GQA PAA\VQSET Level 2 NVQ Diploma in Nuclear Decommissioning

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Centre Qualification Handbook

Competence-based Qualifications

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INTRODUCTION TO THE HANDBOOK

This qualification sits within the Regulated Qualifications Framework (RQF).

This Qualification Handbook has been developed to ensure that GQA Centres understand the requirements of the qualification. The Handbook contains the following information:

- Qualification Structure
- Assessment Requirements
- Assessment Methods
- Glossary
- Qualification Units

This Qualification Handbook has been developed to provide support in the implementation of the qualification as well as giving information to ensure that the assessment and quality assurance is consistent, robust and reliable within each centre and nationally. The handbook also contains details of the skills and/or knowledge the learner must obtain to achieve the units and qualification.

Qualification Structure

This section of the handbook summarises the content of the qualification and the skills and/or knowledge learners that achieve it can be expected to gain. It also outlines the units required to achieve the qualification and will give the learner an idea of how long the qualification will take to achieve through the Total Qualification Time (TQT) and how much contact time they can expect through the Guided Learning Hours (GLH). It also provides information about possible progression opportunities once the qualification has been achieved.

Assessment Requirements

The assessment requirements for the qualification will cover any specific information about how the qualification may be assessed, such as whether assessors require specific qualifications or occupational competence and whether simulation is permitted in the achievement process.

Assessment Methods

This section summarises the different assessment methods and types of evidence that support assessment; these may be used to demonstrate competence or the achievement of knowledge and understanding.

Qualification Units

The unit overview summarises the content of the unit and the skills and/or knowledge the learner will have gained on achievement of the unit. The units may also contain additional information in the assessment context which will describe the areas to be covered and any appropriate assessment guidance and evidence requirements which will outline additional assessment requirements and should be built into assessment plans and included on assessment records. The unit detail will also confirm whether simulation is permitted for that particular unit.

Qualification Assessment and Support Materials

Centres will be sent the following qualification assessment and support materials:

- Assessment Forms – it is not mandatory to use these forms. Centres may wish to use their own assessment documentation – these should be approved by the External Verifier prior to use.
- Learner Guide
- Qualification Handbook
- Registration Spreadsheet & Certification Claim Forms

LEVEL 2 NVQ DIPLOMA IN NUCLEAR DECOMMISSIONING

Qualification Summary

The Level 2 qualification is intended for those who undertake decontamination operations and dismantle plant and equipment or are involved in maintenance and monitoring activities. The qualification covers a specialised function; it provides the learner with the ability and essential knowledge to specialise in the decommissioning of nuclear facilities.

Total Qualification Time (TQT) and Guided Learning Hours (GLH)

Guided Learning Hours (GLH)

Guided Learning Hours are the time the learner is under the immediate supervision or guidance of a lecturer, supervisor, tutor or other appropriate provider or education or training.

The GLH for this qualification is 254

Total Qualification Time (TQT)

Total Qualification Time is comprised of 2 elements:

1. GLH
   plus
2. an estimate of the number of hours a learner will reasonably be likely to spend in preparation, study or any other form of participation in education or training, including assessment, which takes place as directed by (but not under the immediate supervision of) a lecturer, supervisor, tutor or other appropriate provider or education or training

The TQT for this qualification is 600

Achieving the Qualification

26 Units must be achieved (13 knowledge and 13 competence units).

Mandatory Units: All 18 Mandatory Units must be achieved

Optional Units Group 1: Learners must achieve 2 units from one Option Group. Knowledge and competence units must be taken in combination i.e. if unit N409k is chosen, unit N409c must also be completed; and vice-versa.

Optional Units Group 2: Learners must achieve 6 units from three of the Option Groups. Knowledge and competence units must be taken in combination i.e. if unit N411k is chosen, unit N411c must also be completed; and vice-versa.

Mandatory Units

Unit No.	Unit Name	Credit Value
N400k	How to Dismantle Contaminated Plant, Structures And Equipment Used within Nuclear Facilities	3
N400c	Dismantle Contaminated Plant, Structures and Equipment Used within Nuclear Facilities	3
N401k	How to Minimise and Package Radioactive Waste within a Nuclear Decommissioning Environment	2
N401c	Minimise and Package Radioactive Waste within a Nuclear Decommissioning Environment	2
N402k	How to Identify And Minimise Hazards And Risks within a Nuclear Decommissioning Environment	3

N402c	Identify And Minimise Hazards And Risks within a Nuclear Decommissioning Environment	2
N403k	How to Undertake Decontamination Operations within a Nuclear Decommissioning Environment	2
N403c	Undertake Decontamination Operations within a Nuclear Decommissioning Environment	2
N404k	How to Control Personal Radiation Dose Uptake within a Nuclear Decommissioning Environment	3
N404c	Control Personal Radiation Dose Uptake within a Nuclear Decommissioning Environment	2
N405k	How to Provide Operational Monitoring Assistance within a Nuclear Decommissioning Environment	2
N405c	Provide Operational Monitoring Assistance within a Nuclear Decommissioning Environment	2
N406k	How to Implement Safe Access Systems in a Radiation/Contamination Controlled Environment	3
N406c	Implement Safe Access Systems in a Radiation/Contamination Controlled Environment	3
N407k	How to Prepare Engineering Equipment for Use in a Radiation/Contamination Controlled Environment	2
N407c	Prepare Engineering Equipment for Use in a Radiation/Contamination Controlled Environment	2
N408k	How to Contribute to Own Development within Ionising Radiation Environments	3
N408c	Contribute to Own Development within Ionising Radiation Environments	3

Optional Units Group 1

Learners must achieve 2 units from one Option Group – N409 or N410.

Unit No.	Unit Name	Credit Value
N409k	How to Prepare Alpha Radiation/Contamination Controlled Work Areas within a Nuclear Decommissioning Environment	2
N409c	Prepare Alpha Radiation/Contamination Controlled Work Areas within a Nuclear Decommissioning Environment	2
N410k	How to Prepare Beta/Gamma Radiation/Contamination Controlled Work Areas within a Nuclear Decommissioning Environment	2
N410c	Prepare Beta/Gamma Radiation/Contamination Controlled Work Areas within a Nuclear Decommissioning Environment	2

Optional Units Group 2

Learners must achieve 6 units from three of the Option Groups – N411 to N418.

Unit No.	Unit Name	Credit Value
N411k	How to Assemble Equipment to Aid Nuclear Decommissioning	2
N411c	Assemble Equipment to Aid Nuclear Decommissioning	2

N412k	How to Dismantle Equipment Used in Nuclear Decommissioning	2
N412c	Dismantle Equipment Used in Nuclear Decommissioning	2
N413k	How to Carry Out Planned Preventative Maintenance Procedures on Equipment Used in Nuclear Decommissioning	3
N413c	Carry Out Planned Preventative Maintenance Procedures on Equipment Used in Nuclear Decommissioning	3
N414k	How to Adjust Equipment Used in Nuclear Decommissioning to Meet Operational Requirements	3
N414c	Adjust Equipment Used in Nuclear Decommissioning to Meet Operational Requirements	2
N415k	How to Operate Remote Controlled Equipment for Use in Nuclear Decommissioning	4
N415c	Operate Remote Controlled Equipment for Use in Nuclear Decommissioning	4
N416k	How to Monitor Operational Radiological Conditions within a Nuclear Decommissioning Environment	2
N416c	Monitor Operational Radiological Conditions within a Nuclear Decommissioning Environment	2
N417k	How to Check Radiological Monitoring Instruments and Equipment are in Good Order within a Nuclear Decommissioning Environment	2
N417c	Check Radiological Monitoring Instruments and Equipment are in Good Order within a Nuclear Decommissioning Environment	2
N418k	How to Prepare and Move Loads in Nuclear Installations within a Nuclear Decommissioning Environment	3
N418c	Prepare and Move Loads in Nuclear Installations within a Nuclear Decommissioning Environment	3

Progression

This Diploma is part of a suite of qualifications developed from the Nuclear Decommissioning National Occupational Standards (NOS) at Levels 2 and 3.

Further information can be found on the GQA website www.GQAQualifications.com or on the Register of Regulated Qualifications website http://register.ofqual.gov.uk

ASSESSMENT REQUIREMENTS

Assessors must ensure that, when assessing the skills, knowledge and/or understanding, the evidence produced by learners is:

- Valid – does evidence meet the requirements described in the unit?
- Authentic – has the learner produced the evidence?
- Current – has the evidence been produced recently and does it demonstrate current competence?
- Sufficient – is there enough evidence to demonstrate competence?

to enable reliable and consistent judgements to be made about the achievement of all the requirements of the unit(s) and qualification.

GQA Recognised Centres must ensure that people involved in the assessment process have the appropriate expertise and are adequately informed and supported to fulfil their responsibilities.

ASSESSMENT STRATEGY

Below is the information to support the assessment requirements of the qualification:

- Mandatory use of evidence from workplace performance
- Use of Simulation
- Occupational competence of assessors and verifiers

Mandatory use of evidence from workplace performance

a. Unless the use of simulation is expressly permitted within the qualification or unit specific evidence requirements, evidence must demonstrate the learner's competence in a real or realistic environment.

b. Knowledge and Understanding will be assessed via (pre-set and/or free form) questions, or by inference from performance, which cover three primary types of knowledge:

- Knowledge of facts and procedures
- Understanding of principles, concepts and underpinning procedures
- How to apply principles and procedures in specific contexts

All questions must be asked by the assessor at appropriate moments throughout the assessment process, preferably linked to observed activity and/or review of documentary evidence. The questions asked of, and answers provided by, the learner must be recorded.

Use of Simulation

c. The qualification or unit specific assessment requirements will define where evidence from simulation is acceptable, and in which contexts.

Simulation should be used only where direct evidence of learner performance cannot be obtained. Under these circumstances simulation may be used for summative assessment. Reasons for the use of simulation should be made clear to and agreed by the external verifier and should include the following details:

- which competence (and standards) the simulation was designed to assess;
- the kind of equipment, facilities and physical environment proposed for the simulation of performance. It is unlikely that the External Verifier will approve a simulation if it does not involve real plant and equipment;
- how the simulated activity relates to the learner's normal work context in terms of the pressures of time, access to resources and access to information, and the communication media; and

- how the simulation was set up and conducted, preferably supported by physical evidence such as photographs or inspection of a test rig.

  Assessors, internal verifiers and external verifiers should monitor the proportion of evidence generated via simulations to ensure that it is not the primary source of a learner's claim to competence.

d. Under these circumstances simulations are reserved for aspects of competence illustrated by the following contexts:

   a. where demonstration of emergency shutdown and related safety procedures would be; **dangerous and/or disruptive** to plant/environment/individuals; **too costly** such as total plant shutdown or dealing with spillage of dangerous substances; where **issues of confidentiality** restrict access to real work opportunities;
   b. demonstrating specific aspects of the operation which rarely or never occur due to effective quality assurance systems;
   c. the capacity to integrate disparate knowledge to cope with unforeseen events and to solve problems; or
   d. aspects of working relationships and communications for which no opportunity has presented for the use of naturally occurring workplace evidence of learner performance.

di. Simulation must enable the individual to demonstrate competence in a real or realistic work environment. In this context this means in specialist centres which replicate the workplace in terms of equipment and environment, reflect normal working situations and use relevant industrial or commercial standards and procedures. Short work placements or non-realistic work environments which do not replicate the pressures and requirements of normal commercial or industrial activities will not be acceptable. The bulk of the learner's evidence should be drawn from their normal working activity and not consist of artificially contrived opportunities for one-off demonstration of competence. Similarly equipment must be that used in current commercial and industrial contexts. Procedures and standards used should be those which are nationally or internationally recognised or devised by specific companies as standard operating procedure.

dii. Simulation must enable the individual to acquire his/her skills and knowledge in a realistic work environment. In this context this means in specialist centres which replicate the workplace in terms of equipment and environment, it reflects normal working situations and uses relevant industrial or commercial standards and procedures. Where possible providers should attempt to replicate the pressures and requirements of normal commercial or industrial activities. Equipment must be that used in current commercial and industrial contexts. Procedures and standards used should be those which are nationally or internationally recognised or devised by specific companies as standard operating procedure.

diii. Circumstances outside of those listed in Section D above may also be considered suitable for the use of simulation with the agreement of the External Verifier and GQA. Under these circumstances simulation may be used for formative assessment only.

Occupational competence of Assessor and Verifiers

h. Assessors:

- must be competent in the units they are assessing. This is shown through the assessor having achieved the award they are assessing OR providing quality evidence to the external verifier that they are able to make valid judgements of the competence of learners. This could be done through a combination of a) personal interview, b) review of employment histories and/or c) examination of the assessor's judgement during assessments.
- must have a working knowledge of awards and a full understanding of that part of the award for which they have responsibility.
- should hold or be working towards suitable qualifications for assessment, as defined by GQA.

i. Internal verifiers:

- must be either working in the appropriate sector itself OR they must be able to demonstrate they possess practical and up-to-date knowledge of current working practices appropriate to the sector in which they are carrying out verification practices; and
- must be appointed by a GQA recognised centre
- must have a working knowledge of the awards they are internally verifying
- should hold or be working towards suitable qualifications for verification, as defined by GQA.

ASSESSMENT METHODS AND TYPES OF EVIDENCE

The following section gives information on the different assessment methods/types of evidence that support assessment. The following assessment methods/types of evidence may be used to demonstrate competence or that the learner has achieved the required level of knowledge and understanding.

Observation of Performance

Observation allows the assessor to see learners carrying out their work activities. It will take place primarily in the workplace but can also be undertaken in a training scheme. Natural discussion should take place where possible during observation, allowing the assessor to ask questions relating to what they are observing at the time. Assessors must capture their observations either by a written report and/or other methods (e.g. video, audio recording).

Questioning

This method of assessment can be used to ensure that the learner has knowledge and understanding to support their skills. Questions can be used to check knowledge - these questions can either be verbal during or at the end of an observation, or they can be set in a written format in formal or informal conditions. As some units may focus entirely on learners' knowledge, assessors may encourage a variety of evidence to meet the requirements of the unit – use of verbal and/or written questions, learner statements and professional discussion (see below). Verbal questioning or professional discussion should be captured, either by written notes or audio recording.

Products

Work product evidence may be generated as a result of work activities undertaken by learners, and could include reports, letters, or records of work carried out.

Witness Statement or Testimony

A Witness Statement or Testimony is confirmation by others that the learner carried out an activity or series of activities relevant to the requirements of the unit. It could be written by the learner and signed by the witness to confirm that it did take place, or the witness may write the statement. Alternatively, the assessor could speak to the witness and record the discussion. The statement can then be used as evidence within an assessment.

There may be occasions when an Expert Witness may be required to contribute to the assessment process. GQA's definition of an Expert Witness is 'an experienced employee who works in partnership with the assessor, by observing the learner carrying out their duties and recording their observations in line with the assessment procedures'. It should be noted that while the Expert Witness makes a valued contribution to the assessment process, it is the assessor who makes the assessment decision.

Simulation

Simulations are a source of performance evidence showing how an activity is carried out. Simulations require careful planning to ensure that they reflect as near as possible "real life" conditions and the requirements of the qualification(s). As a result of this the costs to set up a simulation may be considerable. Simulations are likely to be used in the following situations:

- they occur infrequently (e.g. dealing with emergencies)
- they involve unusual working conditions (e.g. working in isolation, outside the workplace)
- the work is hazardous
- it is not cost effective

Any use of simulation should be discussed and agreed with the GQA External Verifier and approved prior to implementation.

Recognition of Prior Learning (RPL)

This is the process whereby credit is given to experienced individuals for their previous achievements. It requires careful mapping of the individual's experience to the unit(s) to ensure that it meets the requirements. This exercise must be referred to the External Verifier to ensure that all the evidence presented is acceptable.

Professional Discussion

A Professional Discussion gives the learner the opportunity to tell their assessor what they are doing and why they are doing it in a particular way. The discussion should be supported by appropriate evidence – an observation report, work product or witness testimony. Professional Discussions should be planned to give the learner the chance to prepare, and should be recorded.

Learner Statements

A Learner Statement is an account of an activity that took place, described by the learner. A detailed statement could demonstrate skill, and also provides evidence of knowledge and understanding. Learner statements should be authenticated by an appropriate person.

Photographs and use of other media

Photographs and use of other media, e.g. video and audio, can provide detail of work activities carried out and questioning. Photographs are more effective when used with supporting statements. Video and audio evidence should be effectively referenced to allow specific activities or questioning to be found easily. It is important to note that if photographs and other media are to be used, the learner and assessor should ensure that permission is gained from all people who may be involved.

GLOSSARY

Term	Definition
Access Arrangements	Arrangements that are approved in advance of an examination or assessment to allow achievement to be demonstrated by learners with a disability, special learning needs (including where the learner's first language is not English, Welsh or Irish) or to avoid unlawful discrimination
Appeal	The process through which an awarding organisation may be challenged on the outcome of an enquiry about results or, where appropriate, other procedural decisions affecting a centre or an individual learner
Assessment	The process of making judgements about the extent to which a learner's work meets the requirements of a unit, or any additional assessment requirements of a qualification
Assessor	A person who assesses a learner's work
Award of Qualifications	A certificate (electronic or paper-based) issued to an individual that recognises their achievement
Award	A qualification with a TQT value between 10 and 129
Awarding Organisation	A body recognised by the qualifications regulators to award qualifications
Centre	An organisation accountable to an awarding organisation for assessment arrangements leading to the award of qualifications
Centre Recognition	A process through which a centre wishing to offer an award or awards is confirmed as being able to maintain the required quality and consistency of assessment, and comply with other requirements of the awarding organisation
Certificate (1) for a Unit or Qualification	A record of attainment of a qualification issued by an awarding organisation
Certificate (2)	A qualification with a TQT value between 130 and 369
Credit	An award that may be made to a learner in recognition of the achievement of a unit or qualification
Credit Value	The number of credits that may be awarded to a learner for the successful achievement of a unit or qualification
Diploma	A qualification with a TQT value of 370 or above
Guided Learning Hours	The number of hours of teacher-supervised or directed study time required to teach a qualification or unit of a qualification
Learning Time	The amount of time a learner at the level of the unit is expected to take, on average, to complete the unit to the standard required
Level	An indication of the relative demand, complexity and/or depth of achievement, and/or the autonomy of the learner in demonstrating that achievement

Term	Definition
Mandatory Units	Units that must be achieved for the qualification to be awarded
National Occupational Standards (NOS)	Describe what a person needs to do, know and understand in a job to carry out the role in a consistent and competent way
Optional Unit	A unit that a learner may choose to complete to achieve the required number of units for award of the qualification
Pathway	A route to the achievement of a qualification that requires particular units to be achieved and is identified by an endorsement to a qualification title
Qualification	An award made to a Learner for the achievement of the required units or other components for that qualification
Qualification Level	An indication of the relative demand, complexity and/or depth of achievement, and/or the autonomy of the learner, represented by a qualification
Qualifications Regulators	Government-designated statutory organisations required to establish national standards for qualifications and secure consistent compliance with them
Recognition of Prior Learning (RPL)	A method of assessment that considers whether a learner can demonstrate that they can meet the assessment requirements for a unit through knowledge, understanding or skills they already possess and do not need to develop through a course of learning
Sector Skills Council	A body responsible for formulating and reviewing occupational standards for a specific sector across the UK, and for supporting the development of units and qualifications based on these standards. Each SSC is an employer-led, independent organisation and is licensed by government
Standardisation Of Assessment	A process to ensure that assessment leading to the award of qualifications is applied consistently by individuals, centres and awarding organisations
Unique Learner Number (ULN)	The unique number that is used to identify an individual learner
Unit	A component of a qualification

LEVEL 2 DIPLOMA IN NUCLEAR DECOMMISSIONING (NVQ)

CONTENT OF THE QUALIFICATION

MANDATORY UNITS

UNIT N400K	**HOW TO DISMANTLE CONTAMINATED PLANT, STRUCTURES AND EQUIPMENT USED WITHIN NUCLEAR FACILITIES**
LEVEL	**2**
CREDIT VALUE	**3**
GUIDED LEARNING HOURS	**18**

Unit Overview

This unit addresses the knowledge required to dismantle contaminated plant, structures and equipment used within nuclear facilities.

