

Level 3 Diploma in Gas Network Construction Operations (6028)

October 2014 Version 2.0



Qualification at a glance

Subject area	Construction
City & Guilds number	6028-31/93
Age group approved	16-18, 19+
Entry requirements	Level 3
Assessment	Portfolio
Fast track	Available
Support materials	Qualification handbook, Candidate log book
Registration and certification	Consult the Walled Garden/Online Catalogue for last dates

Title and level	City & Guilds number	Accreditation number
Level 3 Diploma in Gas Network Construction Operations	6028-31/93	601/2739/9



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1 Introduction

This document tells you what you need to do to deliver the qualification:

Area	Description
Who is the qualification for?	<p>This qualification is appropriate for individuals involved in a range of complex job roles supporting the operation of the gas transmission and distribution network.</p> <p>Job roles undertaken will include:</p> <p>Network Service and Maintenance Engineers, Gas Mainlayer/Servicelayer, Self Lay/Distribution/ Repair and Maintenance Operatives, Craftsperson, Technicians, Network Technicians and Senior Network Technicians.</p>
What does the qualification cover?	<p>This qualification will allow learners to develop and demonstrate their skills in operational planning, analysing information and budget control. It also covers technical skills required for the industry such as decommissioning and abandonment of mains of 63mm and above, commissioning gas networks and locating and avoiding supply apparatus and sub-structures.</p>
Is the qualification part of a framework or initiative?	<p>This qualification is part of the Advanced Level Apprenticeship in Network Construction Operations (Gas) for England, Wales and Northern Ireland.</p>
Who did we develop the qualification with?	<p>Energy and Utility Skills SSC</p>
What opportunities for progression are there?	<p>On completion of the qualification, learners could move into technical support, training and management roles within the industry.</p>

Structure

To achieve the Level 3 Diploma in Gas Network Construction Operations learners must achieve 73 credits from the mandatory units.

Unit accreditation number	City & Guilds unit number	Unit title	Credit value	Unit Level
Mandatory				
M/506/0696	Unit 312	Agree a course of action to deal with gas network construction related issues	4	3
Y/502/9703	Unit 313	Obtain information for decision making for network construction operations	3	3
D/502/9704	Unit 314	Record and store information for network construction operations	4	3
H/502/9705	Unit 315	Analyse information to support decision making for network construction operations	4	3
T/506/0702	Unit 316	Commission gas networks	3	3
H/506/0789	Unit 307	Decommissioning and abandonment of mains and services 63mm and above	7	3
K/502/9706	Unit 317	Advise and inform others about network construction operations	4	3
Y/506/0711	Unit 318	Inform customers about gas network construction related issues	3	3
M/502/9707	Unit 319	Contribute to controlling costs against agreed budgets	3	3
J/506/0722	Unit 320	Control gas network activities against quality standards and systems	3	3
A/502/9709	Unit 321	Establish and maintain professional relationships in	3	3

network construction
operations

F/506/0735	Unit 322	Carry out operational planning for gas network construction operations	3	3
A/502/9693	Unit 323	Ensure your own actions reduce risks to health and safety during network construction operations	6	3
H/506/0727	Unit 324	Protect the environment during gas network construction activities	3	3
J/502/9695	Unit 325	Locate and avoid supply apparatus and sub-structures	3	3
L/502/9696	Unit 326	Monitoring signing, lighting and guarding	4	3
D/502/9699	Unit 327	Monitor the installation and construction process for network construction operations	4	3
H/506/0713	Unit 328	Carry out risk assessments for gas network construction operations	2	3
H/504/7668	Unit 329	Develop productive working relationships with colleagues in the energy and utilities sector	7	3
Elective				
L/506/4755	Unit 308	Install gas engineering products or assets above 355mm	9	3
R/506/4756	Unit 309	Install gas engineering products or assets above 180mm up to and including 355mm	7	3

Y/506/4757	Unit 310	Operate within the gas intermediate pressure range	3	3
D/506/4758	Unit 311	Operate safely in emergency situations within the gas intermediate pressure range	2	3
R/502/9697	Unit 330	Monitor excavation in the highway	5	3
L/502/9701	Unit 331	Transfer control of networks	3	3
D/506/7563	Unit 332	Supervise safe operations in emergency situations within the gas intermediate pressure range	2	4
H/506/7564	Unit 333	Supervise safe operations within the gas intermediate pressure range	2	4
Y/503/9373	Unit 334	Understand how to manage contracts and contractors in the workplace	2	3



2 Centre requirements

Approval

If your Centre is approved to offer the Level 2 Diploma in Network Construction Operations (Gas) - Main layer (6028-21) and/or the Level 2 Diploma in Network Construction Operations (Gas) - Service layer (6028-22) you can apply for approval for the new Level 3 Diploma in Gas Network Construction Operations using the **fast track approval form**, available from the City & Guilds website.

Centres should use the fast track form if:

- there have been no changes to the way the qualifications are delivered, and
- they meet all of the approval criteria in the fast track form guidance notes.

Fast track approval is available for 12 months from the launch of the qualification. After 12 months, the Centre will have to go through the standard Qualification Approval Process. The centre is responsible for checking that fast track approval is still current at the time of application.

To offer this qualification, new centres will need to gain both centre and qualification approval. Please refer to the *Centre Manual - Supporting Customer Excellence* for further information.

Centre staff should familiarise themselves with the structure, content and assessment requirements of the qualification before designing a course programme.

Resource requirements

Realistic Work Environment (RWE)

All units can be assessed using observation in RWE, however a mixture of evidence from RWE and the workplace must be supplied for achievement of the units.

Where the network is being simulated, the pipework must be pressurised to a level consistent with the workplace and contain a suitable substance which replicates that which is contained in the workplace network.

Assessor/Verifier Requirements

The necessary requirements for Assessors (A); Internal Verifiers (IV); External Verifiers (EV) and Internal Assessors (IA) as specified in the *Energy & Utility Skills Overarching Assessment Strategy* are listed in the table below.

