Overview of the role

Providing radiological monitoring services in the nuclear industry to protect people, plant and the environment from contamination.

Standard in development

L2: Nuclear health physics monitor

Title of occupation

Nuclear health physics monitor

UOS reference number

ST0290

Core and options

No

Option title/s

Level of occupation

Level 2

Route

Engineering and manufacturing

Typical duration of apprenticeship

24 months

Target date for approval

01/01/0001

Resubmission

No

Would your proposed apprenticeship standard replace an existing framework?

No

Does professional recognition exist for the occupation?

Yes

Occupation summary

This occupation is found in the nuclear sector on a range of sites including waste management, decommissioning, and operational nuclear plants. Their working conditions are varied and may involve wearing specialist safety equipment, shift working and working on sites and facilities running 365 day operations. They are expected to work independently and as part of a team. They need to be able to work with minimum supervision, in a professional manner, taking responsibility for the quality and accuracy of the work they undertake. People working on nuclear sites are required to undergo security clearance vetting.

The broad purpose of the occupation is to provide radiological monitoring services within the nuclear industry to protect people, plant and the environment. It is to provide protection from the adverse effects of ionising radiation and contamination. They may work indoors or outdoors, work at height or in confined spaces. They may be required to work shifts and in hazardous areas.

In their daily work, an employee in this occupation interacts with other engineers, technicians and visiting staff present on a nuclear site. They work independently or as part of the larger team. They typically work under both supervised and unsupervised direction of an engineer, technician or supervisor.

An employee in this occupation will comply with regulatory and organisational requirements. They must work within the specified organisational health, safety, and environmental regulations. They must use the appropriate protective clothing, equipment and resources. They are responsible for the correct use and control of equipment. They must follow organisationally defined and approved procedures when carrying out monitoring of nuclear related systems. All work must be completed safely and efficiently as directed by supervisory staff.

Typical job titles

Health physics monitor Health physics surveyor

Are there any statutory/regulatory or other typical entry requirements?

No

Occupation duties

DUTY	KSBS
Duty 1 Conduct radiological and contamination control measures prior to, during and after commencing work.	K1 K2 K11 K12 S1 B1 B3 B4

DUTY	KSBS
Duty 2 Carry out monitoring of surface and airborne contamination and radiation dose rates using radiological instruments.	K12 K13 K14 S2 S3 B1 B2 B4
Duty 3 Carry out ionising radiation surveys in compliance with facility radiological survey schedules (FRSS).	K15 S9 S10 S13 B1 B2 B4 B6
Duty 4 Undertake the monitoring of personnel activities within barriers, entry and exit areas.	K8 K10 K12 S3 S4 S14 B1 B2 B4
Duty 5 Conduct radiological barrier integrity checks.	K12 S1 S4 S7 S8 B1 B2 B4
Duty 6 Carry out checks and testing of monitors and detectors against radioactive sealed sources.	K8 S3 B1 B2 B4
Duty 7 Monitor waste, used personal protective equipment (PPE) and equipment leaving site, ensuring compliance to conditions for acceptance.	K8 S11 S13 B1 B2 B4
Duty 8 Record radiation and contamination monitoring survey results using written reports and use of digital systems as required.	K7 K8 K16 S8 S12 B2 B3 B6
Duty 9 Support decontamination of personnel.	K6 K12 S4 S7 S8 S14 B1 B2 B4
Duty 10 Account for radioactive sources in line with local arrangements.	K12 K16 S7 S8 S10 S13 B1 B2 B4
Duty 11 Carry out radiation and contamination monitoring during radiation incidents and events.	K1 K8 S1 S6 S7 S8 B1 B2 B4
Duty 12 Support facility and site contingency plans including emergency arrangements for protection of personnel, plant and the environment.	K1 K2 K4 K5 S1 S6 S7 S8 S15 B1 B2 B4 B8
Duty 13 Record and communicate radiological protection monitoring information.	K6 K7 K8 K15 S5 S7 S8 S12 B3 B4 B5
Duty 14 Provide information of radiological hazards and risks. For example, appropriate guidance to personnel involved in incidents or events.	K1 K2 K3 K6 K7 K9 S7 S8 S14 B1 B2 B3 B7
Duty 15 Inform colleagues on appropriate actions relating to radiation protection.	K1 K2 K3 K6 K7 K9 K10 K17 S7 S8 S14 S15 B1 B2 B3 B7 B8