Assessment Guidance and Evidence Requirements

The learner should provide evidence to meet all the required knowledge and understanding within this unit. This could be provided through different types of evidence and assessment methods, for example learner statements, questioning and professional discussion which should be recorded for verification.

- This unit is subject to the requirements set out in the Cogent Assessment Strategy.
- The assumption is made that the learner is a trained operative and that extra practice and assessment is required to meet the variety of skills used.

Information on use of Assessment Context

This unit covers the knowledge required to dismantle contaminated plant, structures and equipment used within nuclear facilities (assets) in accordance with specifications. This means the act of removal and disposal of the asset and/or removal or disposal of legacy waste items, contaminated plant and equipment.

Whilst the training for this unit is multi skilled, the work is routine in nature, working to well defined procedures.

The learner carries out work to well defined procedures and addresses straight forward problems. A wide range of knowledge, both conventional and nuclear, is utilised.

During this work the learner must take account of the relevant worksite operational requirements, procedures and safe working practices AS THEY APPLY TO THE LEARNER.

The following terms have a specific meaning in this unit:

Plant, structures and equipment:
The plant structures and equipment covered by this Unit are as found within a nuclear facility. They may be irradiated and/or contaminated and would include full assemblies such as the reactor, processing plant, experimental plant, glove boxes, and pond structures. They would also cover sub-assemblies such as reactor components, fuel assemblies, pipework, vessels, mixers and pond furniture.

Dismantling methods and techniques:
Typical disconnections would include unfastening of bolts and studs, burning, un-plugging of male/female connections, use of quick release hydraulic couplings, stripping out of electric cables, size reduction, grinding, shearing and cutting. The methods and techniques to be applied and the procedures to be followed

would be clearly specified in the work instructions. The person carrying out this work is responsible for working to those instructions. The items to be dismantled are readily accessed meaning that dismantling is generally straight forward in engineering terms, but is made complex by the need to rigorously adhere to the protective systems in place within a radiation/contamination controlled environment as defined within the ionising radiations regulations (IRR's).

Work area protection and safety requirements:

- Following ALARP principles at all times, accurately establish radiation and contamination levels.
- Restrict and minimise contamination through use of specific equipment. Maintain high levels of housekeeping.

Learning Outcome and Assessment Criteria

Learning outcomes **The learner will:**	**Assessment criteria** **The learner can:**
1. Know how to read and interpret the documentation	1.1. Explain how to access and interpret drawings and related specifications
2. Know the correct use of tools and equipment	2.1. Identify the tools and equipment used to carry out dismantling and size reduction 2.2. Describe tool and equipment care and control procedures
3. Know how to work safely in a radiation environment	3.1. Identify the properties and types of radiation present in the facility 3.2. Explain how to shield from radiation sources 3.3. Explain how to prevent the spread of contamination
4. Know the techniques to use when dismantling contaminated plant, structures and equipment	4.1. Describe the methods and techniques used in dismantling 4.2. Describe the methods and techniques used in handling equipment 4.3. Explain the storage arrangements for radioactive/contaminated items
5. Know how to follow organisational procedures	5.1. Explain the reporting lines and procedures 5.2. Explain the waste disposal procedures 5.3. Explain the Health and Safety legislation, regulations and safe working practices and procedures

UNIT N400C	**DISMANTLE CONTAMINATED PLANT, STRUCTURES AND EQUIPMENT USED WITHIN NUCLEAR FACILITIES**
LEVEL	**2**
CREDIT VALUE	**3**
GUIDED LEARNING HOURS	**4**

Unit Overview

This unit addresses the skills required to dismantle contaminated plant, structures and equipment used within nuclear facilities.

Assessment Guidance and Evidence Requirements

Evidence Requirements

Typical types of performance evidence for this unit would include dismantled assets, procedures followed and organisational records.

The learner should provide at least 3 different examples of performance evidence relating to dismantling. Taken as a whole, the performance evidence must cover:

- The dismantling of both full and sub-assemblies, show that the learner has complied with the specifications given
- Dealing with at least 2 of the asset characteristics specified in the Assessment Context for plant, structures and equipment
- Utilising at least 2 different dismantling techniques
- At least 1 example of the work area protection and safety requirements detailed in the Assessment Context

Assessment Guidance

- The use of simulation is not acceptable in the assessment of this unit.
- Workplace performance evidence is mandatory.
- This unit is subject to the requirements set out in the Cogent Assessment Strategy.
- This unit should not be taken prior to taking *N400k - How to Dismantle Contaminated Plant, Structures and Equipment Used within Nuclear Facilities.*
- The assumed pre-requisite is that the learner is a trained operative and that extra practice and assessment is required to meet the variety of skills used.
- Observation and examination of outcomes and records will probably provide the most effective methods of assessment.

Information on use of Assessment Context

This unit covers the competence required to dismantle contaminated plant, structures and equipment used within nuclear facilities (assets) in accordance with specifications. This means the act of removal and disposal of the asset and/or removal or disposal of legacy waste items, contaminated plant and equipment.

Whilst the training for this unit is multi skilled, the work is routine in nature, working to well defined procedures.

During this work the learner must take account of the relevant worksite operational requirements, procedures and safe working practices AS THEY APPLY TO THE LEARNER.

The following terms have a specific meaning in this unit:

Plant, structures and equipment:
The plant structures and equipment covered by this Unit are as found within a nuclear facility. They may be irradiated and/or contaminated and would include full assemblies such as the reactor, processing plant, experimental plant, glove boxes, and pond structures. They would also cover sub-assemblies such as reactor components, fuel assemblies, pipework, vessels, mixers and pond furniture.

Dismantling methods and techniques:
Typical disconnections would include unfastening of bolts and studs, burning, un-plugging of male/female connections, use of quick release hydraulic couplings, stripping out of electric cables, size reduction, grinding, shearing and cutting. The methods and techniques to be applied and the procedures to be followed would be clearly specified in the work instructions. The person carrying out this work is responsible for working to those instructions. The items to be dismantled are readily accessed meaning that dismantling is generally straight forward in engineering terms, but is made complex by the need to rigorously adhere to the protective systems in place within a radiation/contamination controlled environment as defined within the ionising radiations regulations (IRR's).

Work area protection and safety requirements:
- Following ALARP principles at all times, accurately establish radiation and contamination levels.
- Restrict and minimise contamination through use of specific equipment. Maintain high levels of housekeeping.

Learning Outcome and Assessment Criteria

Learning outcomes **The learner will:**	**Assessment criteria** **The learner can:**
1. Be able to dismantle contaminated plant, structures and equipment safely	1.1. Establish and, where appropriate, mark component for re-assembly 1.2. Make all isolations and disconnections to the equipment in line with approved procedures 1.3. Ensure that any stored energy or substances are released safely and correctly 1.4. Carry out the dismantling to the agreed level using correct tools and techniques
2. Be able to deal with materials for re-use or disposal	2.1. Store components for re-use in approved locations 2.2. Dispose of unwanted components and substances in accordance with approved procedures
3. Be able to deal with and report problems	3.1. Deal promptly and effectively with problems within their control and report those that cannot be solved
4. Be able to follow organisational procedures when assembling equipment	4.1. Work safely at all times, complying with health and safety and other relevant regulations and guidelines

UNIT N401K	**HOW TO MINIMISE AND PACKAGE RADIOACTIVE WASTE WITHIN A NUCLEAR DECOMMISSIONING ENVIRONMENT**
LEVEL	**2**
CREDIT VALUE	**2**
GUIDED LEARNING HOURS	**12**

Unit Overview

This unit addresses the knowledge required to minimise and package radioactive waste within nuclear environments.

Assessment Guidance and Evidence Requirements

The learner should provide evidence to meet all the required knowledge and understanding within this unit. This could be provided through different types of evidence and assessment methods, for example learner statements, questioning and professional discussion which should be recorded for verification.

- This unit is subject to the requirements set out in the Cogent Assessment Strategy.
- The assumption is made that the learner is a trained operative and that extra practice and assessment is required in size reduction and packaging. The learner completes well-defined tasks and addresses straightforward problems.

Information on use of Assessment Context

This unit deals with the following:

- Minimise radioactive waste – this covers the knowledge required to ensure that radioactive waste arisings are minimised as required by nuclear site licences and local rules
- Package radioactive waste – this covers the knowledge required to ensure efficient use of packaging materials according to formally approved operating instructions

The learner works with well-defined routines, completes well defined tasks and addresses straight forward problems. The learner is aware of the information relevant to the task.

During this work the learner must take account of the relevant worksite operational requirements, procedures and safe working practices AS THEY APPLY TO THE LEARNER.

The following terms have a specific meaning in this unit:

Non-essential items:
Non-essential items are any materials, tools or other items that are not needed for the purposes of a specified task within a supervised or a controlled area. They might include, packaging, surplus tools, materials or equipment.

Waste characteristics:
Wastes can be classified in terms of the following characteristics: compactable; non- compactable; sharp edged; hazardous other than radioactive

Relevant people:
The people to whom the person carrying out this role would report would be the area supervisor and the line supervisor

Packaging:
Packaging can be described as primary or secondary. Primary packaging might include bags, cling film, PVC, coatings. Secondary packaging might include, skips, drums, ISO containers, metal boxes, concrete boxes

Identification System:

Identification system will be organisation specific and will identify origin, destination and radiation level

Learning Outcome and Assessment Criteria

Learning outcomes **The learner will:**	**Assessment criteria** **The learner can:**
1. Know how to follow procedures for minimising radioactive waste	1.1. Explain the techniques which minimise cross-contamination and airborne-activity 1.2. Explain the size reduction techniques used for different waste characteristics 1.3. Describe the key factors to consider when determining the correct method to be used for different levels of contamination and waste dimensions 1.4. Explain how to determine the most appropriate work sequences to follow to minimise waste
2. Know how to comply with safe working practices when dealing with radioactive waste	2.1. Explain why it is important to leave non-essential items outside active areas 2.2. Describe the tools, protective equipment, working methods and containment processes to be used for different types of job 2.3. Explain factors which determine whether or not contaminated equipment may be re-used 2.4. Define waste movement requirements and explain safe lifting and moving techniques used in waste transfer
3. Know how to follow procedures for packaging radioactive waste	3.1. Define the use of packaging materials (primary and secondary) with different wastes 3.2. Explain the main reasons for achieving a high packing factor and using low force compaction techniques 3.3. Describe radioactive waste packaging methods
4. Know how to identify and report any issues	4.1. Describe the typical difficulties which may be encountered and who should be involved in discussions to overcome them 4.2. Describe the reporting and documentation procedures
5. Know the principles and requirements regarding dealing with radioactive waste	5.1. Describe radioactive waste types, their segregation and identification 5.2. Explain the principles and practice of waste generation and avoidance 5.3. Explain the principles of radiation and contamination 5.4. Explain the principles of working area demarcation and control 5.5. Explain the principles and techniques of risk minimisation

UNIT N401C	**MINIMISE AND PACKAGE RADIOACTIVE WASTE WITHIN A NUCLEAR DECOMMISSIONING ENVIRONMENT**
LEVEL	**2**
CREDIT VALUE	**2**
GUIDED LEARNING HOURS	**6**

Unit Overview

This unit addresses the skills required to minimise and package radioactive waste within nuclear environments.

Assessment Guidance and Evidence Requirements

Evidence Requirements

Learners must provide at least 3 different pieces of performance evidence. Taken as a whole, the learner must provide performance evidence which shows that s/he has dealt with;

- At least 3 forms of waste as described by the waste characteristic in the Assessment Context
- At least 1 example of dealing with relevant persons as described in the Assessment Context
- Both types of packaging as described in the Assessment Context

Assessment Guidance

- The use of simulation is not acceptable in the assessment of this unit.
- Workplace performance evidence is mandatory.
- This unit is subject to the requirements set out in the Cogent Assessment Strategy.
- The assumption is made that the learner is a trained operative and that extra practice and assessment is required in size reduction and packaging.
- This unit should not be taken prior to taking *N401k - How to Minimise and Package Radioactive Waste within a Nuclear Decommissioning Environment*.

Information on use of Assessment Context

The problems are straightforward and the routines are well-defined.

This unit deals with the following:

- Minimise radioactive waste – this covers the competence required to ensure that radioactive waste arisings are minimised as required by nuclear site licences and local rules
- Package radioactive waste – this covers the competence required to ensure efficient use of packaging materials according to formally approved operating instructions

The learner works with well-defined routines, dealing with straight forward problems and has ability to make decisions within a tight framework.

During this work the learner must take account of the relevant worksite operational requirements, procedures and safe working practices AS THEY APPLY TO THE LEARNER.

The following terms have a specific meaning in this unit:

Non-essential items:
Non-essential items are any materials, tools or other items that are not needed for the purposes of a specified task within a supervised or a controlled area. They might include, packaging, surplus tools, materials or equipment.

Waste characteristics:
Wastes can be classified in terms of the following characteristics: compactable; non- compactable; sharp edged; hazardous other than radioactive

Relevant people:
The people to whom the person carrying out this role would report would be the area supervisor and the line supervisor

Packaging:
Packaging can be described as primary or secondary. Primary packaging might include bags, cling film, PVC, coatings. Secondary packaging might include, skips, drums, ISO containers, metal boxes, concrete boxes

Identification System:
Identification system will be organisation specific and will identify origin, destination and radiation level

Learning Outcome and Assessment Criteria

Learning outcomes The learner will:	Assessment criteria The learner can:
1. Be able to follow procedures for minimising radioactive waste	1.1. Follow work sequences that minimise the amount of waste generated 1.2. Use working techniques that minimise cross-contamination and airborne activity 1.3. Use appropriate size reduction techniques according to waste characteristics 1.4. Keep radioactive and non-radioactive waste separate 1.5. Use the correct containment for the level of contamination involved and the physical size and scale of the waste 1.6. Segregate waste correctly to the appropriate waste streams, according to its type
2. Be able to comply with safe working practices when dealing with radioactive waste	2.1. Work safely at all times, complying with health and safety and other relevant regulations and guidelines 2.2. Leave non-essential items outside active areas 2.3. Use tools, protective equipment, working methods and the containment process as specified for the job 2.4. Fully meet specified requirements on the movement of waste 2.5. Use safe lifting and moving techniques to transfer waste
3. Be able to follow procedures for packaging radioactive waste	3.1. Use packaging material that is compatible with the waste concerned and is confirmed as fit for purpose before use 3.2. Achieve a high packing factor and use low force compaction techniques where specified 3.3. Clearly and accurately identify packages using the required identification system
4. Be able to identify and report any issues	4.1. Promptly and accurately report packaging and equipment defects and abnormalities and other difficulties you encounter to the relevant people 4.2. Identify opportunities to re-use contaminated equipment and bring them to the attention of the relevant people 4.3. Discuss and resolve difficulties encountered and possible improvements to specified methods with the relevant people

UNIT N402K	**HOW TO IDENTIFY AND MINIMISE HAZARDS AND RISKS WITHIN A NUCLEAR DECOMMISSIONING ENVIRONMENT**
LEVEL	**2**
CREDIT VALUE	**3**
GUIDED LEARNING HOURS	**20**

Unit Overview

This unit addresses the knowledge required to identify and minimise hazards and risks when working with nuclear decommissioning.

Assessment Guidance and Evidence Requirements

The learner should provide evidence to meet all the required knowledge and understanding within this unit. This could be provided through different types of evidence and assessment methods, for example learner statements, questioning and professional discussion which should be recorded for verification.

- This unit is subject to the requirements set out in the Cogent Assessment Strategy.
- The assumption is made that the learner is a trained operative, with specific training input for hazard awareness, risk assessments, safety of people and plant.

Information on use of Assessment Context

This unit deals with the following:

- Identify and deal with hazards and risks arising from contingencies in supervised and controlled areas – this covers the knowledge required to ensure that hazards are recognised and the associated risk, including those arising from contingencies, minimised

- Minimise risks to life, property and the environment in supervised and controlled areas – this covers the knowledge required to ensure that organisational procedures designed to safeguard life, property and the environment in supervised and controlled areas are fully and consistently implemented

With practice, this work becomes routine because of the training input and safety culture of the organisation. All tasks including contingencies are approached logically, working within clear procedures.

During this work the learner must take account of the relevant worksite operational requirements, procedures and safe working practices AS THEY APPLY TO THE LEARNER.

The following terms have a specific meaning in this unit:

The workplace:
In the context of this Unit, the workplace refers to supervised and controlled areas as defined in the Ionising Radiations Regulations (IRR's) and as defined locally for restricted access areas.

Hazards and risks:
Hazards and risks may arise from the use of resources or from features within the immediate working environment. Hazards and risks can arise also from the use of tools, equipment and materials to dismantle and decontaminate items and deal with wastes. They can be readily identified, checked and minimised using the criteria and procedures specified in the risk control strategy within which the individual operates.
Actions taken to isolate hazards would include use of barriers, notices, Personal Protective Equipment (PPE) and good housekeeping practices. The person carrying out this function is responsible for taking decisions and implementing actions exactly as set down in that strategy.

Accidents:
Events resulting in injury to the role holder; events resulting in injury to other people

Incidents:
Hazardous malfunctions; hazards arising within the environment

Risk control measures:
Actions taken to control risks would include use of barriers, notices, Personal Protective Equipment (PPE) and good housekeeping practices.