Staff delivering this qualification must be able to demonstrate that they meet the following occupational expertise requirements.

Centre staff may undertake more than one role, eg tutor and assessor or internal quality assurer, but cannot internally verify their own assessments.

	A	IV	EV	IA
Demonstrate a high level of interpersonal and communication skills	X	X	X	
Have up-to-date knowledge of current practice and emerging issues within their industry and be aware there may be differences between the 4 UK countries	X	X	X	
Have a thorough understanding of the national occupational standards for the qualifications they are assessing or verifying and be able to interpret them and offer advice on assessment-related matters	X	X	X	
Show experience and working knowledge of the assessment and verification processes relating to the context in which they are working	X	X	X	
Demonstrate relevant, current and credible experience and knowledge with a requirement for evidence of CPD and occupational skills	X	X	X	X
Show they are able to act as an emissary of City & Guilds and will be able to facilitate consistency across centres			X	
Have, or be working towards <ul style="list-style-type: none"> Being qualified –Assessor or Verifier units plus CPD and operate to A and V standards (A or V units/D units) Qualifications/Training that has been mapped to A and V units 	X	X	X	
Demonstrate a commitment to continuing professional development and to keeping abreast of the changing environment and practices in their industry.	X	X	X	X

Specific Assessor requirements

Assessors who are assessing the units within this qualification which are specific to gas network construction qualifications, must have experience in network construction in the gas sector.

Assessors and Internal Quality Assurer

Centre staff should hold, or be working towards, the relevant Assessor/Internal Quality Assurer TAQA qualification for their role in delivering, assessing and verifying this qualification, or meet the relevant experience requirements outlined above.

Continuing professional development (CPD)

Centres must support their staff to ensure that they have current knowledge of the occupational area, that delivery, mentoring, training, assessment and verification is in line with best practice, and that it takes account of any national or legislative developments.

Learner entry requirements

City & Guilds does not set entry requirements for this qualification. However, centres must ensure that learners have the potential and opportunity to gain the qualification successfully.

Learners undertaking this qualification must have sufficient technical knowledge to understand the operations they are supervising, either through holding the relevant Level 2 qualifications or through carrying out those roles.

All learners entering on the Level 3 Diploma in Network Construction Operations (Gas) must be network operatives employed on the gas distribution networks, either directly with an asset owner or through an outsourced operations company.

Age restrictions

City & Guilds cannot accept any registrations for learners under 16 as this qualification is not approved for under 16s.



3 Delivering the qualification

Initial assessment and induction

An initial assessment of each learner should be made before the start of their programme to identify:

- if the learner has any specific training needs,
- support and guidance they may need when working towards their qualification.
- any units they have already completed, or credit they have accumulated which is relevant to the qualification.
- the appropriate type and level of qualification.

We recommend that centres provide an induction programme so the learner fully understands the requirements of the qualification, their responsibilities as a learner, and the responsibilities of the centre. This information can be recorded on a learning contract.

Support materials

The following resources are available for this [these] qualification[s]:

Description	How to access
Candidate Logbook	Go to the www.cityandguilds.com and navigate to the 6028 web page. Passwords available on the Walled Garden.

Recording documents

Candidates and centres may decide to use a paper-based or electronic method of recording evidence.

City & Guilds endorses several ePortfolio systems, including our own, **Learning Assistant**, an easy-to-use and secure online tool to support and evidence learners' progress towards achieving qualifications. Further details are available at: **www.cityandguilds.com/eportfolios**.

City & Guilds has developed a set of *Recording forms* including examples of completed forms, for new and existing centres to use as appropriate. *Recording forms* are available on the City & Guilds website.

Although new centres are expected to use these forms, centres may devise or customise alternative forms, which must be approved for use by the qualification consultant, before they are used by candidates and

assessors at the centre. Amendable (MS Word) versions of the forms are available on the City & Guilds website.



4 Assessment

Assessment strategy

The knowledge and understanding of learners is assessed using a range of assessment strategies including:

- inferred knowledge assessed as part of a performance assessment
- project work
- oral questioning by the assessor
- assignments.

The performance skills of learners will be assessed primarily in the work place, with performance tasks undertaken in simulated work environments where a lack of opportunity exists or safety conditions cannot be met.

Workplace observation

This qualification contains a number of units and both workplace experience and naturally occurring evidence are required for each. A combination of direct observation by an assessor, witness testimony from operationally competent persons and evidence gathered in realistic work environment (RWE) is acceptable to establish that the learner meets all the criteria within the units. However, the following essential activities must be directly assessed at least once through workplace observation by an assessor:

- Installation of at least one section of gas service or main (for each pipe size category forming part of the qualification) to a valve or capped point, with a standard connection to the network.
- The testing and purging of a section of a gas service or main.
- Managing one gas network operation to include resources and manpower planning, operational instructions and leadership

Assignments

The following units are assessed by assignments covering knowledge, understanding and practical skills:

Unit 310	Operate within the gas intermediate pressure range
Unit 311	Operate safely in emergency situations within the gas intermediate pressure range
Unit 332	Supervise safe operations in emergency situations within the gas intermediate pressure range
Unit 333	Supervise safe operations within the gas intermediate pressure range

New Roads and Streetworks Act (NRSWA) Observations

NRSWA observations can be used as evidence to contribute towards achievement of these units, however additional evidence from the workplace is required.

Recognition of prior learning (RPL)

Recognition of prior learning means using a person's previous experience or qualifications which have already been achieved to contribute to a new qualification.

RPL is allowed and is also sector specific.



5 Units

Structure of units

These units each have the following:

- City & Guilds reference number
- unit accreditation number (UAN)
- title
- level
- credit value
- guided learning hours
- unit aim
- learning outcomes which are comprised of a number of assessment criteria

Unit 308

Install gas engineering products or assets above 355mm

UAN:	L/506/4755
Level:	3
Credit value:	9
GLH:	86
Aim:	The aim of this unit is to provide the learner with the knowledge, understanding and skills to install gas engineering products or assets above 355mm.

