criteria for a particular application.
2. Application to be reviewed by a panel appointed by the Regulatory Authority.
3. Applicant may be called for interview.
4. The approval of the candidate may be subject to conditions and will be valid for a period not exceeding 5 years.
5. In case of rejection, the panel must state which criteria have not been met by the candidate.

Once approved by the Regulatory Authority the Employer or licensee/registrant may appoint that person as a Qualified Expert.

Re-Approval

Candidates for re-approval must supply documented evidence of Continued Professional Development at least six months prior to the expiry date.

Assessment prior to approval by the Regulatory Authority

Before approval, the nominated applicant by the employer or licensee/ registrant will be assessed by the Regulatory Authority in the following areas:

1. Education and training relevant in the area of specialisation.
2. Evidence of working experience in the area of specialisation.
3. Attendance at Conferences /Seminars / workshops.
4. Technical or Scientific Publications and or Papers.
5. Technical and Professional Services.
6. Evidence of Continued Professional Development (CPD).

E. APPOINTMENT OF HEALTH PROFESSIONALS

Introduction

A health professional is an individual who provides preventive, curative, promotional or rehabilitative healthcare services in a systematic way to patients, families or communities. A health professional (also known as a health worker) may operate within Radiology, Nuclear Medicine or Radiotherapy facilities.

Role of the health professional

Health professionals play a central and critical role in improving access and quality health care for the population. They provide essential services that promote health, prevent diseases and deliver health care services to individuals, families and communities based on the primary health care approach.

The health professionals in the medical sector (especially in Nuclear Medicine, Radiotherapy and Radiology Departments) with competence in Radiation Protection and Safety is required to be appointed to provide health care services.

Responsibility of the licensee/registrant

The licensee/ registrant has the primary responsibility for radiation protection and safety. The responsibilities in respect to the safety of health professional working in Nuclear medicine, Radiotherapy and Diagnostic Radiology Facilities is to:

1. Ensure that all health professionals posted to areas where Radiation is used are adequately trained in the basics of Radiation Protection and Safety to enable them work safely.

Criteria for appointing health professionals

Health professional are appointed by their respective professional or appointing agencies (Medical and Dental Council, Ghana Health Services, Nurses and Midwifery Council etc.).

However, for a health professional to be appointed to work in a Nuclear Medicine, Radiotherapy or Radiology department of the Medical facility, the Radiation Protection Officer, should ensure that the appointee has been taken through adequate training on the effects of Radiation and other Basic Radiation Protection Training commensurate with the risk of the facility or has undergone such training in Radiation Protection commensurate with the risk at the facility.

ASSESSMENT FOR APPOINTMENT AS A QUALIFIED EXPERT

Item		Assessment area	No. of activity	Min man-hrs.	Max. Man-hrs.
Education and Training Course attended	I	Following tertiary level education in relevant radiation protection subject within the last 3years	1 or 2	40	80
	ii	Attending and passing a formal examined radiation safety course within the last 3years	1 or 2	40	80
	iii	Attending a formal radiation safety course within the last 3 years	1 or 2	40	80
	iv	Attendance at a radiation safety workshop within the last 3 years	1 or 2	40	80
	v	Attendance at Management related course within the last 3 years	1 or 2	24	48

Item		Assessment area	No. of activity	Min. Man-hrs.	Max. Man - hrs.
Attendance at Conferences /Seminars	I	Attendance in international, national meetings of recognised institutions within the last three years	1 or 2	40	80
	ii	Lecturing as an invited or keynote speaker within the last three years	1or 2	1	2
	iii	Delivering a Radiation Protection related presentation within the last three years	1or 2	1	2
	iv	Attendance at Radiation Protection related committee meeting within the last three years	1 or 2	3	6
	v	Attendance at Management related conference, seminar or symposium within the last 3 years	1 or 2	24	48

Item		Assessment area	Min. No. Papers	Max.
Technical or Scientific Publications and or Papers	I	Articles in a peer reviewed journal within the last three years	3	6
	ii	Article in a non-professional review/magazine/newspaper within the last three years	1	2
	iii	Paper for government or national advisory body within the last three years	1	2

Item		Assessment area	Min	Max.
Technical and Professional Services	I	Membership of radiation related body, committee, working group or official sub-committees within the last three years	1	2
	ii	Membership of scientific or management committee of other professional, governmental or international bodies	1	2

Item		Assessment area	Min	Max.
Self-Development	I	Work on non-Radiation Protection related self-development that is felt to be relevant to Continued Professional Development(CPD) which is not covered in other categories within the last three years	1	2
	ii	Structured private study in Training skills, computer skills, public speaking and communication skills within the last three years	1	2

Item		Assessment area	Max Per activity	Max. per year	Max. per 3 years
Training; Health and Safety Strategies	I	Development of Radiation safety strategy or policy that is implemented in an organisation (per submission)	10	30	40
	ii	Development of Radiation Safety Course (per hour)	1	10	20
	iii	RP related lecturing and/or examiner (per 2 hours)	2	20	60
	iv	Other Health and Safety lecturing (per 2 hours)	1	15	30

Item		Assessment area	Min	Max.
Others	I	Proven provision of radiological advice	1	2
	li	Assessing RP related emergency exercises (Initial per employer)	1	2
	iii	Assessing RP related emergency exercises (subsequent)	1	2
	iv	Performing other emergency exercises	1	2
	v	Performing RP Risk Assessment (Initial, per practice area)	1	2
	vi	Performing RP Risk Assessment (subsequent)	1	2
	vii	Direct responsibility of Radiation Protection at a facility level	1	2