Communication of actions:
Actions taken should be reported to the authorised person who may be the line manager, area supervisor or a member of Health Physics staff, depending on the nature of the action. The person carrying out this role is responsible for taking decisions and implementing actions exactly as set down in that strategy. Any additional actions needed would be specified in the risk control strategy within which the individual operates.

Learning Outcome and Assessment Criteria

Learning outcomes **The learner will:**	**Assessment criteria** **The learner can:**
1. Know how to identify hazards and risks	1.1. Explain the methods and techniques used in hazard spotting and safety assessment 1.2. Identify the types of hazards involving processes, tools, equipment and materials 1.3. Identify the causes of emergency within the work area
2. Know how to minimise the possibility of hazards and risks	2.1. Describe the agreed methods to enter/leave controlled/supervised areas 2.2. Identify the actions to minimise risk from hazards 2.3. Explain the change room procedures and barrier procedures 2.4. Explain the principles of contamination and radiation control 2.5. Explain the principles of radiation dose control
3. Know the reporting procedures in order to minimise hazards and risks	3.1. Explain the safety reporting procedures and documentation 3.2. Describe the reporting lines and procedures 3.3. Explain the contingency reporting documentation and systems
4. Know why it is important to minimise hazards and risks	4.1. Explain the effects of hazards on persons, property and the environment
5. Know how to follow organisational procedures	5.1. Describe the first aid procedures 5.2. Explain the evacuations procedures 5.3. Explain the site and building emergency procedures 5.4. Explain the Health and Safety legislation, regulations and safe working practices and procedures

UNIT N402C	**IDENTIFY AND MINIMISE HAZARDS AND RISKS WITHIN A NUCLEAR DECOMMISSIONING ENVIRONMENT**
LEVEL	**2**
CREDIT VALUE	**2**
GUIDED LEARNING HOURS	**4**

Unit Overview

This unit addresses the skills required to identify and minimise hazards and risks when working with nuclear decommissioning.

Assessment Guidance and Evidence Requirements

Evidence Requirements

The learner must provide at least 3 different examples of performance evidence. Taken as a whole, the learner must provide performance evidence covering;

- At least 1 example of hazard checking methods
- At least 1 example of identifying hazards arising from the immediate working environment as described in the Assessment Context
- At least 1 example of removing hazards
- At least 1 example of reporting any hazard and actions taken
- At least 1 example of the use of safety equipment in different environments and over a period of time
- Naturally occurring evidence may not be evident, therefore, simulation may be considered as an acceptable form of evidence for e.g. site emergencies

Assessment Guidance

- Workplace performance evidence is mandatory.
- This unit is subject to the requirements set out in the Cogent Assessment Strategy.
- This unit should not be taken prior to taking *N402k – How to Identify and Minimise Hazards and Risks within a Nuclear Decommissioning Environment*.
- The assumed pre-requisite is that the learner is a trained operative, developing and practising skills for identifying hazards and risk. The learner takes account of safety for life and property.

Information on use of Assessment Context

This unit deals with the following:

- Identify and deal with hazards and risks arising from contingencies in supervised and controlled areas – this covers the competence required to ensure that hazards are recognised and the associated risk, including those arising from contingencies, minimised

- Minimise risks to life, property and the environment in supervised and controlled areas – this covers the competence required to ensure that organisational procedures designed to safeguard life, property and the environment in supervised and controlled areas are fully and consistently implemented

With practice, this work becomes routine because of the safety culture, which ensures that the operative is supported.

During this work the learner must take account of the relevant worksite operational requirements, procedures and safe working practices AS THEY APPLY TO THE LEARNER.

The following terms have a specific meaning in this unit:

The workplace:
In the context of this Unit, the workplace refers to supervised and controlled areas as defined in the Ionising Radiations Regulations (IRR's) and as defined locally for restricted access areas.

Hazards and risks:
Hazards and risks may arise from the use of resources or from features within the immediate working environment. Hazards and risks can arise also from the use of tools, equipment and materials to dismantle and decontaminate items and deal with wastes. They can be readily identified, checked and minimised using the criteria and procedures specified in the risk control strategy within which the individual operates.

Actions taken to isolate hazards would include use of barriers, notices, Personal Protective Equipment (PPE) and good housekeeping practices. The person carrying out this function is responsible for taking decisions and implementing actions exactly as set down in that strategy.

Accidents:
Events resulting in injury to the role holder; events resulting in injury to other people

Incidents:
Hazardous malfunctions; hazards arising within the environment

Risk control measures:
Actions taken to control risks would include use of barriers, notices, Personal Protective Equipment (PPE) and good housekeeping practices.

Communication of actions:
Actions taken should be reported to the authorised person who may be the line manager, area supervisor or a member of Health Physics staff, depending on the nature of the action. The person carrying out this role is responsible for taking decisions and implementing actions exactly as set down in that strategy. Any additional actions needed would be specified in the risk control strategy within which the individual operates.

Learning Outcome and Assessment Criteria

Learning outcomes The learner will:	Assessment criteria The learner can:
1. Be able to identify potential hazards and risks in the workplace	1.1. Recognise industrial processes, tools, equipment and materials that have the potential to cause harm 1.2. Check for hazards in the workplace in line with agreed and approved procedures 1.3. Identify hazards and assess the level and severity of the risk involved
2. Be able to minimise the risk of hazards	2.1. Prioritise hazards and take action to • minimise the risk • implement control measures in the minimum agreed timescales 2.2. Take prompt and appropriate action to • minimise risk of personal and third party injury as a first priority • and then damage to property and equipment
3. Be able to deal with hazards	3.1. Deal safely with dangers that can be contained using appropriate equipment and materials, in accordance with organisational policy and procedures 3.2. Follow shutdown and evacuation procedures promptly and correctly 3.3. Monitor the effectiveness of the risk control measures and take prompt additional action where needed
4. Be able to report and communicate essential information to others	4.1. Report any hazards identified and any actions you have taken 4.2. Inform all those who are affected of the risk control measures in place and clarify any implications for them as required
5. Be able to follow organisational procedures	5.1. Call for expert help in the event of contingencies occurring, using warning systems as appropriate 5.2. Ensure that information provided for safety system records is clear, accurate and up-to-date 5.3. Work safely at all times, complying with health and safety and other relevant regulations and guidelines

UNIT N403K	**HOW TO UNDERTAKE DECONTAMINATION OPERATIONS WITHIN A NUCLEAR DECOMMISSIONING ENVIRONMENT**
LEVEL	**2**
CREDIT VALUE	**2**
GUIDED LEARNING HOURS	**12**

Unit Overview

This unit addresses the knowledge required to undertake decontamination operations when working with nuclear decommissioning.

Assessment Guidance and Evidence Requirements

The learner should provide evidence to meet all the required knowledge and understanding within this unit. This could be provided through different types of evidence and assessment methods, for example learner statements, questioning and professional discussion which should be recorded for verification.

- This unit is subject to the requirements set out in the Cogent Assessment Strategy.
- The assumption is made that the learner is a basic operative and that extra practice and assessment is required to reach contamination standards.

Information on use of Assessment Context

This unit covers the knowledge required for the preparation and decontamination, to the required levels, of items and areas which include: components for re-use, building floor and wall areas and decommissioned items en route for disposal, etc.

There are clear procedures to follow and there is no authority to go outside these limits.

Note: This unit does not relate to the preparation of purpose built decontamination facilities such as process plant.

During this work the learner must take account of the relevant worksite operational requirements, procedures and safe working practices AS THEY APPLY TO THE LEARNER.

The following terms have a specific meaning in this unit:

Decontamination methods:
The decontamination methods covered by this Unit are washing, mechanical abrasion and the application of coatings

Relevant people:
The people whom the holder of this competence would report to would be the area supervisor and the line supervisor

Support systems:
The support systems which must be monitored are personal support systems and alarms; which might include respiratory protection, pressurised suits, breathing air supplies and environmental support systems and alarms; which might include containments, ventilation, filtration, radiological monitoring systems.

Equipment:
The sorts of equipment which would need to be prepared would be dependent on the activities to be carried out but would include portable and hand tools for cutting and dismantling contaminated plant, structures and equipment used within nuclear facilities (e.g. drills, angle grinders, torque wrenches etc) as well as portable and hand tools use in the decontamination of plant, structures and equipment. It would also include equipment needed to enable the control of radioactive waste and tools used in erecting and dismantling structures that provide access and protection while work is carried out.

Learning Outcome and Assessment Criteria

Learning outcomes The learner will:	Assessment criteria The learner can:
1. Know how to use the accessories needed to undertake decontamination operations	1.1. Explain how to access and use material, tools and equipment
2. Know how to avoid and deal with waste safely	2.1. Explain the principles of waste generation and avoidance 2.2. Describe the radioactive waste types and their segregation 2.3. Identify the key points to consider when determining the handling and treatment requirements of secondary waste generated by different decontamination methods 2.4. Identify the main points to consider when segregating secondary waste and clearing up decontamination sites
3. Know the principles of safe working practices	3.1. Explain the principles of risk minimisation 3.2. Explain the principles of radiation and contamination 3.3. Explain the principles of working area demarcation and control 3.4. Describe the decontamination methods and techniques 3.5. Describe how to maintain containment in good condition 3.6. Explain the use of personal protective equipment for different types of activity and the fitness for purpose checks which are necessary
4. Know how to identify and measure radioactivity	4.1. Explain how to: • measure radioactivity • identify required radioactivity levels
5. Know how to solve problems	5.1. Describe typical deficiencies in the information, equipment and tools obtained, and who should be involved in discussions to resolve them 5.2. Describe typical difficulties which may be encountered and who should resolve them
6. Know how to follow organisational procedures	6.1. Describe the internal documentation and control systems 6.2. Identify the aspects of personal and environmental support systems which are monitored

UNIT N403C	UNDERTAKE DECONTAMINATION OPERATIONS WITHIN A NUCLEAR DECOMMISSIONING ENVIRONMENT
LEVEL	**2**
CREDIT VALUE	**2**
GUIDED LEARNING HOURS	**4**

Unit Overview

This unit addresses the skills required to undertake decontamination operations when working with nuclear decommissioning.

Assessment Guidance and Evidence Requirements

Evidence Requirements

The learner must provide at least 3 different pieces of performance evidence. Taken as a whole, the learner must provide performance evidence which shows that s/he has dealt with;

- At least 2 different types of decontamination methods as described in the Assessment Context
- Both types of support systems as described in the Assessment Context
- At least 1 of the relevant people as described in the Assessment Context
- Prepared at least 1 type of equipment from the equipment described in the Assessment Context

Assessment Guidance

- The use of simulation is not acceptable in the assessment of this unit.
- Workplace performance evidence is mandatory.
- This unit is subject to the requirements set out in the Cogent Assessment Strategy.
- This unit should not be taken prior to taking *N403k – How to Undertake Decontamination Operations within a Nuclear Decommissioning Environment*.
- The assumed pre-requisite is that the learner is a basic operative with practice and assessment necessary to reach contamination standards.

Information on use of Assessment Context

This unit covers the competence required for the preparation and decontamination, to the required levels, of items and areas which include: components for re-use, building floor and wall areas and decommissioned items en route for disposal, etc.

Note: This unit does not relate to the preparation of purpose built decontamination facilities such as process plant.

This is a routine operation with very tight go / no go limits. There are clear procedures to follow if levels of contamination are not met. There is no authority to go outside these limits.

During this work the learner must take account of the relevant worksite operational requirements, procedures and safe working practices AS THEY APPLY TO THE LEARNER.

The following terms have a specific meaning in this unit:

Decontamination methods:
The decontamination methods covered by this Unit are washing, mechanical abrasion and the application of coatings

Relevant people:
The people whom the holder of this competence would report to would be the area supervisor and the line supervisor

Support systems:
The support systems which must be monitored are personal support systems and alarms; which might include respiratory protection, pressurised suits, breathing air supplies and environmental support systems and alarms; which might include containments, ventilation, filtration, radiological monitoring systems.

Equipment:
The sorts of equipment which would need to be prepared would be dependent on the activities to be carried out but would include portable and hand tools for cutting and dismantling contaminated plant, structures and equipment used within nuclear facilities (e.g. drills, angle grinders, torque wrenches etc) as well as portable and hand tools use in the decontamination of plant, structures and equipment. It would also include equipment needed to enable the control of radioactive waste and tools used in erecting and dismantling structures that provide access and protection while work is carried out.

Learning Outcome and Assessment Criteria

Learning outcomes The learner will:	Assessment criteria The learner can:
1. Be able to prepare to undertake decontamination operations	1.1. Obtain clear and complete instructions on the decontamination methods and levels to be achieved before work begins 1.2. Obtain the necessary materials, equipment, tools and personal protective equipment and make them ready for use
2. Be able to undertake the decontamination safely	2.1. Correctly apply the specified decontamination method to achieve required results and minimise spread of contamination 2.2. Record correct measurements of radioactivity at appropriate intervals to check progress towards and achievement of required radioactivity levels 2.3. Maintain containment in good condition throughout 2.4. Monitor the operation of support systems continuously
3. Be able to deal with secondary waste	3.1. Clearly identify the handling and treatment requirements of secondary waste generated by the decontamination method 3.2. Segregate and deal with secondary waste according to specified instructions
4. Be able to restore the work area	4.1. Ensure that the decontamination area is cleared up to the required standard after use
5. Be able to follow organisational procedures	5.1. Promptly report and resolve difficulties with the specified work method and levels of secondary waste to and with the relevant people 5.2. Respond to any alarms safely and in line with specified procedures 5.3. Work safely at all times, complying with health and safety and other relevant regulations and guidelines

UNIT N404K	**HOW TO CONTROL PERSONAL RADIATION DOSE UPTAKE WITHIN A NUCLEAR DECOMMISSIONING ENVIRONMENT**
LEVEL	**3**
CREDIT VALUE	**3**
GUIDED LEARNING HOURS	**18**

Unit Overview

This unit addresses the knowledge required to control personal radiation dose uptake when working in a nuclear decommissioning environment.

Assessment Guidance and Evidence Requirements

The learner should provide evidence to meet all the required knowledge and understanding within this unit. This could be provided through different types of evidence and assessment methods, for example learner statements, questioning and professional discussion which should be recorded for verification.

- This unit is subject to the requirements set out in the Cogent Assessment Strategy.
- The assumed pre-requisite is that learners undertaking this unit will be trained operatives.

Information on use of Assessment Context

This activity becomes the norm for all operatives and is meticulously followed and obeyed.

This unit covers the knowledge required to complement the work of radiological protection professionals operating in the same area as the learner. In support of this, learners are responsible for monitoring and controlling their own radiation dose levels by using the dose measuring equipment and data provided for them.

During this work the learner must take account of the relevant worksite operational requirements, procedures and safe working practices AS THEY APPLY TO THE LEARNER.

The following terms have a specific meaning in this unit:

Dose measuring equipment:
The different types of dose monitoring equipment covered by this Unit and with which an occupationally competent person can work include whole body external dose monitors, internal dose monitors and specific organ external dose monitors

Areas:
The competence covered by this Unit applies to working within a radiation/contamination controlled environment as defined in the ionising radiations regulations (IRR's) and which may be designated as supervised, controlled or restricted access.

Dose types:
The different types of dose covered by this Unit and with which an occupationally competent person may be exposed to include; whole body external; internal; specific organ external which might include fingers, feet, eye lenses.

Relevant People:
The people from whom a person carrying out this role would seek advice and assistance would be the area supervisor, line supervisor or radiation protection specialists according to the nature of the information needed.

Learning Outcome and Assessment Criteria

Learning outcomes The learner will:	Assessment criteria The learner can:
1. Know how to use the equipment provided to ensure safe dose levels	1.1. Explain the key factors which need to be considered when using the different types of dose measuring equipment in each type of area 1.2. Describe how to access storage, issue and return procedures for different types of dose measuring equipment 1.3. Explain why the dose measuring equipment/personal dose control is important
2. Know how to minimise exposure to radiation	2.1. Explain the principles of risk minimisation and related techniques 2.2. Explain how to access and interpret information on the radiological environment 2.3. Identify the principal features of working methods, sequences and use of tools which minimise actual and potential dose and contamination 2.4. Explain why it is important to use temporary shielding in some situations, and what are its main limitations 2.5. Explain how to make accurate calculations of personal dose uptake and identify scheduled limits 2.6. State the limitations on time and movement in each type of area, and allocated dose levels 2.7. Explain the working area demarcation and control principles
3. Know how to follow organisational procedures	3.1. Describe the main statutory and regulatory requirements which require samples to be provided, and what are the most likely sample types 3.2. Explain how to identify and access the sources of specialist advice 3.3. Explain the decontamination techniques used to control dose uptake 3.4. Identify the likely alarms and how to access related specified procedures 3.5. Explain the reporting procedures and documentation 3.6. State how to obtain appropriate personal protective equipment for different types of designated area, and how to use it correctly 3.7. Explain the Health and Safety legislation, regulations and safe working practices and procedures

UNIT N404C	CONTROL PERSONAL RADIATION DOSE UPTAKE WITHIN A NUCLEAR DECOMMISSIONING ENVIRONMENT
LEVEL	**2**
CREDIT VALUE	**2**
GUIDED LEARNING HOURS	**8**

Unit Overview

This unit addresses the skills required to control personal radiation dose uptake when working with nuclear decommissioning.

Assessment Guidance and Evidence Requirements

Evidence Requirements

Learners must provide at least 3 different pieces of performance evidence. Taken as a whole, the learner must provide performance evidence which shows that s/he has dealt with;

- At least 2 dose types as described in the Assessment Context
- At least 2 different areas as described in the Assessment Context
- At least 2 types of relevant people as described in the Assessment Context
- At least 2 types of dose measuring equipment as described in Assessment Context

Assessment Guidance

- The use of simulation is not acceptable in the assessment of this unit.
- Workplace performance evidence is mandatory.
- This unit is subject to the requirements set out in the Cogent Assessment Strategy.
- This unit should not be taken prior to taking *N404k - How to Control personal Radiation Dose Uptake within a Nuclear Decommissioning Environment*.
- The assumed pre-requisite is that learners undertaking this unit will be trained operatives.

Information on use of Assessment Context

Although the specific training and practice is important, this is normal day to day work for the learner.

This unit covers the competence required to complement the work of radiological protection professionals operating in the same area as the learner. In support of this, learners are responsible for monitoring and controlling their own radiation dose levels by using the dose measuring equipment and data provided for them.

During this work the learner must take account of the relevant worksite operational requirements, procedures and safe working practices AS THEY APPLY TO THE LEARNER.

The learner needs approval to work in these areas and must work to the procedures. Any slight deviation must be reported and is treated seriously.