Learning outcome
The learner must be able to: 1. Interpret technical information for installing components of the system
Assessment criteria
This means you can: 1.1 produce work details for component installation use 1.2 from the technical information take off a. dimensions b. lengths c. widths d. quantities e. utilities plant f. services g. buildings h. kerbs i. boundaries 1.3 demonstrate how to make corrections through drawings, records and work documents

Learning outcome
The learner must be able to: 2. Be able to select components and resources for installation of the system.
Assessment criteria
This means you can: 2.1 select the type of components in compliance with the work and quality specifications 2.2 comply with procedures to replace defective components

- 2.3 comply with procedures to replace non-match components
- 2.4 comply with procedures to replace sub-standard components
- 2.5 confirm the availability of sufficient **resources**
- 2.6 confirm relevant authorisations and notices are in place to complete project
- 2.7 handle changes to the planned use of the resource
- 2.8 confirm components and installation equipment are operational

Range

Components: pipes, fittings, pipe support, anchorage

Resources: operatives; contractors; tools; equipment; materials

Learning outcome

The learner must be able to:

- 3. Install components of the system

Assessment criteria

This means you can:

- 3.1 determine the method of installation to be used when installing components of the system
- 3.2 carry out a site-specific risk assessment and review in accordance with company policy
- 3.3 select and wear the designated PPE
- 3.4 confirm the condition of the excavation conforms with instructions and specifications
- 3.5 select, prepare and operate installation equipment in accordance with the specification and manufacture's instructions
- 3.6 assemble components to industry standards using mechanical and/or fusion welding techniques
- 3.7 carry out site-specific tasks appropriately to prevent equipment damage
- 3.8 position components in accordance with the specification
- 3.9 install products or assets in accordance with the specification
- 3.10 protect installed assets with fine fill in accordance with specification and approved codes of practice
- 3.11 maintain proximity distances from other utilities apparatus in accordance with approved codes of practice
- 3.12 make connections to existing systems using in-line flowstopping and under pressure connections in accordance with codes of practice
- 3.13 support and anchor installed assets in accordance with codes of practice
- 3.14 confirm that the quality of the installation complies with the specified standard
- 3.15 maintain the security and safety of the system and third parties where work is not complete or not to schedule
- 3.16 ensure work practices conform to safe working procedures throughout the work activity
- 3.17 ensure all on-site personnel comply with relevant work specifications and complete tasks safely.

Learning outcome
The learner must be able to: 4. Use and communicate data and information
Assessment criteria
<p>This means you can:</p> <ul style="list-style-type: none"> 4.1 provide instructions to individuals who will be using technical information 4.2 confirm instructions have been understood by individuals using technical information 4.3 report to a designated person inaccuracies in the technical information sources used 4.4 complete work documentation accurately 4.5 record work documentation in the specified place or pass to a designated person 4.6 comply with procedures if working on a 'Permit to Work' designated activity.

Learning outcome
The learner must be able to: 5. Resolve problems that arise from technical information and installation work.
Assessment criteria
<p>This means you can:</p> <ul style="list-style-type: none"> 5.1 report to the designated person damage or defects to resources using approved procedures 5.2 report to the designated person work which is incomplete and not to schedule 5.3 report to the designated person problems and conditions outside the responsibility of the job role.

Learning outcome
The learner must be able to: 6. Know Health and Safety guidance and legislation in utilities network construction operations.
Assessment criteria
<p>This means you can:</p> <ul style="list-style-type: none"> 6.1 state the main responsibilities of the employer and employee under the Health and Safety at Work etc Act 6.2 explain the health and safety guidance governing work in excavations 6.3 describe the safe procedures for handling hazardous materials 6.4 explain the organisational accident recording and reporting procedures 6.5 identify the range and use of personal protective equipment for the work.

Learning outcome
<p>The learner must be able to:</p> <p>7. Understand how to install gas engineering products or assets above 355mm.</p>
<p>This means you can:</p> <p>7.1 state the organisation's policy and procedures for meeting the relevant</p> <ul style="list-style-type: none"> a. statutory requirements b. regulations c. codes of practice <p>7.2 explain the importance of carrying out on-site risk assessments and the need for constant review</p> <p>7.3 explain the importance of implementing a Safe System of Work (SSOW) document when working in excavations</p> <p>7.4 explain the importance of obtaining necessary permissions for isolation of any part of utilities network</p> <p>7.5 explain the importance of complying with current industry standards</p> <p>7.6 explain the implications of not obtaining the correct authorisation</p> <p>7.7 explain the implications of using incorrect plant, tools and materials</p> <p>7.8 explain the implications of using incorrect system components</p> <p>7.9 explain the actions to be taken where plant, tools, materials and system components fail to meet required specification</p> <p>7.10 describe faults associated with the use of inappropriate installation methods and tools</p> <p>7.11 state the main responsibilities of employers and employees under Working at Height regulations</p> <p>7.12 identify potential dangers in excavations</p> <p>7.13 describe the factors affecting, and means of confirming, the suitability of excavations</p> <p>7.14 explain the dangers of taking actions that can create confined space risks in excavations</p> <p>7.15 explain the dangers of inadequate handling and lifting procedure</p> <p>7.16 explain the dangers of lifting operations to on-site personnel on site.</p> <p>7.17 describe the types and signs of defect likely to be present, and means of determining the appropriate safe action.</p>

Learning outcome
<p>The learner must be able to:</p> <p>8. Understand isolation and connection methods.</p>
Assessment criteria
<p>This means you can:</p> <p>8.1 describe the range of isolation methods available and the rationale for their selection</p> <p>8.2 explain the procedure for obtaining authorisation to proceed with connections</p> <p>8.3 identify the range of actions to be taken if work cannot proceed to schedule</p>

- | |
|---|
| 8.4 explain how to determine appropriate safe remedial action if for any reason work cannot proceed |
| 8.5 identify methods of accessing information from different sources |
| 8.6 identify types and causes of likely disruptions |
| 8.7 identify methods of avoiding disruption . |

Range
Disruption equipment failure weather conditions system load ground conditions lack of available resources communication breakdown traffic public

Evidence requirements

Unit range

Guidance

Each individual organisation, such as Distribution Networks will have their own suite of policy and procedural documents. Accordingly, it is not deemed appropriate to name these although they would include for example Network Emergency Suite of Policies and Procedures. It is envisaged that whilst training is being conducted in separate Networks, individual Networks will ask training personnel to brief out these unique documents.