KSBs

Knowledge

K1: Safety and security expectations of those working on nuclear licensed sites: Health and safety at work act. Control of Substances Hazardous to Health (COSHH). Risk assessments and safe systems of work. Manual handling. Personal Protective Equipment (PPE). Situational awareness. Isolation and emergency stop procedures. Emergency evacuation procedures. Slips, trips and falls. Safety equipment: guards, signage, fire extinguishers.
K2: Awareness of safety management systems: standard operating procedures (SOPs) and risk assessments.
K3: Awareness of how human performance and human factors affect nuclear safety culture.
K4: Environment and sustainability: relevant legislation. Types of pollution and control measures in the nuclear sector, including spills and waste. Waste reduction and waste streams. Recycling and reuse. Sustainable use of equipment and materials.
K5: Principles of good team working.
K6: Verbal communication techniques.
K7: Written communication techniques.
K8: Information technology and digital systems: email, management information systems, word processing, work sharing platforms. General data protection regulation (GDPR). Cyber security.
K9: Principles and implications of nuclear safety: prevention of accidents, protection of people and the environment from radiation hazards.
K10: Principles and implications of radiological safety: protection of people and the environment from the harmful effects of ionising radiation and contamination.
K11: Awareness of radiation types: non-ionising and ionising radiation.
K12: Identification and control measures of radiation sources and associated hazards.
K13: Identification of radiological monitoring instruments: ionising radiation detection.
K14: Purpose and use of radiation protection monitoring instruments: measurement, calculation and assessment of levels of radiation.
K15: Relevant regulatory and legislative procedures on working practices: ionising radiation regulations, preparation for radiation emergency, public information regulations.
K16: Documentation and reporting requirements.
K17: Equity, diversity and inclusion in the workplace: Unconscious bias.

Skills

S1: Select and use specialist radiological protection instruments for monitoring: surface and airborne contamination, radiation dose rates, personal contamination using hand held contamination rate meters, installed and portable air samplers.
S2: Perform numerical calculations referencing the significance of radiological data produced.
S3: Carry out functional tests of radiation protection monitoring instrumentation using calibrated radioactive sealed sources.
S4: Respond appropriately to changes in radiological conditions using as low as reasonably practicable principles (ALARP).
S5: Record radiation protection monitoring and survey results using required relevant documentation.
S6: Actively participate in emergency response to provide radiological contingency plans to protect personnel, plant and the environment: take action in emergency environmental

radiological releases; carry out critical incident monitoring; use forward control points (FCP) and access control points (ACP) to respond and recover from nuclear incidents.
S7: Communicate verbally with colleagues and managers. For example, radiological protection monitoring information.
S8: Communicate in writing with colleagues and managers.
S9: Comply with health and safety regulations and procedures.
S10: Comply with legislative regulations and procedures for working practices. For example, ionising radiation regulations, preparation for radiation emergency , public information regulations.
S11: Comply with environmental and sustainability regulations and procedures. For example, identify and segregate resources for reuse, recycling and disposal.
S12: Use information technology and digital systems. Comply with GDPR and cyber security.
S13: Follow work instructions. For example, including standard operating procedures (SOPs), risk assessments.
S14: Apply human performance and human factors principles in the workplace.
S15: Work collaboratively with others: For example, reporting critical incidents or events.

Behaviours

B1: Demonstrate a strong commitment to health and safety behaviours for themselves and others. Challenge unsafe practices.
B2: Collaborate respectfully within teams, across disciplines and external stakeholders.
B3: Takes ownership of own work and responsibilities.
B4: Take responsibility for the quality of work and enable others to work to high standards.
B5: Respond and adapt to changing work requests.
B6: Commit to learning and development opportunities, continual professional development (CPD).
B7: Act in a professional and ethical manner.
B8: Work in a team focussed way to meet work goals: work effectively with others, seek help when needed and help others.

Qualifications

English and Maths

English and maths qualifications form a mandatory part of all apprenticeships and must be completed before an apprentice can pass through gateway. The requirements are detailed in the current version of the apprenticeship funding rules.

Does the apprenticeship need to include any mandated qualifications in addition to the above-mentioned English and maths qualifications?

No

Professional recognition

This standard aligns with the following professional recognition:

- Society for Radiological Protection for Associate

Consultation

Progression Routes

Supporting uploads

Mandatory qualification uploads
Mandated degree evidence uploads
Professional body confirmation uploads

Notice period

Involved employers

Sellafield Ltd, Magnox Ltd, Research Sites Restoration Ltd, Low Level Waste Repository Ltd, Westinghouse Springfields Fuels Ltd, Amec Foster Wheeler, National Nuclear Laboratory, Cavendish Nuclear Ltd, West Cumberland Engineering Ltd, Morgan Sindall, Nuvia Ltd, EDF Energy, Costain Limited, National Skills Academy for Nuclear, Cogent Sector Skills Council, The Nuclear Institute, British Institute of Non Destructive Testing, The Welding Institute, Radwise Ltd, Doosan Babcock Ltd, Hargreaves Ductwork Ltd, Jacobs, Tata Steel Projects, Bureau Veritas UK