The following terms have a specific meaning in this unit:

Dose measuring equipment:
The different types of dose monitoring equipment covered by this Unit and with which an occupationally competent person can work include whole body external dose monitors, internal dose monitors and specific organ external dose monitors

Areas:
The competence covered by this Unit applies to working within a radiation/contamination controlled environment as defined in the ionising radiations regulations (IRR's) and which may be designated as supervised, controlled or restricted access.

Dose types:
The different types of dose covered by this Unit and with which an occupationally competent person may be exposed to include; whole body external; internal; specific organ external which might include fingers, feet, eye lenses.

Relevant People:
The people from whom a person carrying out this role would seek advice and assistance would be the area supervisor, line supervisor or radiation protection specialists according to the nature of the information needed.

Learning Outcome and Assessment Criteria

Learning outcomes **The learner will:**	**Assessment criteria** **The learner can:**
1. Be able to use the equipment provided to ensure safe dose levels	1.1. Effectively use dose measuring equipment at all times in areas designated as requiring its use 1.2. Make regular and accurate comparisons of personal dose uptake in relation to scheduled limits 1.3. Accurately follow storage, issue and return procedures for dose measuring equipment
2. Be able to minimise exposure to radiation	2.1. Keep time in areas of high dose rate and movement within active work areas to a minimum to ensure that allocated dose levels are not exceeded 2.2. Use temporary shielding wherever possible and reasonably practical, taking due account of time constraints and costs 2.3. Apply working methods, sequences and tools to minimise actual and potential dose and contamination 2.4. Accurately interpret information on the radiological environment
3. Be able to follow organisational procedures	3.1. Seek information and advice promptly from relevant people in the event of difficulty 3.2. Respond immediately and safely to alarms in line with specified procedures 3.3. Wear necessary personal protective equipment at all times in areas designated as requiring its use 3.4. Work safely at all times, complying with health and safety and other relevant regulations and guidelines

UNIT N405K	**HOW TO PROVIDE OPERATIONAL MONITORING ASSISTANCE WITHIN A NUCLEAR DECOMMISSIONING ENVIRONMENT**
LEVEL	**2**
CREDIT VALUE	**2**
GUIDED LEARNING HOURS	**12**

Unit Overview

This unit addresses the knowledge required to provide operational monitoring assistance when working with nuclear decommissioning.

Assessment Guidance and Evidence Requirements

The learner should provide evidence to meet all the required knowledge and understanding within this unit. This could be provided through different types of evidence and assessment methods, for example learner statements, questioning and professional discussion which should be recorded for verification.

- This unit is subject to the requirements set out in the Cogent Assessment Strategy.
- The assumed pre-requisite is that the learner is a trained operative and that extra practice and assessment is required for assisting colleagues.

Information on use of Assessment Context

Explicit training and assessment is required for this support role. There is a variety of equipment, controlled areas and radiation/contamination levels to be considered.

This unit covers the knowledge required to confirm that monitoring equipment is in good working condition and the dose control procedures are complied with.

Note: Within this unit monitoring refers to health physics monitoring and not to supervision of personnel.

During this work the learner must take account of the relevant worksite operational requirements, procedures and safe working practices AS THEY APPLY TO THE LEARNER.

This involves the application of training to well-defined routine tasks, coping with straightforward problems and an awareness of the information relevant to the job.

The following terms have a specific meaning in this unit:

Areas:
The competence covered by this Unit applies to working within a radiation/contamination controlled environment as defined in the ionising radiations regulations (IRR's) and which may be designated as supervised, controlled or restricted access.

Personal protective measures:
Different working situations call for different measures according to whether they have been designated as free breathing, requiring the use of respirators, or requiring the use of an independent air supply which might include pressurised suits, breathing apparatus (BA) sets, air-fed hoods

Learning Outcome and Assessment Criteria

Learning outcomes The learner will:	Assessment criteria The learner can:
1. Know the principles and techniques that are used when providing operational monitoring assistance	1.1. Explain the appropriate radiation and personal protective measures for the different working situations 1.2. Explain the key factors which ensure that appropriate radiation and personal protective measures are used correctly 1.3. Explain the working area demarcation and control procedures 1.4. Describe the decontamination techniques
2. Know how to work safely when providing operational monitoring assistance	2.1. Identify typical situations which may lead to conflict between general safety and radiation safety requirements 2.2. Explain the principles of risk minimisation 2.3. Explain the purpose of the dose measuring equipment/personal dose control 2.4. Describe how to provide support to others and the key factors to be considered to ensure their safety 2.5. Identify the key features of good housekeeping of the working area, and how and to whom these should be reported
3. Know how to follow organisational procedures	3.1. Describe the reporting procedures and documentation 3.2. Describe the radiation safety requirements including • personal protection • protection of others • administrative and organisational requirements • practical provisions including ALARP 3.3. Explain how to identify sources of specialist advice

UNIT N405C	**PROVIDE OPERATIONAL MONITORING ASSISTANCE WITHIN A NUCLEAR DECOMMISSIONING ENVIRONMENT**
LEVEL	**2**
CREDIT VALUE	**2**
GUIDED LEARNING HOURS	**4**

Unit Overview

This unit addresses the skills required to provide operational monitoring assistance when working with nuclear decommissioning.

Assessment Guidance and Evidence Requirements

Evidence Requirements

Learners must provide at least 3 different pieces of performance evidence. Taken as a whole, the learner must provide performance evidence which shows that s/he has dealt with;

- At least 2 types of area **designated as supervised; controlled; or restricted**
- 2 types of personal protective measures as described in the Assessment Context

Assessment Guidance

- The use of simulation is not acceptable in the assessment of this unit.
- Workplace performance evidence is mandatory.
- This unit is subject to the requirements set out in the Cogent Assessment Strategy.
- This unit should not be taken prior to taking N405k – *How to Provide Operational Monitoring Assistance within a Nuclear Decommissioning Environment*.
- The assumed pre-requisite is that the learner is a trained operative and that extra practice and assessment is required for assisting colleagues.

Information on use of Assessment Context

This unit covers the competence required to confirm that monitoring equipment is in good working condition and the dose control procedures are complied with.

Note: Within this unit monitoring refers to health physics monitoring and not to supervision of personnel.

During this work the learner must take account of the relevant worksite operational requirements, procedures and safe working practices AS THEY APPLY TO THE LEARNER.

The following terms have a specific meaning in this unit:

Areas:
The competence covered by this Unit applies to working within a radiation/contamination controlled environment as defined in the ionising radiations regulations (IRR's) and which may be designated as supervised, controlled or restricted access.

Personal protective measures:
Different working situations call for different measures according to whether they have been designated as free breathing, requiring the use of respirators, or requiring the use of an independent air supply which might include pressurised suits, breathing apparatus (BA) sets, air-fed hoods

Learning Outcome and Assessment Criteria

Learning outcomes **The learner will:**	**Assessment criteria** **The learner can:**
1. Be able to work safely when providing monitoring assistance	1.1. Identify the appropriate radiation and personal protective measures for the working situation 1.2. Use the appropriate radiation and personal protective measures correctly throughout 1.3. Provide support and monitoring of others when required 1.4. Provide support and monitoring of others in such a manner as to safeguard yourself and colleagues
2. Be able to identify and report safety issues when giving monitoring assistance	2.1. Promptly and clearly communicate general safety and radiation safety requirement conflicts to your immediate supervisor to seek advice 2.2. Accurately assess and report the state of housekeeping of the working area to your immediate supervisor
3. Be able to follow organisational procedures	3.1. Work safely at all times, complying with health and safety and other relevant regulations and guidelines

UNIT N406K	**HOW TO IMPLEMENT SAFE ACCESS SYSTEMS IN A RADIATION/CONTAMINATION CONTROLLED ENVIRONMENT**
LEVEL	**3**
CREDIT VALUE	**3**
GUIDED LEARNING HOURS	**16**

Unit Overview

This unit addresses the knowledge required to implement safe access systems in a radiation/contamination controlled environment when working with nuclear decommissioning.

Assessment Guidance and Evidence Requirements

The learner should provide evidence to meet all the required knowledge and understanding within this unit. This could be provided through different types of evidence and assessment methods, for example learner statements, questioning and professional discussion which should be recorded for verification.

- This unit is subject to the requirements set out in the Cogent Assessment Strategy.
- The assumption is made that the learner is a trained operative with theoretical training and assessment to enable them to use different assessment methods and techniques to set up safe access areas.

Information on use of Assessment Context

This unit covers the knowledge required to implement safe access systems in a radiation/contamination controlled environment where the learner's responsibility is limited to working within detailed specifications and clearly defined procedures.

During this work the learner must take account of the relevant worksite operational requirements, procedures and safe working practices AS THEY APPLY TO THE LEARNER.

The following terms have a specific meaning in this unit:

Review

- Analysis
- Provision of feedback

Learning Outcome and Assessment Criteria

Learning outcomes The learner will:	Assessment criteria The learner can:
1. Know the concepts of safe access systems	1.1. Explain the principles of contamination and radiation control
2. Know how to communicate information effectively	2.1. Explain how to present information
3. Know how to work safely	3.1. Explain the Safe System of Work procedures and guidelines 3.2. Explain the safety assessment methods and techniques
4. Know how to follow organisational procedures	4.1. Describe the organisational information systems and procedures 4.2. Describe the reporting lines and procedures 4.3. Explain the Health and Safety legislation, regulations and safe working practices and procedures

UNIT N406C	IMPLEMENT SAFE ACCESS SYSTEMS IN A RADIATION/CONTAMINATION CONTROLLED ENVIRONMENT
LEVEL	**2**
CREDIT VALUE	**3**
GUIDED LEARNING HOURS	**6**

Unit Overview

This unit addresses the skills required to implement safe access systems in a radiation/contamination controlled environment when working with nuclear decommissioning.

Assessment Guidance and Evidence Requirements

Evidence Requirements

The learner must provide at least 3 different examples of performance evidence. Taken as a whole, the learner must provide performance evidence covering;

- At least 2 examples of modifying or amending safe access systems
- At least 1 example of reviewing system operations and forwarding suggestions
- Provision of verbal information to others on system requirements and responsibilities

Typical types of performance evidence for this unit would include procedures followed, records and reports produced. Observation and examination of outcomes and records will probably provide the most effective methods of assessment.

Assessment Guidance

- The use of simulation is not acceptable in the assessment of this unit.
- Workplace performance evidence is mandatory.
- This unit is subject to the requirements set out in the Cogent Assessment Strategy.
- This unit should not be taken prior to taking N406k – *How to Implement Safe Access Systems in a Radiation/Contamination Controlled Environment*.
- The assumed pre-requisite is that the learner is a trained operative, with specific job practice and assessment needed to set up and monitor controlled safe access systems.

Information on use of Assessment Context

The learner needs significant training and practice initially but this evolves into routine procedures with limited autonomy.

This unit covers the competence required to implement safe access systems in a radiation/contamination controlled environment where the learner's responsibility is limited to working within detailed specifications and clearly defined procedures.

During this work the learner must take account of the relevant worksite operational requirements, procedures and safe working practices AS THEY APPLY TO THE LEARNER.

The following terms have a specific meaning in this unit:

Review

- Analysis
- Provision of feedback

Learning Outcome and Assessment Criteria

Learning outcomes The learner will:	Assessment criteria The learner can:
1. Be able to set the access controls	1.1. Set access controls to meet agreed and approved system procedures
2. Be able to communicate information to the right people	2.1. Communicate system requirements and the responsibilities of individuals to the appropriate people
3. Be able to contribute to the improvement of working practices	3.1. Review system operations regularly and forward suggestions for improvement to the appropriate people
4. Be able to follow organisational procedures	4.1. Make sure that system records are accurate, up-to-date and complete and are stored correctly 4.2. Work safely at all times, complying with health and safety and other relevant regulations and guidelines

UNIT N407K	**HOW TO PREPARE ENGINEERING EQUIPMENT FOR USE IN A RADIATION/CONTAMINATION CONTROLLED ENVIRONMENT**
LEVEL	**2**
CREDIT VALUE	**2**
GUIDED LEARNING HOURS	**12**

Unit Overview

This unit addresses the knowledge required to prepare engineering equipment for use in a radiation/contamination controlled environment when working with nuclear decommissioning.

Assessment Guidance and Evidence Requirements

The learner should provide evidence to meet all the required knowledge and understanding within this unit. This could be provided through different types of evidence and assessment methods, for example learner statements, questioning and professional discussion which should be recorded for verification.

- This unit is subject to the requirements set out in the Cogent Assessment Strategy.
- The assumption is made that the learner is a trained operative who has some knowledge of safe testing of mechanical and electrical equipment. There is clear legislation on checks and testing of portable equipment.
- This is routine work to clearly defined procedures. Results that are outside of limits are escalated.

Information on use of Assessment Context

This unit covers the knowledge required to prepare equipment for engineering activities within a radiation or contamination controlled area as defined in current Ionising Radiations Regulations (IRRs).

During this work the learner must take account of the relevant worksite operational requirements, procedures and safe working practices AS THEY APPLY TO THE LEARNER.

The following terms have a specific meaning in this unit:

Equipment to be checked:
The sorts of equipment to be checked which would need to be prepared would be dependent on the activities to be carried out but would include portable and hand tools for cutting and dismantling contaminated plant, structures and equipment used within nuclear facilities (e.g. drills, angle grinders, torque wrenches etc) as well as portable and hand tools use in the decontamination of plant, structures and equipment. It would also include equipment needed to enable the control of radioactive waste and tools used in erecting and dismantling structures used to provide access and protection while work is carried out.

Procedures to be followed:
The procedures to be followed would include changing settings or the calibration of equipment as well as routine checks on condition, operation and safety. The person carrying out this role would be responsible for determining and then implementing the preparations needed, even if not fully specified in work instructions.

Environment preparation:
Typical preparatory activities will include provision of barriers, notices, floor coverings, support services, disposal containers. Preparations may involve changing settings or the calibrations of equipment as well as routine checks on condition, operation and safety. Preparations involve non-standard treatments and/or require taking instrument readings for analysis, positioning of structures to provide access and protection while work is carried out.

Learning Outcome and Assessment Criteria

Learning outcomes The learner will:	Assessment criteria The learner can:
1. Know how to prepare engineering equipment	1.1. Explain the equipment preparation methods and procedures
2. Know which tools to use and how to look after them	2.1. Identify the types of equipment and tools that are used in engineering equipment preparation 2.2. Explain tool and equipment care and control procedures
3. Know how to follow organisational procedures when preparing engineering equipment	3.1. Describe the service supply and connection procedures 3.2. Identify the reporting lines and procedures 3.3. Explain the Health and Safety legislation, regulations and safe working practices and procedures

UNIT N407C	**PREPARE ENGINEERING EQUIPMENT FOR USE IN A RADIATION/CONTAMINATION CONTROLLED ENVIRONMENT**
LEVEL	**2**
CREDIT VALUE	**2**
GUIDED LEARNING HOURS	**8**

Unit Overview

This unit addresses the skills required to prepare engineering equipment for use in a radiation/contamination controlled environment when working with nuclear decommissioning.

Assessment Guidance and Evidence Requirements

Evidence Requirements

The learner must provide at least 3 different examples of performance evidence. Taken as a whole, the learner must provide performance evidence covering;

- At least 2 different types of equipment
- At least 2 different areas
- Performance evidence must show consistent achievement of preparations over time

Assessment Guidance

- The use of simulation is not acceptable in the assessment of this unit.
- Workplace performance evidence is mandatory.
- This unit is subject to the requirements set out in the Cogent Assessment Strategy.
- This unit should not be taken prior to taking *N407k – How to Prepare Engineering Equipment for use in a radiation/contamination controlled environment*.
- The assumed pre-requisite is that the learner is a trained operative with extra experience in checking and testing equipment. The work is routine, using simple procedures, with well-defined actions to take if equipment does not meet requirements.

Information on use of Assessment Context

This unit covers the competence required to prepare equipment for engineering activities within a radiation or contamination controlled area as defined in current Ionising Radiations Regulations (IRRs).

During this work the learner must take account of the relevant worksite operational requirements, procedures and safe working practices AS THEY APPLY TO THE LEARNER.

The following terms have a specific meaning in this unit:

Equipment to be checked:
The sorts of equipment to be checked which would need to be prepared would be dependent on the activities to be carried out but would include portable and hand tools for cutting and dismantling contaminated plant, structures and equipment used within nuclear facilities (e.g. drills, angle grinders, torque wrenches etc) as well as portable and hand tools use in the decontamination of plant, structures and equipment. It would also include equipment needed to enable the control of radioactive waste and tools used in erecting and dismantling structures used to provide access and protection while work is carried out.

Procedures to be followed:
The procedures to be followed would include changing settings or the calibration of equipment as well as routine checks on condition, operation and safety. The person carrying out this role would be responsible for determining and then implementing the preparations needed, even if not fully specified in work instructions.

Environment preparation:
Typical preparatory activities will include provision of barriers, notices, floor coverings, support services, disposal containers. Preparations may involve changing settings or the calibrations of equipment as well as routine checks on condition, operation and safety. Preparations involve non-standard treatments and/or require taking instrument readings for analysis, positioning of structures to provide access and protection while work is carried out.

Learning Outcome and Assessment Criteria

Learning outcomes **The learner will:**	**Assessment criteria** **The learner can:**
1. Be able to understand and interpret the documentation	1.1. Follow and make appropriate use of the specifications for the product or asset being checked
2. Be able to prepare engineering equipment accurately and safely	2.1. Use all the correct tools and inspection equipment and check that they are in usable condition 2.2. Carry out the checks in an appropriate sequence using approved methods and procedures
3. Be able to identify and report any quality assurance problems	3.1. Identify and assess any defects or variations from the specification and take appropriate action
4. Be able to follow organisational procedures	4.1. Report completion of compliance activities in line with organisational procedures 4.2. Work safely at all times, complying with health and safety and other relevant regulations and guidelines

UNIT N408K	HOW TO CONTRIBUTE TO OWN DEVELOPMENT WITHIN IONISING RADIATION ENVIRONMENTS
LEVEL	**2**
CREDIT VALUE	**3**
GUIDED LEARNING HOURS	**16**

Unit Overview

This unit addresses the knowledge required to contribute to the learner's own development within Ionising Radiation environments.

Assessment Guidance and Evidence Requirements

The learner should provide evidence to meet all the required knowledge and understanding within this unit. This could be provided through different types of evidence and assessment methods, for example learner statements, questioning and professional discussion which should be recorded for verification.

- This unit is subject to the requirements set out in the Cogent Assessment Strategy.
- The assumption is made that the learner is a trained operative.

Information on use of Assessment Context

This unit deals with the following:

- Identifying and suggesting improvements to working practices and procedures – this covers the knowledge required to identify and evaluate opportunities for improving systems, work processes and practices and to develop and present proposals for improvements
- Developing self in the work role – this covers the knowledge required to take responsibility for the learner's own personal development. They will be required to maintain personal action plans or records of their achievements
- Contributing to effective working relationships – this covers the knowledge required to maintain effective working relationships

During this work the learner must take account of the relevant worksite operational requirements, procedures and safe working practices AS THEY APPLY TO THE LEARNER.