AC 1.1 work details to include project file including installation method.

AC 3.1 to cover PE and metallic; assessment on metallic can be covered under RWE.

AC3.3 the learner must select and wear the designated PPE as per company procedure

AC 4.6 'Permit to work' will fall under the remit of SCO; learners may not have an SCO qualification, but would be expected to comply with the procedures within the Permit to Work.

AC 6.3 Refer to company COSHH assessment for each hazardous material.

AC 7.12 Learners to be made aware of different trench support methods.

AC 7.14 Learners to be made aware of emergency rescue techniques.

AC8.1 Learners need to demonstrate a background knowledge of all isolation methods ie valves, stopple, iris stopple, in-line flowstopping.

AC 8.2 Obtaining authorisation will fall under the remit of SCO; learners may not have an SCO qualification, but would be expected to comply with the procedures within the Permit to Work.

Unit 309

Install gas engineering products or assets above 180mm up to and including 355mm

Level:	3
Credit value:	7
Aim:	<p>This unit is designed for the candidate to demonstrate competence in ensuring costs and quality standards and systems are met and that professional relationships are established and maintained, by organising, planning or supervising operational activities undertaken by contractors and/or the organisation's employees.</p> <p>This unit will apply to Network Construction Operations at Level 3 and is intended for Construction Supervisors.</p>

Learning outcome
<p>The learner must be able to:</p> <ol style="list-style-type: none">1. Be able to interpret technical information for installing components of the system.
Assessment criteria
<p>This means you can:</p> <ol style="list-style-type: none">1.1 produce work details for component installation use1.2 from the technical information take off<ol style="list-style-type: none">a. dimensionsb. lengthsc. widthsd. quantitiese. utilities plantf. servicesg. buildingsh. kerbsi. boundaries1.3 demonstrate how to make corrections through drawings, records and work documents

Range
work details project file including installation method

Learning outcome
The learner must be able to: 2. Select components and resources for installation of the system
Assessment criteria
<p>This means you can:</p> <ul style="list-style-type: none"> 2.1 select the type of components in compliance with the work and quality specifications 2.2 comply with procedures to replace defective components 2.3 comply with procedures to replace non-match components 2.4 comply with procedures to replace sub-standard components 2.5 confirm the availability of sufficient resources 2.6 confirm relevant authorisations and notices are in place to complete project 2.7 handle changes to the planned use of the resource 2.8 confirm components and installation equipment are operational.

Range
<p>Components pipes, fittings, pipe support, anchorage</p> <p>Resources Gas networks engineering staff, contractors</p>

Learning outcome
The learner must be able to: 3. Install components of the system
Assessment criteria
<p>This means you can:</p> <ul style="list-style-type: none"> 3.1 determine the method of installation to be used when installing components of the system 3.2 carry out a site-specific risk assessment and review in accordance with company policy 3.3 select and wear the designated PPE 3.4 confirm the condition of the excavation conforms with instructions and specifications 3.5 select, prepare and operate installation equipment in accordance with the specification and manufactures instructions 3.6 assemble components to industry standards using mechanical and/or fusion welding techniques 3.7 carry out site-specific tasks appropriately to prevent equipment damage 3.8 position components in accordance with the specification 3.9 protect installed assets with fine fill in accordance with specification and approved codes of practice 3.10 maintain proximity distances from other utilities apparatus in accordance with approved codes of practice 3.11 make connections to existing systems using in-line flow stopping and under pressure connections in accordance with codes of practice

- 3.12 support and anchor installed assets in accordance with codes of practice
- 3.13 confirm that the quality of the installation complies with the specified standard
- 3.14 maintain the security and safety of the system and third parties where work is not complete or not to schedule
- 3.15 ensure work practices conform to safe working procedures throughout the work activity
- 3.16 ensure all on-site personnel comply with relevant work specifications and complete tasks safely.

Learning outcome

The learner must be able to:

- 4. Use and communicate data and information

Assessment criteria

This means you can:

- 4.1 provide instructions to individuals who will be using technical information
- 4.2 confirm instructions have been understood by individuals using technical information
- 4.3 report to a designated person inaccuracies in the technical information sources used
- 4.4 complete work documentation accurately
- 4.5 record work documentation in the specified place or pass to a designated person
- 4.6 comply with procedures if working on a 'Permit to Work' designated activity

Learning outcome

The learner must be able to:

- 5. Resolve problems that arise from technical information and installation work

Assessment criteria

This means you can:

- 5.1 report to the designated person damage or defects to resources using approved procedures
- 5.2 report to the designated person work which is incomplete and not to schedule
- 5.3 report to the designated person problems and conditions outside the responsibility of the job role

Learning outcome

The learner must be able to:

- 6. Know Health and Safety guidance and legislation in utilities network construction operations

Assessment criteria

This means you can:

- 6.1 state the main responsibilities of the employer under the Health and Safety at Work etc Act
- 6.2 state the main responsibilities of the employee under the Health and Safety at Work etc Act
- 6.3 explain the health and safety guidance governing work in excavations
- 6.4 describe the safe procedures for handling hazardous materials
- 6.5 explain the organisational accident recording and reporting procedures
- 6.6 identify the range and use of personal protective equipment for the work.