The following terms have a specific meaning in this unit:

Improvements:
Improvements are to the range of work activities associated with the individual's role and deal with technical and/or operational aspects of those activities. Improvements may be such as the practices and procedures followed, techniques, methods, equipment and materials used, scheduling and other logistic issues. Improvements can be to both routine and more complex actions and situations that may be experienced. Improvements may be in terms of: cost effectiveness, safety, and quality. Improvements can be identified through evaluation/studies, use of quality circles and/or individual consideration of current practice. Evaluation information may come from a range of different sources including: work records, colleagues in the Workplace, organisational and industry publications, and contacts in other decommissioning environments.

Discussions:
The learner may contribute to discussions which can be formal, e.g. committees or informal, e.g. toolbox talks, safety committees etc, but must include the learner.

Presentation:
Presentation of improvements can be made orally and in writing. Different formats are likely to be needed depending on the organisation's preferences and the context in which the presentation is made e.g. formally (e.g. in a report) or informally (e.g. through suggestion boxes)

Assessment techniques and processes:
The assessment techniques and processes used would include: organisational progress reviews and Appraisals, self-assessment through reflection or the use of diagnostic aids. The kinds of models which would underpin assessment would include: national occupational standards and other competence based systems, organisational models for work performance, and job/role specifications.

Development objectives:
Development objectives relate to all competencies which are required currently and in the foreseeable future for the individual's work role and other roles to which s/he wishes to progress. Development objectives will be set in collaboration with the employer and require the individual to play an active role in reviewing and taking account of past performance.

Others who can provide feedback:
Feedback and guidance can be provided by: line management, personnel or training specialists, and colleagues in the individual's work team.

Relationships:
Effective working interactions depend on good relationships between colleagues who may be working with the individual: on a one-to one basis, as a member of a team or work group, on a frequent and/or regular basis, and on an occasional or one-off basis.

Communications:
Communications involved in supporting working relationships would take place: orally (e.g. face to face, telephone, radio), through documentation, and through electronic records and messaging systems.

Learning Outcome and Assessment Criteria

Learning outcomes **The learner will:**	**Assessment criteria** **The learner can:**
1. Know the organisational structure that enables the identification of improvements	1.1. Explain the organisational structure, improvement systems and procedures 1.2. Explain the work improvement methods and techniques
2. Know how to use information to identify and present suggestions for improvement	2.1. Explain how to identify and access sources of information 2.2. Discuss how information might be presented
3. Know the strategies in place to aid personal development	3.1. Identify self-assessment models and techniques 3.2. Identify training and development opportunities 3.3. Describe how to identify and set development objectives
4. Know how to contribute to effective working relationships	4.1. Discuss how to manage working relationships 4.2. Discuss the range of problems that may affect working relationships
5. Know how to follow organisational procedures	5.1. Explain the reporting lines and procedures 5.2. Explain the lines of communication and responsibility 5.3. Explain the Health and Safety legislation, regulations and safe working practices and procedures

UNIT N408C	CONTRIBUTE TO OWN DEVELOPMENT WITHIN IONISING RADIATION ENVIRONMENTS
LEVEL	**2**
CREDIT VALUE	**3**
GUIDED LEARNING HOURS	**8**

Unit Overview

This unit addresses the skills required to contribute to the learners own development when working within Ionising Radiation environments.

Assessment Guidance and Evidence Requirements

Evidence Requirements

Identify and suggest improvements to working practices and procedures - The learner must provide at least three different examples of performance evidence of identification and suggested improvements. Taken as a whole, the performance evidence must cover;

- At least 1 example of identifying where improvements can be made
- At least 1 example of presentation of the suggestion to improve as described in the assessment context
- At least 1 example of contributing to discussions

Develop self in the work role - The learner must provide at least 3 different examples of performance evidence. Taken as a whole, the learner must provide performance evidence covering;

- At least 1 example of development objectives relating to the current work role
- At least 2 types of assessment techniques and processes as described in the assessment context
- Both types of review
- Feedback and advice from at least 2 types of relevant people

Contribute to Effective Working Relationships - The learner must provide at least 3 different examples of performance evidence. Taken as a whole, the learner must provide performance evidence covering;

- At least 1 example of contributing to working relationships within their own workgroup
- At least 1 example of seeking advice from colleagues

Evidence must show that the learner has developed and maintained relationships with people worked with on a regular and/or frequent basis over a period of time of not less than three months duration.

Note: Where performance evidence of the learner's competence in dealing with disagreements is not available, the learner's awareness of how to deal constructively with such situations must be obtained by direct questioning.

Assessment Guidance

- The use of simulation is not acceptable in the assessment of this unit.
- Workplace performance evidence is mandatory.
- This unit is subject to the requirements set out in the Cogent Assessment Strategy.
- This unit should not be taken prior to taking *N408k - How to contribute to own development within ionising radiation environments.*
- The assumed pre-requisite is that the learner is a trained operative, who is developing as a team player.

Information on use of Assessment Context

This unit deals with the following:

- Identifying and suggesting improvements to working practices and procedures – this covers the competence required to identify and evaluate opportunities for improving systems, work processes and practices and to develop and present proposals for improvements
- Developing self in the work role – this covers the competence required to take responsibility for the learner's own personal development. They will be required to maintain personal action plans or records of their achievements
- Contributing to effective working relationships – this covers the competence required to maintain effective working relationships

During this work the learner must take account of the relevant worksite operational requirements, procedures and safe working practices AS THEY APPLY TO THE LEARNER.

The following terms have a specific meaning in this unit:

Improvements:
Improvements are to the range of work activities associated with the individual's role and deal with technical and/or operational aspects of those activities. Improvements may be such as the practices and procedures followed, techniques, methods, equipment and materials used, scheduling and other logistic issues. Improvements can be to both routine and more complex actions and situations that may be experienced. Improvements may be in terms of: cost effectiveness, safety, and quality. Improvements can be identified through evaluation/studies, use of quality circles and/or individual consideration of current practice. Evaluation information may come from a range of different sources including: work records, colleagues in the Workplace, organisational and industry publications, and contacts in other decommissioning environments.

Discussions:
The learner may contribute to discussions which can be formal, e.g. committees or informal, e.g. toolbox talks, safety committees etc, but must include the learner.

Presentation:
Presentation of improvements can be made orally and in writing. Different formats are likely to be needed depending on the organisation's preferences and the context in which the presentation is made e.g. formally (e.g. in a report) or informally (e.g. through suggestion boxes)

Assessment techniques and processes:
The assessment techniques and processes used would include: organisational progress reviews and Appraisals, self-assessment through reflection or the use of diagnostic aids. The kinds of models which would underpin assessment would include: national occupational standards and other competence based systems, organisational models for work performance, and job/role specifications.

Development objectives:
Development objectives relate to all competencies which are required currently and in the foreseeable future for the individual's work role and other roles to which s/he wishes to progress. Development objectives will be set in collaboration with the employer and require the individual to play an active role in reviewing and taking account of past performance.

Others who can provide feedback:
Feedback and guidance can be provided by: line management, personnel or training specialists, and colleagues in the individual's work team.

Relationships:
Effective working interactions depend on good relationships between colleagues who may be working with the individual: on a one-to one basis, as a member of a team or work group, on a frequent and/or regular basis, and on an occasional or one-off basis.

Communications:
Communications involved in supporting working relationships would take place: orally (e.g. face to face, telephone, radio), through documentation, and through electronic records and messaging systems.

Learning Outcome and Assessment Criteria

Learning outcomes The learner will:	Assessment criteria The learner can:
1. Be able to identify improvements to working practices	1.1. Collect information and feedback on current working practices and procedures 1.2. Assess current working practices and procedures against agreed standards 1.3. Identify opportunities for improving working practices and procedures 1.4. Ensure that suggested improvements meet organisational and health and safety requirements
2. Be able to present and develop proposals for improvements to working practices	2.1. Present suggestions for improvements in accordance with organisational procedures 2.2. Contribute to discussions about work practices and quality
3. Be able to take responsibility for personal development	3.1. Assess your current competence and areas for development using relevant techniques and processes 3.2. Review your performance and progress regularly and use the outcome to plan future development activities 3.3. Seek constructive feedback and advice from others and use it to help you maintain and improve your performance 3.4. Identify development objectives that are realistic and achievable 3.5. Agree with line management the time and other resources needed to help you achieve the development objectives
4. Be able to contribute to effective working relationships	4.1. Establish and maintain productive working relationships 4.2. Deal with disagreements in an amicable and constructive way so that good relationships are maintained 4.3. Seek assistance from others in a polite and courteous way without causing undue disruption to normal work activities 4.4. Keep others informed about work plans or activities which affect them 4.5. Respond in a timely and positive way when others ask for help or information
5. Be able to follow organisational procedures	5.1. Work safely at all times, complying with health and safety and other relevant regulations and guidelines

OPTIONAL UNITS – GROUP 1

UNIT N409K	**HOW TO PREPARE ALPHA RADIATION/CONTAMINATION CONTROLLED WORK AREAS WITHIN A NUCLEAR DECOMMISSIONING ENVIRONMENT**
LEVEL	**2**
CREDIT VALUE	**2**
GUIDED LEARNING HOURS	**12**

Unit Overview

This unit addresses the knowledge required to prepare alpha radiation/contamination controlled work areas within nuclear environments.

Assessment Guidance and Evidence Requirements

The learner should provide evidence to meet all the required knowledge and understanding within this unit. This could be provided through different types of evidence and assessment methods, for example learner statements, questioning and professional discussion which should be recorded for verification.

- This unit is subject to the requirements set out in the Cogent Assessment Strategy.
- The assumption is made that the learner is a trained operative with specific training and assessment of working with alpha particles and compressed air suits.
- The work is physically hard but well defined.

Information on use of Assessment Context

This unit covers the knowledge required to prepare alpha radiation or contamination controlled work areas and may be applied to Post Operational Clean Out (POCO). Generally, this unit should be applied to the work undertaken to prepare the work area for an activity which aids nuclear decommissioning and will not include positioning and construction of equipment.

During this work the learner must take account of the relevant worksite operational requirements, procedures and safe working practices AS THEY APPLY TO THE LEARNER.

The following terms have a specific meaning in this unit:

Work area:
The work area is an alpha radiation/contamination controlled environment as defined in current ionising radiations regulations (IRR's).

Work area preparations:
Typical preparatory actions would include the provision of floor coverings, support services and disposal containers. Preparatory actions to protect other workers would include the provision of barriers and notices. The person carrying out this role would be responsible for determining and then implementing the preparations needed, even if not fully specified in work instructions.

Appropriate people:
The people who should be informed when preparations are complete are the area supervisor and line supervisor.

Work area protection and safety requirements:
The protection and safety requirements would include; consulting with radiation protection specialist to ensure correct safety procedures are followed, working to As Low As Reasonably Practical (ALARP) principles at all times, ensuring that the work area has been surveyed for radiation/contamination levels, interpretation of survey data correctly and reporting any abnormalities to appropriate people, ensuring that alpha in air alarms are operating correctly, and following criticality procedures exactly.

Learning Outcome and Assessment Criteria

Learning outcomes **The learner will:**	**Assessment criteria** **The learner can:**
1. Know the procedures involved when preparing alpha radiation/contamination controlled work areas within nuclear environments	1.1. Outline health and safety legislation, regulations and safe working practices and procedures 1.2. Explain service supply and connection procedures 1.3. Explain tool and equipment care and control procedures 1.4. Explain criticality alarms and evacuation procedures 1.5. Define reporting lines and procedures
2. Know why it is important to prepare the work areas in the correct manner	2.1. Explain the requirements and methods for work area preparation 2.2. Explain the consequences of not preparing work areas correctly
3. Know how to correctly use materials and equipment when preparing alpha radiation/contamination controlled work areas	3.1. Explain how to identify materials and recognise defects 3.2. Describe material handling and preparation methods and techniques 3.3. Explain the correct use of criticality lockets/belts
4. Know how to identify the properties and hazards connected with alpha radiation	4.1. Explain the properties and hazards connected with alpha radiation

UNIT N409C	**PREPARE ALPHA RADIATION/CONTAMINATION CONTROLLED WORK AREAS WITHIN A NUCLEAR DECOMMISSIONING ENVIRONMENT**
LEVEL	**2**
CREDIT VALUE	**2**
GUIDED LEARNING HOURS	**4**

Unit Overview

This unit addresses the skills required to prepare alpha radiation/contamination controlled work areas within nuclear environments.

Assessment Guidance and Evidence Requirements

Evidence Requirements

The learner must provide at least 3 different examples of performance evidence. Taken as a whole, the learner must provide performance evidence covering;

- At least 3 different work area preparations
- At least 1 type of work area as described in the Assessment Context, consistently over time

Assessment Guidance

- The use of simulation is not acceptable in the assessment of this unit.
- Workplace performance evidence is mandatory.
- This unit is subject to the requirements set out in the Cogent Assessment Strategy.
- This unit should not be taken prior to taking N409k - *How to Prepare Alpha Radiation/Contamination Controlled Work Areas within a Nuclear Decommissioning Environment*.
- The assumed pre-requisite is that the learner is a trained operative. This is generally a routine task, with straight forward problem solving. The learner takes responsibility for the completion of the work.
- Observation and examination of outcomes and records will probably provide the most effective methods of assessment.

Information on use of Assessment Context

This unit covers the competence required to prepare alpha radiation or contamination controlled work areas and may be applied to Post Operational Clean Out (POCO). Generally, this unit should be applied to the work undertaken to prepare the work area for an activity which aids nuclear decommissioning and will not include positioning and construction of equipment.

During this work the learner must take account of the relevant worksite operational requirements, procedures and safe working practices AS THEY APPLY TO THE LEARNER.

The following terms have a specific meaning in this unit:

Work area:
The work area is an alpha radiation/contamination controlled environment as defined in current ionising radiations regulations (IRR's).

Work area preparations:
Typical preparatory actions would include the provision of floor coverings, support services and disposal containers. Preparatory actions to protect other workers would include the provision of barriers and notices. The person carrying out this role would be responsible for determining and then implementing the preparations needed, even if not fully specified in work instructions.

Appropriate people:
The people who should be informed when preparations are complete are the area supervisor and line supervisor.

Work area protection and safety requirements:
The protection and safety requirements would include; consulting with radiation protection specialist to ensure correct safety procedures are followed, working to As Low As Reasonably Practical (ALARP) principles at all times, ensuring that the work area has been surveyed for radiation/contamination levels, interpretation of survey data correctly and reporting any abnormalities to appropriate people, ensuring that alpha in air alarms are operating correctly, and following criticality procedures exactly.

Learning Outcome and Assessment Criteria

Learning outcomes **The learner will:**	**Assessment criteria** **The learner can:**
1. Be able to follow procedures for preparing alpha radiation or contamination controlled work areas	1.1. Ensure that the work environment is free from hazards and obstructions and is suitable for the work activities to be undertaken 1.2. Ensure that all necessary service supplies are connected and ready for use 1.3. Prepare the work areas so that they are ready for the engineering activities to be carried out 1.4. Make sure that required safety arrangements are in place to protect other workers from any activities which are likely to disrupt normal working
2. Be able to deal with problems and communicate with the appropriate people when necessary	2.1. Inform the appropriate people when work area preparations are completed 2.2. Deal promptly and effectively with problems within your control and report those that cannot be solved
3. Be able to comply with health and safety, and other relevant regulations and guidelines	3.1. Work safely at all times, complying with health and safety and other relevant regulations and guidelines

UNIT N410K	**HOW TO PREPARE BETA/GAMMA RADIATION/CONTAMINATION CONTROLLED WORK AREAS WITHIN A NUCLEAR DECOMMISSIONING ENVIRONMENT**
LEVEL	**2**
CREDIT VALUE	**2**
GUIDED LEARNING HOURS	**16**

Unit Overview

This unit addresses the knowledge required to prepare beta/gamma radiation/contamination controlled work areas when working with nuclear decommissioning.

Assessment Guidance and Evidence Requirements

The learner should provide evidence to meet all the required knowledge and understanding within this unit. This could be provided through different types of evidence and assessment methods, for example learner statements, questioning and professional discussion which should be recorded for verification.

- This unit is subject to the requirements set out in the Cogent Assessment Strategy.
- The assumption is made that the learner is a trained operative with specific training and assessment of working with beta/gamma radiation.

Information on use of Assessment Context

This unit covers the knowledge required to prepare beta/gamma radiation or contamination controlled work areas and may be applied to Post Operational Clean Out (POCO).

Generally, this unit should be applied to the work undertaken to prepare the work area for an activity which aids nuclear decommissioning and will not include positioning and construction of equipment.

During this work the learner must take account of the relevant worksite operational requirements, procedures and safe working practices AS THEY APPLY TO THE LEARNER.

The following terms have a specific meaning in this unit:

Work area:
The work area is a beta/gamma radiation/contamination controlled environment as defined in current ionising radiations regulations (IRR's).

Work area preparations:
Typical preparatory actions would include the provision of floor coverings, support services and disposal containers. Preparatory actions to protect other workers would include the provision of barriers and notices. The person carrying out this role would be responsible for determining and then implementing the preparations needed, even if not fully specified in work instructions, and the provision of extra shielding if needed.

Work area protection and safety requirements:
The protection and safety requirements would include consulting with radiation protection specialist to ensure correct safety procedures are followed. Work to As Low As Reasonably Practical (ALARP) principles at all times. Ensure that Beta in air and gamma alarms are operating correctly. Accurately establish the radiation levels of the area and agree the working time with HP & S contacts. Follow criticality procedures exactly.

Appropriate people:
The people who should be informed when preparations are complete are the area supervisor and line supervisor.

Learning Outcome and Assessment Criteria

Learning outcomes The learner will:	Assessment criteria The learner can:
1. Know how to prepare the work area	1.1. Explain the requirements and methods for work area preparation 1.2. Explain service supply and connection procedures
2. Know how to work with the materials	2.1. Describe how to identify materials and recognise defects 2.2. Describe material handling and preparation methods and techniques
3. Know how to work safely to minimise risk	3.1. Explain the use of 'working time limits' in the control of beta/gamma radiation exposure 3.2. Explain the properties and hazards associated with working in beta/gamma radiation areas 3.3. Explain the consequences of not preparing work areas correctly
4. Know how to follow organisational procedures	4.1. Define the reporting lines and procedures 4.2. Explain tool and equipment care and control procedures 4.3. Explain the Health and Safety legislation, regulations and safe working practices and procedures

UNIT N410C	**PREPARE BETA/GAMMA RADIATION/CONTAMINATION CONTROLLED WORK AREAS WITHIN A NUCLEAR DECOMMISSIONING ENVIRONMENT**
LEVEL	**2**
CREDIT VALUE	**2**
GUIDED LEARNING HOURS	**4**

Unit Overview

This unit addresses the skills required to prepare beta/gamma radiation/contamination controlled work areas when working with nuclear decommissioning.

Assessment Guidance and Evidence Requirements

Evidence Requirements

The learner must provide at least 3 different examples of performance evidence. Taken as a whole, the learner must provide performance evidence covering;

- At least 3 different work area preparations
- At least 1 type of work area as described in the Assessment Context, consistently over time

Assessment Guidance

- The use of simulation is not acceptable in the assessment of this unit.
- Workplace performance evidence is mandatory.
- This unit is subject to the requirements set out in the Cogent Assessment Strategy.
- This unit should not be taken prior to taking N410k - *How to Prepare Beta/Gamma Radiation/Contamination Controlled Work Areas within a Nuclear Decommissioning Environment*.
- The assumed pre-requisite is that the learner is a trained operative. This is generally a routine task, with straight forward problem solving. The learner takes responsibility for the completion of the work.
- Observation and examination of outcomes and records will probably provide the most effective methods of assessment.

Information on use of Assessment Context

This unit covers the competence required to prepare beta/gamma radiation or contamination controlled work areas and may be applied to Post Operational Clean Out (POCO). Generally, this unit should be applied to the work undertaken to prepare the work area for an activity which aids nuclear decommissioning and will not include positioning and construction of equipment.

During this work the learner must take account of the relevant worksite operational requirements, procedures and safe working practices AS THEY APPLY TO THE LEARNER.

The following terms have a specific meaning in this unit:

Work area:
The work area is a beta/gamma radiation/contamination controlled environment as defined in current ionising radiations regulations (IRR's).

Work area preparations:
Typical preparatory actions would include the provision of floor coverings, support services and disposal containers. Preparatory actions to protect other workers would include the provision of barriers and notices.

The person carrying out this role would be responsible for determining and then implementing the preparations needed, even if not fully specified in work instructions, and the provision of extra shielding if needed.

Work area protection and safety requirements:
The protection and safety requirements would include consulting with radiation protection specialist to ensure correct safety procedures are followed. Work to As Low As Reasonably Practical (ALARP) principles at all times. Ensure that Beta in air and gamma alarms are operating correctly. Accurately establish the radiation levels of the area and agree the working time with HP & S contacts. Follow criticality procedures exactly.

Appropriate people:
The people who should be informed when preparations are complete are the area supervisor and line supervisor.

Learning Outcome and Assessment Criteria

Learning outcomes **The learner will:**	**Assessment criteria** **The learner can:**
1. Be able to check that the work area is safe and ready to be prepared	1.1. Ensure that the work environment is free from hazards and obstructions and is suitable for the work activities to be undertaken 1.2. Ensure that all necessary service supplies are connected and ready for use
2. Be able to prepare the work area safely	2.1. Prepare the work areas so that they are ready for the engineering activities to be carried out 2.2. Make sure that required safety arrangements are in place to protect other workers from any activities which are likely to disrupt normal working
3. Be able to follow organisational procedures	3.1. Inform the appropriate people when work area preparations are completed 3.2. Deal promptly and effectively with problems within your control and report those that cannot be solved 3.3. Work safely at all times, complying with health and safety and other relevant regulations and guidelines

OPTIONAL UNITS – GROUP 2

UNIT N411K	**HOW TO ASSEMBLE EQUIPMENT TO AID NUCLEAR DECOMMISSIONING**
LEVEL	**2**
CREDIT VALUE	**2**
GUIDED LEARNING HOURS	**12**

Unit Overview

This unit addresses the knowledge required to assemble equipment to aid nuclear decommissioning.

Assessment Guidance and Evidence Requirements

The learner should provide evidence to meet all the required knowledge and understanding within this unit. This could be provided through different types of evidence and assessment methods, for example learner statements, questioning and professional discussion which should be recorded for verification.

- This unit is subject to the requirements set out in the Cogent Assessment Strategy.
- The assumption is made that the learner is a trained operative.

Information on use of Assessment Context

This unit covers the knowledge required to position and construct equipment to aid nuclear decommissioning by working within detailed specifications and clearly defined procedures.

This unit deals with the following:

- Assemble equipment to aid nuclear decommissioning

During this work the learner must take account of the relevant worksite operational requirements, procedures and safe working practices AS THEY APPLY TO THE LEARNER

The following terms have a specific meaning in this unit:

Construction elements:
The construction elements covered by this Unit include; tents, re-usable containment, mobile filtration units, preformed system scaffolding, work platforms. Individual elements to be positioned and fixed might include tent frames, containment panels, filtration units, system scaffold components. Assemblies of elements might include tent structures, ventilation systems, shielding walls/structures, scaffolds. Temporary support structures might include system scaffold, lifting frames, hoists, temporary stairways.

Specification:
The specification will detail the purpose of the installation to be provided (e.g. containment, access), the location where it is to be sited, the nature of the elements to be used to provide it, the techniques and procedures to be followed and the length of time the construction is to remain in place. The person carrying out this work is responsible for working to those specifications and for following approved and clearly defined procedures.

Radiation/contamination controlled environment:
The installation takes place within a radiation/contamination-controlled environment as defined in the ionising radiations regulations (IRR's)

Positioning and securing:
The techniques used to position and secure the elements would include bolting, tack welding, clamping, wedging. Where the installation is to be retained throughout the life of the project, connections may be made using wall brackets, pipe flanges/joints, rawlbolts. Where the installation is to have a temporary lifespan only connections would normally be made using hoses, brackets, clips and flexible ventilation trunking.

Work area safety requirements:
The work area safety requirements include fire hazards, such as keeping walkways unobstructed. This also indicates a responsibility to ensure personal safety of the person undertaking the work and colleagues within the area. There must be a consideration made regarding access and egress.

Learning Outcome and Assessment Criteria

Learning outcomes **The learner will:**	**Assessment criteria** **The learner can:**
1. Know how to construct equipment	1.1. Describe the types and application of equipment 1.2. Explain the construction element installation methods and techniques
2. Know how to work safely when assembling equipment	2.1. Identify the potential hazards to others while positioning equipment 2.2. Explain the methods of providing temporary support during installations 2.3. Describe the tool and equipment care and control procedures
3. Know how to follow organisational procedures when assembling equipment	3.1. Explain the reporting lines and procedures 3.2. Explain the Health and Safety legislation, regulations and safe working practices and procedures

UNIT N411C	ASSEMBLE EQUIPMENT TO AID NUCLEAR DECOMMISSIONING
LEVEL	**2**
CREDIT VALUE	**2**
GUIDED LEARNING HOURS	**4**

Unit Overview

This unit addresses the skills required to assemble equipment to aid nuclear decommissioning.

Assessment Guidance and Evidence Requirements

Evidence Requirements

The learner must provide at least 3 different examples of performance evidence. Taken as a whole, the performance evidence must deal with the positioning and construction of:

- At least 2 types of construction elements as described in the Assessment Context one of which must be an assembly and show that the learner has dealt with hazards relating to people
- Deal with at least 1 of the methods of positioning and securing as described in the Assessment Context
- At least one instance of resolving a problem by direct action

Assessment Guidance

- The use of simulation is not acceptable in the assessment of this unit.
- Workplace performance evidence is mandatory.
- This unit is subject to the requirements set out in the Cogent Assessment Strategy.
- This unit should not be taken prior to taking *N411k - How to Assemble Equipment to aid Nuclear Decommissioning*.
- The assumed pre-requisite is that the learner is a trained operative and that the work covers routine tasks and straightforward problems.
- Typical types of performance evidence for this unit would include fixed elements, processes followed and records maintained.
- Observation and examination of outcomes and records will probably provide the most effective methods of assessment.

Information on use of Assessment Context

This unit covers the competence required to position and construct equipment to aid nuclear decommissioning by working within detailed specifications and clearly defined procedures.

This unit deals with the following:

- Assemble equipment to aid nuclear decommissioning

During this work the learner must take account of the relevant worksite operational requirements, procedures and safe working practices AS THEY APPLY TO THE LEARNER.

The following terms have a specific meaning in this unit:

Construction elements:
The construction elements covered by this Unit include; tents, re-usable containment, mobile filtration units, preformed system scaffolding, work platforms. Individual elements to be positioned and fixed might include tent frames, containment panels, filtration units, system scaffold components. Assemblies of elements might include tent structures, ventilation systems, shielding walls/structures, scaffolds. Temporary support structures might include system scaffold, lifting frames, hoists, temporary stairways.

Specification:
The specification will detail the purpose of the installation to be provided (e.g. containment, access), the location where it is to be sited, the nature of the elements to be used to provide it, the techniques and procedures to be followed and the length of time the construction is to remain in place. The person carrying out this work is responsible for working to those specifications and for following approved and clearly defined procedures.

Radiation/contamination controlled environment:
The installation takes place within a radiation/contamination-controlled environment as defined in the ionising radiations regulations (IRR's)

Positioning and securing:
The techniques used to position and secure the elements would include bolting, tack welding, clamping, wedging. Where the installation is to be retained throughout the life of the project, connections may be made using wall brackets, pipe flanges/joints, rawlbolts. Where the installation is to have a temporary lifespan only connections would normally be made using hoses, brackets, clips and flexible ventilation trunking.

Work area safety requirements:
The work area safety requirements include fire hazards, such as keeping walkways unobstructed. This also indicates a responsibility to ensure personal safety of the person undertaking the work and colleagues within the area. There must be a consideration made regarding access and egress.

Learning Outcome and Assessment Criteria

Learning outcomes **The learner will:**	**Assessment criteria** **The learner can:**
1. Be able to prepare to assemble equipment	1.1. Determine what has to be done and how this will be achieved 1.2. Select the appropriate equipment and check that they are in a usable condition
2. Be able to assemble equipment safely	2.1. Position and secure the equipment in line with the specification 2.2. Securely fix any necessary temporary support facilities 2.3. Take appropriate measures to protect the finished construction
3. Be able to follow organisational procedures when assembling equipment	3.1. Deal promptly and effectively with problems within your control and report those that cannot be solved 3.2. Work safely at all times, complying with health and safety and other relevant regulations and guidelines

UNIT N412K	**HOW TO DISMANTLE EQUIPMENT USED IN NUCLEAR DECOMMISSIONING**
LEVEL	**2**
CREDIT VALUE	**2**
GUIDED LEARNING HOURS	**10**

Unit Overview

This unit addresses the knowledge required to dismantle equipment used in nuclear decommissioning.

Assessment Guidance and Evidence Requirements

The learner should provide evidence to meet all the required knowledge and understanding within this unit. This could be provided through different types of evidence and assessment methods, for example learner statements, questioning and professional discussion which should be recorded for verification.

- This unit is subject to the requirements set out in the Cogent Assessment Strategy.
- The assumption is made that the learner is a trained operative training in lifting, handling and dismantling techniques. The learner uses an understanding of basic principles to carry out well defined routine tasks.

Information on use of Assessment Context

This unit covers the knowledge required to dismantle equipment which has been used in nuclear decommissioning and is to be applied to the process of deconstruction of elements or assemblies positioned and erected to aid nuclear decommissioning. The unit may not be applied to the process of decommissioning, dismantling, disposal or removal of assets.

During this work the learner must take account of the relevant worksite operational requirements, procedures and safe working practices AS THEY APPLY TO THE LEARNER.

The following terms have a specific meaning in this unit:

Components:
The component covered by this Unit include tent frames, re-usable containment panels, mobile filtration units, ventilation systems, system scaffolding components, work platforms, lifting frames, hoists, temporary stairways, shielding walls/structures and assembled tents.

Dismantling methods and techniques:
Typical dismantling methods would include unbolting, oxy-fuel cutting, grinding/abrasive disc cutting, sawing, disconnecting, unclipping. The methods and techniques to be applied and the procedures to be followed would be clearly specified in the work instructions. The person carrying out this work is responsible for working to those instructions. Dismantling occurs following nuclear decommissioning work and takes place within a radiation/contamination controlled environment as defined in the ionising radiations regulations (IRR's)

Work area protection and safety requirements:
The safety requirements when undertaking dismantling, involves accurately establishing levels of radiation/contamination that are present in equipment. This is in addition to following all relevant procedures and guidelines.

Learning Outcome and Assessment Criteria

Learning outcomes The learner will:	Assessment criteria The learner can:
1. Know how to dismantle equipment safely	1.1. Describe the methods of providing temporary support during dismantling 1.2. Explain the construction element dismantling methods and techniques 1.3. Explain the types and application of construction elements 1.4. Explain the tool and equipment care and control procedures
2. Know how to follow organisational procedures	2.1. Explain the reporting lines and procedures 2.2. Explain the Health and Safety legislation, regulations and safe working practices and procedures

UNIT N412C	DISMANTLE EQUIPMENT USED IN NUCLEAR DECOMMISSIONING
LEVEL	**2**
CREDIT VALUE	**2**
GUIDED LEARNING HOURS	**6**

Unit Overview

This unit addresses the skills required to dismantle equipment used in nuclear decommissioning.

Assessment Guidance and Evidence Requirements

Evidence Requirements

The learner must provide at least 3 different examples of performance evidence. Taken as a whole, the performance evidence must deal with the application of;

- At least 2 different dismantling techniques
- Dismantling of at least 2 different components as described in the Assessment Context.

Assessment Guidance

- The use of simulation is not acceptable in the assessment of this unit.
- Workplace performance evidence is mandatory.
- This unit is subject to the requirements set out in the Cogent Assessment Strategy.
- This unit should not be taken prior to taking *N412k - How to Dismantle equipment used in nuclear decommissioning*.
- The assumed pre-requisite is that the learner is a trained operative, with an awareness of dismantling techniques. The tasks are well-defined and the problems are straightforward.
- Typical types of performance evidence for this element would include dismantled elements, and processes followed.

Information on use of Assessment Context

This unit covers the competence required to dismantle equipment which has been used in nuclear decommissioning and is to be applied to the process of deconstruction of elements or assemblies positioned and erected to aid nuclear decommissioning. The unit may not be applied to the process of decommissioning, dismantling, disposal or removal of assets.

During this work the learner must take account of the relevant worksite operational requirements, procedures and safe working practices AS THEY APPLY TO THE LEARNER.

The following terms have a specific meaning in this unit:

Components:
The component covered by this Unit include tent frames, re-usable containment panels, mobile filtration units, ventilation systems, system scaffolding components, work platforms, lifting frames, hoists, temporary stairways, shielding walls/structures and assembled tents.

Dismantling methods and techniques:
Typical dismantling methods would include unbolting, oxy-fuel cutting, grinding/abrasive disc cutting, sawing, disconnecting, unclipping. The methods and techniques to be applied and the procedures to be followed would be clearly specified in the work instructions. The person carrying out this work is responsible for working to those instructions. Dismantling occurs following nuclear decommissioning work and takes place within a radiation/contamination controlled environment as defined in the ionising radiations regulations (IRR's)

Work area protection and safety requirements:
The safety requirements when undertaking dismantling, involves accurately establishing levels of radiation/contamination that are present in equipment. This is in addition to following all relevant procedures and guidelines.

Learning Outcome and Assessment Criteria

Learning outcomes **The learner will:**	**Assessment criteria** **The learner can:**
1. Be able to dismantle equipment safely	1.1. Establish and where necessary support components before removal of securing devices 1.2. Remove the components in the correct sequence using approved equipment, methods and techniques 1.3. Inform the appropriate people when dismantling is completed
2. Be able to deal with damaged, re-usable or unwanted elements	2.1. Identify and attend to damage and defects in any re-usable elements and store them for re-use in an appropriate location 2.2. Dispose of unwanted elements in line with agreed and approved procedures
3. Be able to follow organisational procedures	3.1. Deal promptly and effectively with problems within their control and report those that cannot be solved 3.2. Work safely at all times, complying with health and safety and other relevant regulations and guidelines

UNIT N413K	**HOW TO CARRY OUT PLANNED PREVENTATIVE MAINTENANCE PROCEDURES ON EQUIPMENT USED IN NUCLEAR DECOMMISSIONING**
LEVEL	**3**
CREDIT VALUE	**3**
GUIDED LEARNING HOURS	**18**

Unit Overview

This unit addresses the knowledge required to carry out planned preventative maintenance procedures on equipment used in nuclear decommissioning.

Assessment Guidance and Evidence Requirements

The learner should provide evidence to meet all the required knowledge and understanding within this unit. This could be provided through different types of evidence and assessment methods, for example learner statements, questioning and professional discussion which should be recorded for verification.

- This unit is subject to the requirements set out in the Cogent Assessment Strategy.
- The assumption is made that the learner is a trained operative with training and practice in multi-skilled working, and maintenance schedule requirements.

Information on use of Assessment Context

This unit covers the knowledge required to implement specified procedures for maintaining engineering plant and equipment in accordance with relevant maintenance schedules, in the specified sequence and in an agreed time scale.

During this work the learner must take account of the relevant worksite operational requirements, procedures and safe working practices AS THEY APPLY TO THE LEARNER.

The following terms have a specific meaning in this unit:

Equipment used in nuclear decommissioning:
This covers any equipment used in the dismantling and decontamination of plant, structures and equipment within a nuclear facility. It covers hand and portable powered tools as well as larger items such as hoists and trolleys. It also covers ventilation equipment and robotics.

Maintenance activities:
These are as set down in the maintenance schedule. They include inspections of plant and Equipment, routine adjustments, such as adjusting hydraulic valves, adjusting breathing air panel, re-focusing of cameras, general housekeeping and cleaning to ensure that contamination is not spread, function testing, and fault and breakdown reporting. The person undertaking the work is responsible for carrying out the procedures as set down in the schedule. S/he is also responsible for ensuring that it is safe to carry out the work. This includes obtaining the authority to proceed, such as the appropriate safety clearance (e.g. Permit for Work) and confirming that the services to the item are isolated. Responsibility also extends to the application of best practice in the use of methods, tools and procedures and the achievement of specified quality standards. The person carrying out the work must immediately report any problems they encounter which mean that the activities cannot be completed as specified.

Records:
Maintenance records may be documentary or computer-based and the person carrying out the work is responsible for ensuring that they are completed accurately and fully. Records take a specified format and may involve the completion of checklists and the writing of short descriptions of actions carried out, additional maintenance needs identified and task timings.