Learning outcome

The learner must be able to:

- 7. Understand how to install gas engineering products or assets above 180mm up to and including 355mm.

Assessment criteria

This means you can:

- 7.1 state the main responsibilities of employers and employees under the current Working at Height regulations
- 7.2 explain the importance of carrying out on-site risk assessments and the need for constant review
- 7.3 explain the importance of implementing a Safe System of Work (SSOW) document when working in excavations
- 7.4 explain the importance of obtaining necessary permissions for isolation of any part of utilities network
- 7.5 explain the importance of complying with current industry standards
- 7.6 state the organisation's policy and procedures for meeting the relevant
 - a. statutory requirements
 - b. regulations
 - c. codes of practice
- 7.7 explain the implications of not obtaining the correct authorisation
- 7.8 explain the implications of using incorrect plant, tools and materials
- 7.9 explain the implications of using incorrect system components
- 7.10 explain the actions to be taken where plant, tools, materials and system components fail to meet required specification
- 7.11 describe faults associated with the use of inappropriate installation methods and tools
- 7.12 identify potential dangers in excavations
- 7.13 describe the factors affecting, and means of confirming, the suitability of excavations
- 7.14 explain the dangers of taking actions that can create confined space risks in excavations
- 7.15 describe the range of isolation methods available and the rationale for their selection
- 7.16 explain the procedure for obtaining authorisation to proceed with connections
- 7.17 identify the range of actions to be taken if work cannot proceed to schedule

- 7.18 explain how to determine appropriate safe remedial action if for any reason work cannot proceed
- 7.19 identify methods of accessing information from different sources
- 7.20 identify types and causes of likely disruptions
- 7.21 identify methods of avoiding **disruption**
- 7.22 explain the dangers of inadequate handling and lifting procedure
- 7.23 explain the dangers of lifting operations to on-site personnel on site
- 7.24 describe the types and signs of defect likely to be present, and means of determining the appropriate safe action.

Range
<p>Disruption</p> <p>equipment failure</p> <p>weather conditions</p> <p>system load</p> <p>ground conditions</p> <p>lack of available resources</p> <p>communication breakdown</p> <p>traffic</p> <p>public</p>

Unit 309 Install gas engineering products or assets above 180mm up to and including 355mm

Evidence requirements

Unit range

Guidance

AC 3.11 to cover PE and metallic; assessment on metallic can be covered under RWE.

AC 4.6 'Permit to work' will fall under the remit of SCO; learners may not have an SCO qualification, but would be expected to comply with the procedures within the Permit to Work.

AC6.4 Learners to refer to company COSHH assessment for each hazardous material.

AC 7.12 Learners to be made aware of different trench support methods.

AC7.14 Learners to be made aware of emergency rescue techniques.

AC7.15 Learners need to demonstrate a background knowledge of all isolation methods ie squeeze off, valves, stopple, iris stopple, in-line flowstopping.

Unit 310

Operate within the gas intermediate pressure range

UAN:	Y/506/4757
Level:	3
Credit value:	3
GLH:	23
Aim:	The aim of this unit is to provide the learner with the knowledge and understanding to operate in compliance with legislation, regulation, policies, procedures, instructions and guidance in the gas industry, specifically within the gas intermediate pressure range sector

Learning outcome

The learner will:

1. Understand key documents that apply to working in the gas intermediate pressure range sector

Assessment criteria

The learner can:

- 1.1 list the **key legislative** and industry standard documents in relation to work in the gas intermediate pressure range
- 1.2 state the **consequences** of not complying with **key legislative** and industry standard documents
- 1.3 state employer responsibilities within the Health and Safety at Work etc Act
- 1.4 state employee responsibilities within the Health and Safety at Work etc Act.

Range

key legislative documents

Health & Safety at Work etc Act
Control of Substances Hazardous to Health (COSHH)
Construction (Design and Management) Regulations
Dangerous Substances & Explosive Atmosphere Regulations
Gas Safety (Management) Regulations
Management of Health & Safety at Work Regulations
Pipeline Safety Regulations
Pressure Systems Safety Regulations
Gas Safety Regulations (Installations and Use) Regulations

The Lifting Operations & Lifting Regulations Equipment Regulations (LOLER)
Provision & Use of Work Equipment Regulations (PUWER)
Reporting on Injuries, Diseases and Dangerous Occurrences (RIDDOR)

Industry standard documents

External Documents: Health & Safety Executive Approved Codes of Practice, Health & Safety Executive Guidance notes, Institute of Gas Engineers and Managers (IGEM) suite of documents applicable to work in the gas intermediate pressure range (IGEM/TD/1 – Handling, Transport and Storage of Steel Pipe, IGEM/TD/3 – Distribution Mains <16 bar, IGEM/TD/4 – Distribution Services <16 bar, IGEM/TD/13 – Pressure Regulating Installations, IGEM/GL/5 – Procedures for Managing New Works, Modifications and Repairs)

Consequences

Injury or death, prosecution, prohibition and enforcement notices, disciplinary procedures.

Learning outcome

The learner will:

2. Be able to comply with key legislation, organisational policies and procedures that apply to work instructions in the gas intermediate pressure range.

Assessment criteria

The learner can:

- 2.1 produce a detailed **work instruction**
- 2.2 comply with legislation according to information contained within a work instruction
- 2.3 comply with organisational policy and procedural information contained within a work instruction.

Range

Work instruction

SCO, site specific risk assessment, environmental risk assessment, generic risk assessment, industry standard documents.

Learning outcome
The learner will: 3 Know how to evaluate hazards and risks associated with the gas intermediate pressure range.
Assessment criteria
The learner can: 3.1 identify hazards associated with the gas intermediate pressure range 3.2 identify risks associated with the gas intermediate pressure range 3.3 identify control measures associated with the gas intermediate pressure range.