Learning Outcome and Assessment Criteria

Learning outcomes The learner will:	Assessment criteria The learner can:
1. Know how to interpret the documentation	1.1. Explain how to access and use the maintenance records and documentation procedures 1.2. Describe the maintenance schedules and related specifications
2. Know how to carry out planned preventative maintenance	2.1. Explain the maintenance methods and procedures 2.2. Explain the equipment operating and care and control procedures
3. Know how to follow organisational procedures	3.1. Explain the reporting lines and procedures 3.2. Explain the Health and Safety legislation, regulations and safe working practices and procedures 3.3. Identify the limits of personal authorisation and ability

UNIT N413C	**CARRY OUT PLANNED PREVENTATIVE MAINTENANCE PROCEDURES ON EQUIPMENT USED IN NUCLEAR DECOMMISSIONING**
LEVEL	**3**
CREDIT VALUE	**3**
GUIDED LEARNING HOURS	**6**

Unit Overview

This unit addresses the skills required to carry out planned preventative maintenance procedures on equipment used in nuclear decommissioning.

Assessment Guidance and Evidence Requirements

Evidence Requirements

The learner must provide at least 3 different examples of performance evidence. Taken as a whole, the performance evidence must show that the learner has;

- Implemented maintenance activities under both operational and non-operational conditions
- Selected at least 2 different maintenance procedures as described in the Assessment Context.

Assessment Guidance

- The use of simulation is not acceptable in the assessment of this unit.
- Workplace performance evidence is mandatory.
- This unit is subject to the requirements set out in the Cogent Assessment Strategy.
- This unit should not be taken prior to taking N413k - *How to Carry out Planned Preventative Maintenance Procedures on Equipment Used in Nuclear Decommissioning*.
- The assumed pre-requisite is that the learner is a trained operative. This is a multi-skills task, so basic training in other core disciplines is required, also a sound knowledge of the requirements of a maintenance schedule are needed.
- Typical types of performance evidence would include procedures applied, resource selections and organisational records.

Information on use of Assessment Context

This unit covers the competence required to implement specified procedures for maintaining engineering plant and equipment in accordance with relevant maintenance schedules, in the specified sequence and in an agreed time scale.

During this work the learner must take account of the relevant worksite operational requirements, procedures and safe working practices AS THEY APPLY TO THE LEARNER.

The following terms have a specific meaning in this unit:

Equipment used in nuclear decommissioning:
This covers any equipment used in the dismantling and decontamination of plant, structures and equipment within a nuclear facility. It covers hand and portable powered tools as well as larger items such as hoists and trolleys. It also covers ventilation equipment and robotics.

Maintenance activities:
These are as set down in the maintenance schedule. They include inspections of plant and Equipment, routine adjustments, such as adjusting hydraulic valves, adjusting breathing air panel, re-focusing of cameras, general housekeeping and cleaning to ensure that contamination is not spread, function testing, and fault and breakdown reporting. The person undertaking the work is responsible for carrying out the procedures as set down in the schedule. S/he is also responsible for ensuring that it is safe to carry out the work. This includes obtaining the authority to proceed, such as the appropriate safety clearance (e.g. Permit for Work) and confirming that the services to the item are isolated. Responsibility also extends to the application of best practice in the use of methods, tools and procedures and the achievement of specified quality standards the person carrying out the work must immediately report any problems they encounter which mean that the activities cannot be completed as specified.

Records:
Maintenance records may be documentary or computer-based and the person carrying out the work is responsible for ensuring that they are completed accurately and fully. Records take a specified format and may involve the completion of checklists and the writing of short descriptions of actions carried out, additional maintenance needs identified and task timings.

Learning Outcome and Assessment Criteria

Learning outcomes **The learner will:**	**Assessment criteria** **The learner can:**
1. Be able to carry out planned preventative maintenance procedures safely	1.1. Follow the relevant maintenance schedules to carry out the required work 1.2. Carry out the planned maintenance activities within the limits of personal authority 1.3. Carry out the planned maintenance activities in the specified sequence and in an agreed time scale 1.4. Dispose of waste materials in accordance with safe working practices and approved procedures
2. Be able to deal with and report problems	2.1. Report any instances where the planned maintenance activities cannot be fully met or where there are identified defects outside the planned schedule
3. Be able to follow organisational procedures when assembling equipment	3.1. Complete relevant planned maintenance records accurately and pass them on to the appropriate person 3.2. Work safely at all times, complying with health and safety and other relevant regulations and guidelines

UNIT N414K	**HOW TO ADJUST EQUIPMENT USED IN NUCLEAR DECOMMISSIONING TO MEET OPERATIONAL REQUIREMENTS**
LEVEL	**2**
CREDIT VALUE	**3**
GUIDED LEARNING HOURS	**18**

Unit Overview

This unit addresses the knowledge required to adjust equipment used in nuclear decommissioning to meet operational requirements.

Assessment Guidance and Evidence Requirements

The learner should provide evidence to meet all the required knowledge and understanding within this unit. This could be provided through different types of evidence and assessment methods, for example learner statements, questioning and professional discussion which should be recorded for verification.

- This unit is subject to the requirements set out in the Cogent Assessment Strategy.
- The assumption is made that the learner is a trained operative, with extra knowledge and approvals to work and understand the maintenance schedule and the related specs. There are elements of multi-skilling in this unit.

Information on use of Assessment Context

This unit covers the knowledge required to implement maintenance procedures with responsibility limited to working within a detailed specification and following clearly defined procedures under both operational and non-operational conditions, in the specified sequence and in an agreed time scale.

During this work the learner must take account of the relevant worksite operational requirements, procedures and safe working practices AS THEY APPLY TO THE LEARNER.

The following terms have a specific meaning in this unit:

Equipment used in nuclear decommissioning:
This covers any equipment used in the dismantling and decontamination of plant, structures and equipment within a nuclear facility. It covers hand and portable powered tools as well as larger items such as hoists and trolleys. It also covers ventilation equipment and robotics and compressors.

Adjustments:
In the context of this Unit, adjustments would be of a routine nature, such as adjusting hydraulic valves, adjusting breathing air panel, re-focusing of cameras. In addition, adjustments which may be done under operational conditions might include ventilation and fluids flow, variable speeds, valve adjustments. Parts and consumables to be replenished might typically include filters, saw blades, grinding wheels, gloves, cutting nozzles, PVC tapes, poly bags. Adjustments are made in line with work instructions and the individual carrying out this function is authorised to make such adjustments as are needed to achieve the required specification without recourse to further authorisation. S/he is also responsible for ensuring that it is safe to carry out the work. This includes obtaining the authority to proceed, such as the appropriate safety clearance (e.g. Safe Systems of Work document) and confirming that the services to the item are isolated. Responsibility also extends to the application of best practice in the use of methods, tools and procedures and the achievement of specified quality standards, as detailed in manufacturer's operating and maintenance instructions.

Procedures:
The maintenance procedures to be followed are pre-defined, clearly specified and can be readily implemented. Typical general on-site maintenance procedures will be concerned principally with maintaining the working environment. Activities might include inspection of plant and equipment, function testing. Minor adjustments to plant and equipment, fault and breakdown reporting. Cleaning procedures will cover general housekeeping. Particular care must be taken to ensure that contamination is not spread. Simple adjustments would be of a routine nature, such as adjusting hydraulic valves, adjusting breathing air panel, re-focusing of cameras. Adjustments which may be done under operational conditions might include ventilation and fluids flow, variable speeds, valve adjustments.

Learning Outcome and Assessment Criteria

Learning outcomes **The learner will:**	**Assessment criteria** **The learner can:**
1. Know how to interpret the documentation when adjusting equipment	1.1. Explain how to access and use the maintenance records and documentation procedures 1.2. Describe the maintenance schedules and related specifications
2. Know how to carry out maintenance on equipment	2.1. Explain the maintenance methods and procedures 2.2. Explain the maintenance authorisation procedures 2.3. Explain the equipment operating and care and control procedures
3. Know how to follow organisational procedures when adjusting equipment used in nuclear decommissioning	3.1. Explain the reporting lines and procedures 3.2. Explain the Health and Safety legislation, regulations and safe working practices and procedures 3.3. Identify • the limits of your responsibility when adjusting equipment • the limits of your authority when adjusting equipment

UNIT N414C	ADJUST EQUIPMENT USED IN NUCLEAR DECOMMISSIONING TO MEET OPERATIONAL REQUIREMENTS
LEVEL	**2**
CREDIT VALUE	**2**
GUIDED LEARNING HOURS	**6**

Unit Overview

This unit addresses the skills required to adjust equipment used in nuclear decommissioning to meet operational requirements.

Assessment Guidance and Evidence Requirements

Evidence Requirements

The learner must provide at least 3 different examples of performance evidence. Taken as a whole, the performance evidence must cover;

- At least 2 different types of adjustments as specified in the Assessment Context.
- Deal with the adjustment of at least 2 assets with characteristics also specified in the Assessment Context and show confirmation that the adjustments operate correctly.

Assessment Guidance

- The use of simulation is not acceptable in the assessment of this unit.
- Workplace performance evidence is mandatory.
- This unit is subject to the requirements set out in the Cogent Assessment Strategy.
- This unit should not be taken prior to taking *N414k - How to Adjust Equipment used in Nuclear Decommissioning to meet Operational Requirements*.
- The assumed pre-requisite is that the learner is a trained operative, with an awareness of completing maintenance procedures on decommissioning equipment. The tasks are well-defined and routine with straightforward problems.

Information on use of Assessment Context

This unit covers the competence required to implement maintenance procedures with responsibility limited to working within a detailed specification and following clearly defined procedures under both operational and non-operational conditions, in the specified sequence and in an agreed time scale.

During this work the learner must take account of the relevant worksite operational requirements, procedures and safe working practices AS THEY APPLY TO THE LEARNER.

The following terms have a specific meaning in this unit:

Equipment used in nuclear decommissioning:
This covers any equipment used in the dismantling and decontamination of plant, structures and equipment within a nuclear facility. It covers hand and portable powered tools as well as larger items such as hoists and trolleys. It also covers ventilation equipment and robotics and compressors.

Adjustments:
In the context of this Unit, adjustments would be of a routine nature, such as adjusting hydraulic valves, adjusting breathing air panel, re-focusing of cameras. In addition, adjustments which may be done under operational conditions might include ventilation and fluids flow, variable speeds, valve adjustments. Parts and consumables to be replenished might typically include filters, saw blades, grinding wheels, gloves, cutting nozzles, PVC tapes, poly bags. Adjustments are made in line with work instructions and the individual carrying out this function is authorised to make such adjustments as are needed to achieve the required specification without recourse to further authorisation. S/he is also responsible for ensuring that it is safe to carry out the work. This includes obtaining the authority to proceed, such as the appropriate safety clearance (e.g. Safe Systems of Work document) and confirming that the services to the item are isolated. Responsibility also extends to the application of best practice in the use of methods, tools and procedures and the achievement of specified quality standards, as detailed in manufacturer's operating and maintenance instructions.

Procedures:
The maintenance procedures to be followed are pre-defined, clearly specified and can be readily implemented. Typical general on-site maintenance procedures will be concerned principally with maintaining the working environment. Activities might include inspection of plant and equipment, function testing. Minor adjustments to plant and equipment, fault and breakdown reporting. Cleaning procedures will cover general housekeeping. Particular care must be taken to ensure that contamination is not spread. Simple adjustments would be of a routine nature, such as adjusting hydraulic valves, adjusting breathing air panel, re-focusing of cameras. Adjustments which may be done under operational conditions might include ventilation and fluids flow, variable speeds, valve adjustments.

Learning Outcome and Assessment Criteria

Learning outcomes **The learner will:**	**Assessment criteria** **The learner can:**
1. Be able to make adjustments to equipment	1.1. Carry out adjustments within the limits of personal authority 1.2. Make the required adjustments in the specified sequence and in an agreed time scale 1.3. Confirm that the adjusted equipment meets the required operating specification
2. Be able to work to the appropriate specification	2.1. Follow the appropriate operating specifications for the equipment being maintained
3. Be able to identify and report any quality assurance problems	3.1. Report any instances where • the equipment fails to meet the required performance after adjustments • there are identified defects outside the required adjustments
4. Be able to follow organisational procedures when adjusting equipment used in nuclear decommissioning	4.1. Maintain documentation in accordance with organisational requirements 4.2. Work safely at all times, complying with health and safety and other relevant regulations and guidelines

UNIT N415K	HOW TO OPERATE REMOTE CONTROLLED EQUIPMENT FOR USE IN NUCLEAR DECOMMISSIONING
LEVEL	**3**
CREDIT VALUE	**4**
GUIDED LEARNING HOURS	**24**

Unit Overview

This unit addresses the knowledge required to operate remote controlled equipment for use in nuclear decommissioning.

Assessment Guidance and Evidence Requirements

The learner should provide evidence to meet all the required knowledge and understanding within this unit. This could be provided through different types of evidence and assessment methods, for example learner statements, questioning and professional discussion which should be recorded for verification.

- This unit is subject to the requirements set out in the Cogent Assessment Strategy.
- The assumption is made that the learner is a trained operative with an awareness of operating remote controlled vehicles and power manipulators. The work involves dexterity and an awareness of the surroundings.

Information on use of Assessment Context

This unit covers the knowledge required to operate remote controlled nuclear decommissioning equipment with responsibility limited to working within a detailed specification and following clearly defined procedures under both operational and non-operational conditions, in the specified sequence and in an agreed time scale.

During this work the learner must take account of the relevant worksite operational requirements, procedures and safe working practices AS THEY APPLY TO THE LEARNER.

The following terms have a specific meaning in this unit:

Remote controlled equipment:
Equipment used to carry out nuclear decommissioning activities in situations where health and safety requirements mean that an operator must remain at a safe distance from the items being dismantled and/or decontaminated. Remote equipment includes; tongs, master slave manipulators manual or powered, remote controlled operating vehicle, power manipulators, remote monitoring equipment and CCTV units

Operations:
Actions carried out on plant, structures and equipment in the context of nuclear decommissioning. These cover dismantling and decontamination.

Relevant People:
The relevant people would be the area supervisor or line supervisor.

Learning Outcome and Assessment Criteria

Learning outcomes The learner will:	Assessment criteria The learner can:
1. Know how to operate remote controlled equipment used in nuclear decommissioning	1.1. Explain equipment operating and control procedures and techniques 1.2. Explain the safety mechanisms on remote controlled equipment 1.3. Describe how he/she would interpret feedback on operations from telemetry
2. Know how to identify and deal with problems	2.1. Explain how to recover malfunctioning remote equipment 2.2. Explain how to recognise and identify recurring faults
3. Know how to report and document the operation	3.1. Describe reporting procedures and documentation

UNIT N415C	**OPERATE REMOTE CONTROLLED EQUIPMENT FOR USE IN NUCLEAR DECOMMISSIONING**
LEVEL	**3**
CREDIT VALUE	**4**
GUIDED LEARNING HOURS	**8**

Unit Overview

This unit addresses the skills required to operate remote controlled equipment for use in nuclear decommissioning.

Assessment Guidance and Evidence Requirements

Evidence Requirements

The learner must provide at least 3 different examples of performance evidence. Taken as a whole, the performance evidence must cover;

- At least 2 different types of remote controlled equipment as specified in the Assessment Context.
- At least 2 different types of operation as specified in the Assessment Context.

Assessment Guidance

- The use of simulation is not acceptable in the assessment of this unit.
- Workplace performance evidence is mandatory.
- This unit is subject to the requirements set out in the Cogent Assessment Strategy.
- This unit should not be taken prior to taking *N415k – How to Operate remote controlled equipment for use in Nuclear Decommissioning*.
- The assumed pre-requisite is that the learner is a trained operative with an awareness of operating remote controlled vehicles and power manipulators. The work involves dexterity and an awareness of the surroundings.
- Observation and examination of outcomes and records will probably provide the most effective methods of assessment.

Information on use of Assessment Context

This unit covers the competence required to operate remote controlled nuclear decommissioning equipment with responsibility limited to working within a detailed specification and following clearly defined procedures under both operational and non-operational conditions, in the specified sequence and in an agreed time scale.

During this work the learner must take account of the relevant worksite operational requirements, procedures and safe working practices AS THEY APPLY TO THE LEARNER.

The following terms have a specific meaning in this unit:

Remote controlled equipment:
Equipment used to carry out nuclear decommissioning activities in situations where health and safety requirements mean that an operator must remain at a safe distance from the items being dismantled and/or decontaminated. Remote equipment includes; tongs, master slave manipulators manual or powered, remote controlled operating vehicle, power manipulators, remote monitoring equipment and CCTV units

Operations:
Actions carried out on plant, structures and equipment in the context of nuclear decommissioning. These cover dismantling and decontamination.

Relevant People:
The relevant people would be the area supervisor or line supervisor.

Learning Outcome and Assessment Criteria

Learning outcomes **The learner will:**	**Assessment criteria** **The learner can:**
1. Be able to prepare to operate remote controlled equipment for use in nuclear decommissioning	1.1. Correctly set up the equipment for the operation to be carried out 1.2. Check that all safety mechanisms are in place
2. Be able to operate remote controlled equipment used in nuclear decommissioning	2.1. Check and ensure that the equipment stays within safe operating limits throughout 2.2. Follow the correct operating procedures and sequence of actions 2.3. Monitor and evaluate incoming telemetry on the progress of remote operations 2.4. Operate the remote equipment correctly
3. Be able to deal with and report any problems encountered during the process	3.1. Deal with equipment malfunction during use in accordance with instructions 3.2. Report and resolve difficulties encountered with the relevant people
4. Be able to comply with specified guidelines and procedures while operating remote controlled equipment used in nuclear decommissioning	4.1. Work safely at all times, complying with health and safety and other relevant regulations and guidelines 4.2. Carry out and record the results of the specified post-op checks

UNIT N416K	**HOW TO MONITOR OPERATIONAL RADIOLOGICAL CONDITIONS WITHIN A NUCLEAR DECOMMISSIONING ENVIRONMENT**
LEVEL	**2**
CREDIT VALUE	**2**
GUIDED LEARNING HOURS	**12**

Unit Overview

This unit addresses the knowledge required to monitor operational radiological conditions within nuclear environments.

Assessment Guidance and Evidence Requirements

The learner should provide evidence to meet all the required knowledge and understanding within this unit. This could be provided through different types of evidence and assessment methods, for example learner statements, questioning and professional discussion which should be recorded for verification.

- This unit is subject to the requirements set out in the Cogent Assessment Strategy.
- The assumption is made that the learner is a trained operative with health physics awareness and practice, for all types of radiation and contamination areas.

Information on use of Assessment Context

This unit covers the knowledge required to monitor the operational radiological conditions existing in a supervised or controlled area and ensuring that the correct radiological conditions are established at all times in accordance with instructions provided.

During this work the learner must take account of the relevant worksite operational requirements, procedures and safe working practices AS THEY APPLY TO THE LEARNER.

The following terms have a specific meaning in this unit:

Monitoring instruments and equipment:
The types of monitoring instruments and equipment covered by this Unit include radiation monitors and contamination monitors.