Range
<p>Hazards</p> <p>Catastrophic failure of pipe wall and fittings Working at the parent main Disturbing anchorage of pipe, fittings and end caps Sudden release of pressure from a pressurised system Ignition of gas Potential escape at elevated pressure Working with elevated pressure in the gas intermediate pressure range Lifting operations Trench collapse</p> <p>Risks</p> <p>Fire, explosion, airborne/noise/water/land pollution, debris, environmental damage, asphyxiation, escape of gas, personal injury, loss of gas supply.</p> <p>Control measures</p> <p>Staff competency, PPE, fire fighting equipment, breathing apparatus, lifting plan, mechanised lifting equipment, trench support, access and egress, emergency services, pressure reduction/isolation of supply, media coverage, evacuation and safeguarding of life and property, extinguish sources of ignition, effective communication, use of correct waste streams, Safe Control of Operations (SCO).</p>

Learning outcome
The learner will: 4. Know the correct personal protective equipment (PPE) used within the gas intermediate pressure range.
Assessment criteria
The learner can: 4.1 list personal protective equipment (PPE) typically used in the gas intermediate pressure range

4.2 list **safety equipment** typically used in the gas intermediate pressure range.

Range

Personal protective equipment

Full fire suit made from suitable fire retardant material
Fire resistant clothing made from suitable fire retardant material
Eye protection
Safety headgear
Ear defenders
Reflective garments
Gloves
Safety footwear
Dust masks
Welding visors where appropriate

Safety equipment

Breathing apparatus with forced air available
Personal alarm/gas monitor
Fire extinguishers
Intrinsically safe equipment

Learning outcome

The learner will:

- | |
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| 5. Be able to identify and install pressure reduction equipment within the gas intermediate pressure range on services up to and including 63 mm or 2" diameter. |
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Assessment criteria

The learner can:

- | |
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| 5.1 identify locations for pressure regulating equipment |
| 5.2 identify locations for emergency isolation valves |
| 5.3 state housing requirements for pressure reduction equipment |
| 5.4 select materials and equipment to be used in the gas intermediate pressure range sector |
| 5.5 identify jointing techniques applicable to services up to and including 63 mm or 2" diameter |
| 5.6 install pressure reduction equipment up to and including 63 mm or 2" diameter |
| 5.7 test pressure reduction equipment up to and including 63 mm or 2" diameter |
| 5.8 commission pressure reduction equipment up to and including 63 mm or 2" diameter |
| 5.9 decommission pressure reduction equipment up to and including 63 mm or 2" diameter. |

Range
Joining techniques Fillet weld joints for steel services Mechanical jointing - flanged Electrofusion joints Branch saddles for intermediate pressure services

Learning outcome
The learner will: 6. Understand how to comply with organisational procedures within the gas intermediate pressure range.
Assessment criteria
The learner can: 6.1 explain the importance of quality assurance certification 6.2 identify the organisational procedures to be followed when incorrect materials are encountered in the gas intermediate pressure range.

Range
Materials Correct specification of materials in compliance with Gas Industry Standards Concrete raft bases for Housings Valve positions, chambers and boxes

Learning outcome
The learner will: 7. Be able to use cathodic protection within the gas intermediate pressure range.
Assessment criteria
The learner can: 7.1 explain the purpose of cathodic protection on metallic systems 7.2 interpret design details for cathodic protection 7.3 explain the requirements for insulating joints 7.4 identify equipment for identifying exposed metallic pipework 7.5 select components used for cathodic protection 7.6 install cathodic protection within the gas intermediate pressure range.

Learning outcome
The learner will: 8. Be able to identify and install pressure reduction equipment within the gas intermediate pressure range to assets above 63 mm or 2" diameter.
Assessment criteria

The learner can:

- 8.1 state the restrictions on installation techniques in the gas intermediate pressure range
- 8.2 describe typical valve arrangements in the gas intermediate pressure range
- 8.3 state approved flow stop methods in the gas intermediate pressure range
- 8.4 select materials and equipment to be used in the gas intermediate pressure range sector above 63 mm or 2" diameter
- 8.5 identify jointing techniques applicable to assets above 63 mm or 2" diameter
- 8.6 install pressure reduction equipment to assets above 63 mm or 2" diameter
- 8.7 test pressure reduction equipment to assets above 63 mm or 2" diameter
- 8.8 commission pressure reduction equipment to assets above 63 mm or 2" diameter
- 8.9 decommission pressure reduction equipment to assets above 63 mm or 2" diameter.

Range

Installation techniques

trenchless technology
inserted systems
open cut

Jointing techniques

Butt weld joints for steel mains
Hot work at the parent main
Mechanical jointing - flanged
Butt fusion on polyethylene mains
Electrofusion joints on mains
Branch saddle connections on polyethylene parent main

Unit 310 Operate within the gas intermediate pressure range

Supporting information

Evidence requirements

For outcome 5 the learner will be required to partake in a practical assessment to demonstrate competence in the installation, commissioning and decommissioning of pressure reduction equipment up to and including 2" diameter. This is to be carried out through direct observation through realistic working environment (RWE) conditions.

For outcome 7 and 8 the learner will be required to partake in a practical assessment to demonstrate competence in the installation, commissioning and decommissioning assets above 63 mm or 2" diameter. This is to be carried out through either work based observation or through realistic working environment (RWE) conditions.

Guidance

Each individual organisation, such as Gas Networks will have their own suite of policy and procedural documents. Accordingly, it is not deemed appropriate to name these although they would include for example Network Emergency Suite of Policies and Procedures. It is envisaged that whilst training is being conducted in separate Networks, individual Networks will ask training personnel to brief out these unique documents.