Areas:
The competence covered by this Unit applies to working within a radiation/contamination controlled environment as defined in the ionising radiations regulations (IRR's) and which may be designated as supervised, controlled or restricted access.

Monitored activity:
Monitored activities include the dismantling of plant and equipment, the packaging and movement of radioactive material, the construction of structures (i.e. containments, platforms and scaffolds) and decontamination.

Appropriate action:
The actions that someone undertaking this role would be expected to undertake would cover advising colleagues of a situation, continuing work as planned, the shielding of radiation, ensuring containing of contamination, and seeking specialist advice.

Relevant People:
The people from whom a person carrying out this role would seek advice and assistance would be the area supervisor, line supervisor or radiation protection specialists according to the nature of the information needed. Radiation Protection Specialists might include Radiation Protection Advisers (RPAs), Radiation Protection Supervisors (RPSs), and Health Physics staff.

Learning Outcome and Assessment Criteria

Learning outcomes The learner will:	Assessment criteria The learner can:
1. Know how to operate equipment and apply control procedures	1.1. Explain equipment operating and care and control procedures 1.2. Define dose measuring equipment/personal dose control
2. Know how to identify the features which need to be established	2.1. Explain the key features of radiological conditions which need to be established 2.2. Explain how to identify any additional monitoring requirements, and to whom they should be reported
3. Know how to act upon findings from monitoring operational radiological conditions	3.1. Describe the key factors to be taken into account in assessing monitoring data, and typical actions which may result from this 3.2. Describe the identification, labelling and packaging requirements for substances for further analysis and to whom they should be passed
4. Know how to deal with problems and comply with the relevant procedures	4.1. Explain the signs of equipment malfunction and how to deal with them 4.2. Describe reporting procedures and documentation 4.3. Explain how to identify and access sources of specialist advice
5. Know how to identify factors that need to be considered when dealing with radiological conditions	5.1. Explain the principles of working area demarcation and control 5.2. Explain the principles of risk minimisation 5.3. Describe decontamination techniques

UNIT N416C	**MONITOR OPERATIONAL RADIOLOGICAL CONDITIONS WITHIN A NUCLEAR DECOMMISSIONING ENVIRONMENT**
LEVEL	**2**
CREDIT VALUE	**2**
GUIDED LEARNING HOURS	**6**

Unit Overview

This unit addresses the skills required to monitor operational radiological conditions within nuclear environments.

Assessment Guidance and Evidence Requirements

Evidence Requirements

The learner must provide at least 3 different pieces of performance evidence. Taken as a whole, the learner must provide performance evidence which shows that s/he has dealt with;

- At least 1 example of each of the Assessment Context: monitoring instruments and equipment; areas; monitored activity; appropriate action and relevant people

Assessment Guidance

- The use of simulation is not acceptable in the assessment of this unit.
- Workplace performance evidence is mandatory.
- This unit is subject to the requirements set out in the Cogent Assessment Strategy.
- This unit should not be taken prior to taking N416k – *How to Monitor Operational Radiological Conditions within a Nuclear Decommissioning Environment*.
- The assumed pre-requisite is that the learner is a trained operative with health physics awareness and practice, for all types of radiation and contamination areas.
- Examination of outcomes and records will probably provide the most effective methods of assessment, as will reliable witness testimony.

Information on use of Assessment Context

This unit covers the competence required to monitor the operational radiological conditions existing in a supervised or controlled area and ensuring that the correct radiological conditions are established at all times in accordance with instructions provided.

During this work the learner must take account of the relevant worksite operational requirements, procedures and safe working practices AS THEY APPLY TO THE LEARNER.

The following terms have a specific meaning in this unit:

Monitoring instruments and equipment:
The types of monitoring instruments and equipment covered by this Unit include radiation monitors and contamination monitors.

Areas:
The competence covered by this Unit applies to working within a radiation/contamination controlled environment as defined in the ionising radiations regulations (IRR's) and which may be designated as supervised, controlled or restricted access.

Monitored activity:
Monitored activities include the dismantling of plant and equipment, the packaging and movement of radioactive material, the construction of structures (i.e. containments, platforms and scaffolds) and decontamination.

Appropriate action:
The actions that someone undertaking this role would be expected to undertake would cover advising colleagues of a situation, continuing work as planned, the shielding of radiation, ensuring containing of contamination, and seeking specialist advice.

Relevant People:
The people from whom a person carrying out this role would seek advice and assistance would be the area supervisor, line supervisor or radiation protection specialists according to the nature of the information needed. Radiation Protection Specialists might include Radiation Protection Advisers (RPAs), Radiation Protection Supervisors (RPSs), and Health Physics staff.

Learning Outcome and Assessment Criteria

Learning outcomes **The learner will:**	**Assessment criteria** **The learner can:**
1. Be able to follow procedures for monitoring operational radiological conditions	1.1. Use instruments and equipment appropriate to the monitored activity and area in accordance with laid down procedures 1.2. Establish radiological conditions in accordance with instructions 1.3. Seek appropriate specialist advice where own technical limitations are reached
2. Be able to work effectively with others relevant to the process	2.1. Identify and report any additional monitoring requirements to the relevant people 2.2. Promptly pack, label and pass substances for further analysis to the relevant people 2.3. Report monitoring results to the relevant people in a timely manner
3. Be able to deal with problems and maintain a safe working environment	3.1. Work safely at all times, complying with health and safety and other regulations and guidelines 3.2. Deal with equipment malfunction during use in accordance with instructions 3.3. Obtain an accurate assessment of monitoring data and take appropriate action to maintain safe conditions

UNIT N417K	**HOW TO CHECK RADIOLOGICAL MONITORING INSTRUMENTS AND EQUIPMENT ARE IN GOOD ORDER WITHIN A NUCLEAR DECOMMISSIONING ENVIRONMENT**
LEVEL	**2**
CREDIT VALUE	**2**
GUIDED LEARNING HOURS	**12**

Unit Overview

This unit addresses the knowledge required to check radiological monitoring instruments and equipment are in good order within nuclear environments.

Assessment Guidance and Evidence Requirements

The learner should provide evidence to meet all the required knowledge and understanding within this unit. This could be provided through different types of evidence and assessment methods, for example learner statements, questioning and professional discussion which should be recorded for verification.

- This unit is subject to the requirements set out in the Cogent Assessment Strategy.
- The assumption is made that the learner is a trained operative. This is one of the rare times that sources are used and the learner requires controls for safety and legislation. The knowledge input covers the function testing of the equipment and the control of these sources. The tasks are well-defined and the problems are straightforward.

Information on use of Assessment Context

This unit covers the knowledge required in maintaining the condition of radiological instruments. Learners must show a clear understanding of the requirements for storage, issue, inspection, function testing, maintenance and records.

During this work the learner must take account of the relevant worksite operational requirements, procedures and safe working practices AS THEY APPLY TO THE LEARNER

The following terms have a specific meaning in this unit:

Monitoring instruments and equipment:
The types of monitoring instruments and equipment covered by this Unit include radiation monitors and contamination monitors. Sources and their safe storage, issue and handling are also covered.

Relevant People:
The people from whom a person carrying out this role would seek advice and assistance would be the area supervisor, line supervisor or radiation protection specialists according to the nature of the information needed.

Learning Outcome and Assessment Criteria

Learning outcomes The learner will:	Assessment criteria The learner can:
1. Know how to deal with defective instruments	1.1. Explain the labelling requirements for non-functioning, damaged and worn instruments
2. Know the principles and techniques that are used when checking radiological monitoring instruments and equipment	2.1. Explain the radiation and contamination principles 2.2. Describe the decontamination techniques 2.3. Explain the principles of working area demarcation and control 2.4. Explain the principles of function testing of monitoring instruments and equipment 2.5. Describe the equipment operating and care and control procedures
3. Know how to work safely when checking radiological monitoring instruments and equipment	3.1. Identify the key factors to consider when handling sources safely and returning to safe storage 3.2. Explain the principles of risk minimisation 3.3. Identify the key points to consider in determining whether the radiological status of instruments is safe before return to storage 3.4. Explain the purpose of the dose measuring equipment/personal dose control
4. Know how to follow organisational procedures	4.1. Describe the reporting procedures and documentation 4.2. Explain how to identify and access sources of specialist advice

UNIT N417C	**CHECK RADIOLOGICAL MONITORING INSTRUMENTS AND EQUIPMENT ARE IN GOOD ORDER WITHIN A NUCLEAR DECOMMISSIONING ENVIRONMENT**
LEVEL	**2**
CREDIT VALUE	**2**
GUIDED LEARNING HOURS	**6**

Unit Overview

This unit addresses the skills required to check radiological monitoring instruments and equipment are in good order within nuclear environments.

Assessment Guidance and Evidence Requirements

Evidence Requirements

Learners must provide at least 3 different pieces of performance evidence. Taken as a whole, the learner must provide performance evidence which shows that s/he has dealt with;

- At least 2 different pieces of monitoring equipment or instruments.
- At least 1 example of storage, issue and handling of sources as described in the Assessment Context.

Assessment Guidance

- The use of simulation is not acceptable in the assessment of this unit.
- Workplace performance evidence is mandatory.
- This unit is subject to the requirements set out in the Cogent Assessment Strategy.
- This unit should not be taken prior to taking N417k - *How to Check Radiological Monitoring Instruments and Equipment are in Good Order within a Nuclear Decommissioning Environment*.
- The assumed pre-requisite is that the learner is a trained operative with skills in calibrating and checking radiological instruments. In addition, the learner will be authorised to handle and control radiological sources. The tasks are well-defined and the problems are straightforward.
- Where practicable, performance evidence should include direct observation of the learner's work activities.
- Examination of outcomes and records will probably provide the most effective methods of assessment, as will reliable witness testimony. Radiation Protection Specialists might include Radiation Protection Advisers (RPAs), Radiation Protection Supervisors (RPSs), and Health Physics staff.

Information on use of Assessment Context

This unit covers the competence required in maintaining the condition of radiological instruments. Learners must show a clear understanding of the requirements for storage, issue, inspection, function testing, maintenance and records.

During this work the learner must take account of the relevant worksite operational requirements, procedures and safe working practices AS THEY APPLY TO THE LEARNER.

The following terms have a specific meaning in this unit:

Monitoring instruments and equipment:
The types of monitoring instruments and equipment covered by this Unit include radiation monitors and contamination monitors. Sources and their safe storage, issue and handling are also covered.

Relevant People:
The people from whom a person carrying out this role would seek advice and assistance would be the area supervisor, line supervisor or radiation protection specialists according to the nature of the information needed.

Learning Outcome and Assessment Criteria

Learning outcomes **The learner will:**	**Assessment criteria** **The learner can:**
1. Be able to maintain the condition of radiological instruments and equipment	1.1. Obtain and check instruments and equipment appropriate to the monitored activity and area in accordance with laid down procedures 1.2. Clearly label non-functioning, damaged and worn instruments and pass them to the relevant people for action
2. Be able to work safely, according to procedures	2.1. Handle sources safely and return to safe storage in accordance with instructions 2.2. Establish that the radiological status of instruments and equipment is safe before returning them to storage
3. Be able to follow organisational procedures when assembling equipment	3.1. Complete documentation legibly and correctly 3.2. Seek appropriate specialist advice from relevant people where your own technical limitations are reached 3.3. Work safely at all times, complying with health and safety and other relevant regulations and guidelines

UNIT N418K	**HOW TO PREPARE AND MOVE LOADS IN NUCLEAR INSTALLATIONS WITHIN A NUCLEAR DECOMMISSIONING ENVIRONMENT**
LEVEL	**2**
CREDIT VALUE	**3**
GUIDED LEARNING HOURS	**20**

Unit Overview

This unit addresses the knowledge required to prepare and move loads in nuclear installations.

Assessment Guidance and Evidence Requirements

The learner should provide evidence to meet all the required knowledge and understanding within this unit. This could be provided through different types of evidence and assessment methods, for example learner statements, questioning and professional discussion which should be recorded for verification.

- This unit is subject to the requirements set out in the Cogent Assessment Strategy.
- The assumption is made that the learner is a trained operative with an appreciation of lifting & handling, rigging & slinging, driving fork lift trucks and operating hoists/cranes. The tasks are usually well-defined but there are some complex problems to cope with.

Information on use of Assessment Context

This unit deals with the following:

- Prepare loads for moving – this covers the knowledge required to prepare loads for moving. The learner will be expected to know how to establish the weight of the load to be moved and the most appropriate method to be employed, including selection of suitable equipment to move the load
- Move loads – this covers the knowledge required to move loads and includes the assessment of loads and the selection of methods and equipment to be used for the move, which is then completed according to specified requirements

During this work the learner must take account of the relevant worksite operational requirements, procedures and safe working practices AS THEY APPLY TO THE LEARNER.

The following terms have a specific meaning in this unit:

Load:
The loads covered by this Unit are the equipment, materials and wastes generated through the decontamination and dismantling activities associated with the de-commissioning of a nuclear energy facility. The loads typically have an even weight distribution and/or have simple to access lifting points. They are of a robust nature which is not easily damaged or disrupted by the actions of moving the load. Typical loads could include drums, boxed materials, bagged waste, ISO containers and skips. Loads are moved to secure locations within the facility.

Moving method:
Movement is carried out using both manually controlled and automated equipment. In addition, for small loads, movement may involve the use of safe manual handling techniques in compliance with regulations and requirements as to weight restrictions. The individual carrying out this work is responsible for ensuring that the load is moved safely and securely to the correct final destination.

Moving equipment:
Equipment associated with safe manual handling techniques would include pallet trucks, wire rope pullers and chain blocks. Equipment associated with manually operated techniques would include trolleys, winches and hoists, slings, ropes and wire ropes. Equipment associated with automated techniques would include hydraulic lifting gear and hoists.

Learning Outcome and Assessment Criteria

Learning outcomes The learner will:	Assessment criteria The learner can:
1. Know how to prepare to move loads	1.1. Describe the lifting, moving and handling equipment methods and techniques 1.2. Explain how to estimate the weight of loads 1.3. Describe slinging and lifting methods and techniques 1.4. Describe load safety assessment methods and techniques 1.5. Describe route planning methods and techniques
2. Know how to move loads in nuclear installations	2.1. Explain the methods and techniques of moving loads 2.2. List the lifting, moving and handling equipment used when moving loads
3. Know how to deal with equipment used when moving loads in nuclear installations	3.1. Describe lifting equipment care and control procedures 3.2. Describe handling equipment operating and care control procedures
4. Know how to comply with requirements, regulations and procedures regarding moving loads in nuclear installations	4.1. Describe the health and safety legislation, regulations and safe working practices and procedures 4.2. Explain how manual handling assessments are undertaken 4.3. Describe the reporting lines and procedures

UNIT N418C	**PREPARE AND MOVE LOADS IN NUCLEAR INSTALLATIONS WITHIN A NUCLEAR DECOMMISSIONING ENVIRONMENT**
LEVEL	**2**
CREDIT VALUE	**3**
GUIDED LEARNING HOURS	**4**

Unit Overview

This unit addresses the skills required to prepare and move loads in nuclear installations.

Assessment Guidance and Evidence Requirements

Evidence Requirements

The learner must provide at least 3 different examples of performance evidence. Taken as a whole, the performance evidence must cover;

- At least 2 types of moving method
- Dealing with at least 1 type of moving equipment as described in the Assessment Context
- Dealing with engineering loads covering at least 2 of the load characteristics specified in the Assessment Context

Assessment Guidance

- The use of simulation is not acceptable in the assessment of this unit.
- Workplace performance evidence is mandatory.
- This unit is subject to the requirements set out in the Cogent Assessment Strategy.
- This unit should not be taken prior to taking N418k – *How to Prepare and Move Loads in Nuclear Installations within a Nuclear Decommissioning Environment*.
- The assumed pre-requisite is that the learner is a trained operative with an appreciation of different lifting and handling techniques. The tasks are well-defined and the problems are straightforward.
- Observation and examination of outcomes and records will probably provide the most effective methods of assessment.
- Assessment will need to establish that the learner is aware that particular care needs to be taken to ensure that appropriate certification is obtained for movement of radioactive material. In some situations the use of fork lift trucks, battery electric vehicles (BEV's) and cranes might be required for moving loads, of which separate certification of competence would be needed under licensing requirements.

Information on use of Assessment Context

This unit deals with the following:

- Prepare loads for moving – this covers the competence required to prepare loads for moving. The learner will be expected to establish the weight of the load to be moved and the most appropriate method to be employed, including selection of suitable equipment to move the load
- Move loads – this covers the competence required to move loads and includes the assessment of loads and the selection of methods and equipment to be used for the move, which is then completed according to specified requirements

During this work the learner must take account of the relevant worksite operational requirements, procedures and safe working practices AS THEY APPLY TO THE LEARNER.

The following terms have a specific meaning in this unit:

Load:
The loads covered by this Unit are the equipment, materials and wastes generated through the decontamination and dismantling activities associated with the de-commissioning of a nuclear energy facility. The loads typically have an even weight distribution and/or have simple to access lifting points. They are of a robust nature which is not easily damaged or disrupted by the actions of moving the load. Typical loads could include drums, boxed materials, bagged waste, ISO containers and skips. Loads are moved to secure locations within the facility.

Moving method:
Movement is carried out using both manually controlled and automated equipment. In addition, for small loads, movement may involve the use of safe manual handling techniques in compliance with regulations and requirements as to weight restrictions. The individual carrying out this work is responsible for ensuring that the load is moved safely and securely to the correct final destination.

Moving equipment:
Equipment associated with safe manual handling techniques would include pallet trucks, wire rope pullers and chain blocks. Equipment associated with manually operated techniques would include trolleys, winches and hoists, slings, ropes and wire ropes. Equipment associated with automated techniques would include hydraulic lifting gear and hoists.

Learning Outcome and Assessment Criteria

Learning outcomes **The learner will:**	**Assessment criteria** **The learner can:**
1. Be able to prepare loads for moving	1.1. Establish the weight of the load to be moved 1.2. Determine the method and select suitable equipment to move the load 1.3. Check that the moving equipment to be used is capable of moving the load safely 1.4. Determine a suitable route for moving the load, minimising risk to people and property 1.5. Ensure that the load is secured and protected before moving operations start
2. Be able to move loads in nuclear installations	2.1. Position the moving equipment so that the weight of the load is distributed evenly 2.2. Attach the appropriate handling equipment securely to the load, using approved methods to eliminate slippage 2.3. Confirm that the load is secure before moving 2.4. Move the load along the selected, suitable route 2.5. Position and release the load safely in its intended final location
3. Be able to follow procedures when preparing and moving loads in nuclear installations	3.1. Work safely at all times, complying with health and safety and other relevant regulations and guidelines 3.2. Deal promptly and effectively with problems within your control and report those that cannot be solved

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