Unit 311

Operate safely in emergency situations within the gas intermediate pressure range

UAN:	D/506/4758
Level:	3
Credit value:	2
GLH:	16
Aim:	The aim of this unit is to provide the learner with the knowledge and understanding to operate in compliance with legislation, regulation, policies, procedures, instructions and guidance in the gas industry, specifically within the gas intermediate pressure range sector for emergency working

Learning outcome

The learner will:

1. Understand key documents that apply to emergency situations when working in the gas intermediate pressure range sector

Assessment criteria

The learner can:

- 1.1 list the **key legislative** and industry standard documents in relation to emergency situations when working in the gas intermediate pressure range
- 1.2 state the consequences of not complying with **key legislative** and industry standard documents
- 1.3 state employer responsibilities within the Health and Safety at Work etc Act
- 1.4 state employee responsibilities within the Health and Safety at Work etc Act.

Range

Key legislative documents

Health & Safety at Work etc Act
Control of Substances Hazardous to Health (COSHH)
Dangerous Substances & Explosive Atmosphere Regulations
Gas Safety (Management) Regulations
Management of Health & Safety at Work Regulations
Pipeline Safety Regulations

Pressure Systems Safety Regulations
 Gas Safety Regulations (Installations and Use) Regulations
 The Lifting Operations & Lifting Regulations Equipment Regulations (LOLER)
 Provision & Use of Work Equipment Regulations (PUWER)
 Reporting on Injuries, Diseases and Dangerous Occurrences (RIDDOR)
 Personal Protective Equipment (PPE) Regulations
 Control of Noise at Work Regulations
 Manual Handling Regulations

Industry standard documents

External Documents: Health & Safety Executive Approved Codes of Practice, Health & Safety Executive Guidance notes, Institute of Gas Engineers and Managers (IGEM) suite of documents applicable to work in the gas intermediate pressure range (IGEM/TD/1 – Handling, Transport and Storage of Steel Pipe, IGEM/TD/3 – Distribution Mains <16 bar, IGEM/TD/4 – Distribution Services <16 bar, IGEM/TD/13 – Pressure Regulating Installations, IGEM/GL/5 – Procedures for Managing New Works, Modifications and Repairs), Health and safety in construction (HSG 150), Health and Safety in Excavations (HSG 185).

Consequences

Injury or death, prosecution, prohibition and enforcement notices, disciplinary procedures.

Learning outcome

The learner will:

2. Be able to evaluate hazards and risks that apply to emergency situations in the gas intermediate pressure range sector.

Assessment criteria

The learner can:

- 2.1 identify generic risks and hazards that apply to work in emergency situations in the gas intermediate pressure range sector
- 2.2 evaluate increased risks that apply to work in emergency situations in the gas intermediate pressure range sector
- 2.3 describe control measures associated with emergency situations when working in the gas intermediate pressure range
- 2.4 produce a site specific risk assessment associated with emergency situations in the gas intermediate pressure range sector
- 2.5 explain risks to other team members that apply to work in emergency situations in the gas intermediate pressure range sector.

Learning outcome
<p>The learner will:</p> <p>3. Be able to evaluate environmental hazards and environmental risks that apply to emergency situations in the gas intermediate pressure range sector.</p>
Assessment criteria
<p>The learner can:</p> <p>3.1 identify environmental hazards that apply to emergency situations in the gas intermediate pressure range sector</p> <p>3.2 identify environmental risks that apply to emergency situations in the gas intermediate pressure range sector</p> <p>3.3 produce a site specific environmental risk assessment that applies to an emergency situation in the gas intermediate pressure range sector</p> <p>3.4 explain environmental risks to other team members that apply to emergency situations in the gas intermediate pressure range sector</p> <p>3.5 dispose of all waste in proper waste management streams in order to comply with ISO 14001 regulations.</p>

Range
<p>Environmental hazards</p> <p>Noise pollution</p> <p>Airborne pollution</p> <p>Water pollution</p> <p>Land pollution</p> <p>Environmental risks</p> <p>Contamination to the environment</p> <p>Failure to protect the health and safety of operatives and the general public</p> <p>Incorrect disposal of waste and excess hazardous materials</p>

Learning outcome
<p>The learner will:</p> <p>4. Know the importance of using the correct personal protective equipment and safety equipment when working in emergency situations in the gas intermediate pressure range sector.</p>
Assessment criteria
<p>The learner can:</p> <p>4.1 list personal protective equipment (PPE) required when working in emergency situations in the gas intermediate pressure range sector</p> <p>4.2 list safety equipment required when working in emergency situations in the gas intermediate pressure range sector.</p>

Range
Personal protective equipment (PPE) Full fire suit made from suitable fire retardant material Fire resistant clothing made from suitable fire retardant material Eye protection Safety headgear Ear defenders Reflective garments Gloves Safety footwear Dust masks Welding visors where appropriate Breathing apparatus with forced air available Safety equipment Air movers Personal alarm/gas monitor Fire extinguishers Intrinsically safe equipment

Learning outcome
The learner will: 5. Know how to set up a safety exclusion zone at the location of a gas escape within the gas intermediate pressure range sector for emergency working.
Assessment criteria
The learner can: 5.1 explain the requirements for safety exclusion zones 5.2 state exclusion distances at different operational pressures 5.3 describe support to be given to personnel following emergency situations in the gas intermediate pressure range.

Range
Support monitoring of gas levels, customer liaison, liaising with emergency services, incident control

Learning outcome
The learner will: 6. Be able to identify and use repair methods and materials within emergency situations in the gas intermediate pressure range sector.
Assessment criteria
The learner can: 6.1 explain the characteristics of differing valve types 6.2 explain the effect of strategic valve closure on a Gas Distribution Network in an emergency situation

- 6.3 comply with manufacturers instructions for valve operation and repair
- 6.4 select approved materials to Gas Industry Standards
- 6.5 comply with organisational procedures when incorrect materials are encountered in the gas intermediate pressure range sector
- 6.6 explain the importance of compliance for approved methods of repair
- 6.7 explain the role of manufacturers in a repair process
- 6.8 carry out an approved repair method on an intermediate pressure installation as used in an emergency situation.

Unit 311 Operate safely in emergency situations within the gas intermediate pressure range

Supporting information

Evidence requirements

Guidance

It is recommended that learners complete unit 310 (Operate within the gas intermediate pressure range) before taking this unit.

Each individual organisation, such as Distribution Networks will have their own suite of policy and procedural documents. Accordingly, it is not deemed appropriate to name these although they would include for example Network Emergency Suite of Policies and Procedures. It is envisaged that whilst training is being conducted in separate Networks, individual Networks will ask training personnel to brief out these unique documents.

Unit 312

Agree a course of action to deal with gas network construction related issues

UAN:	M/506/0696
Level:	3
Credit value:	4
GLH:	14
Aim:	<p>This unit is designed for the candidate to demonstrate competence in ensuring costs and quality standards and systems are met and that professional relationships are established and maintained, by organising, planning or supervising operational activities undertaken by contractors and/or the organisation's employees.</p> <p>This unit will apply to Network Construction Operations at Level 3 and is intended for Construction Supervisors.</p>

Learning outcome

The learner must be able to:

1. Agree courses of action to deal with gas network construction related issues

Assessment criteria

This means you can:

- 1.1 confirm details of gas network construction related issues with customers
- 1.2 check that customers understand regulatory requirements
- 1.3 confirm responsibility for network construction or maintenance relating to relevant information and approved procedures and practices
- 1.4 confirm courses of action with customers meeting regulatory requirements and approved procedures and practices
- 1.5 record information relating to approved procedures and practices

Learning outcome

The learner must be able to:

2. Understand how to agree courses of action with customers

Assessment criteria

This means you can:

- 2.1 state the organisational policies and access requirements relating to leakage on service pipes
- 2.2 explain the customers' involvement relating to leakage and supply interruption on service pipes
- 2.3 explain the importance of checking that customers understand the legal position regarding leaks and supply interruptions on service pipes
- 2.4 state the importance of service level agreements (SLA) and customer service policies for dealing with leaks on service pipes.
- 2.5 explain recording requirements for agreeing courses of action with customers on gas network construction related issues
- 2.6 explain the importance of informing details of referrals to customers.

Unit 313

Obtain information for decision making for network construction operations

UAN:	Y/502/9703
Level:	3
Credit value:	3
GLH:	9
Aim:	This unit is designed for the candidate to demonstrate competence in gathering information related to organising, planning or supervising operational activities on the distribution network. Information from the network may include monitoring existing system status; information about proposed works and potential effectiveness and cost-benefits; information about existing, new and innovative techniques, fittings and materials and how they can be used on the network without disrupting supply or compromising water quality.

This unit will apply to Network Construction Operations at Level 3 and is intended for Construction Supervisors.

Learning outcome
The learner must be able to: 1. Obtain information for decision making
Assessment criteria
This means you can: 1.1 identify the relevant information (1) you need to make the required decisions 1.2 ensure the sources of relevant information (1) which you use are reliable and sufficiently wide-ranging to meet current and likely future relevant information (1) requirements 1.3 ensure that methods of obtaining relevant information (1) are reliable, effective and make efficient use of resources (2) 1.4 ensure that methods of obtaining relevant information (1) are consistent with approved procedures and practices (3) 1.5 ensure the relevant information (1) you obtain is accurate, relevant and sufficient to support decision making 1.6 where information is inadequate, contradictory or ambiguous you take prompt and effective action to deal with this

Learning outcome
<p>The learner must be able to:</p> <p>2. Demonstrate knowledge and understanding of obtaining information for decision making</p>
Assessment criteria
<p>This means you can:</p> <p>2.1 identify the types of qualitative and quantitative information which are essential to their role and responsibilities</p> <p>2.2 explain the range of available sources of information and how to ensure that these are capable of meeting current and likely future information requirements</p> <p>2.3 identify new sources of information that may be required</p> <p>2.4 describe the range of methods of gathering and checking the validity of information and their advantages and disadvantages</p> <p>2.5 explain the importance of information management to the team and organisational effectiveness and their role and responsibilities in relation to this</p> <p>2.6 describe the legal requirements and organisational values and policies that affect the collection of information and how to interpret these</p> <p>2.7 explain how to judge the accuracy, relevance and sufficiency of information required to support decision making in different contexts</p> <p>2.8 describe how to identify information that could be contradictory, ambiguous or inadequate and how to deal with these problems</p>

Range
<p>(1) Relevant information: Sources of information, statutory and non statutory reports, company documentation, job instructions, client documentation (internal or external)</p> <p>(2) Resources: Plant, equipment, materials, labour, consumables</p> <p>(3) Approved procedures and practices: Environmental, organisational regulatory, statutory, emergency, operational, health, safety and environment, contingency plans, relevant company policies, approved materials and equipment and procedures, and risk assessments. In accordance with the industry's expectations of a Construction Supervisor, including the organisation of all aspects of site operations including planned and unplanned work</p>

Unit 314

Record and store information for network construction operations

UAN:	D/502/9704
Level:	3
Credit value:	4
GLH:	14
Aim:	<p>This unit is designed for the candidate to demonstrate competence in collecting, collating and storing information related to organising, planning or supervising operational activities on the distribution network. Information from the network may include monitoring existing system status; information about proposed works and potential effectiveness and cost-benefits; information about existing, new and innovative techniques, fittings and materials and how they can be used on the network without disrupting supply or compromising water quality.</p> <p>This unit will apply to Network Construction Operations at Level 3 and is intended for Construction Supervisors.</p>

Learning outcome
The learner must be able to: 1. Record and store information
Assessment criteria
This means you can: 1.1 Ensure that systems and procedures for recording and storing relevant information (1) are suitable for the purpose and make efficient use of resources (2) 1.2 Demonstrate that the way you record and store relevant information (1) complies with approved procedures and practices (3) 1.3 Demonstrate that the relevant information (1) you record and store is readily accessible in the required format to authorised individuals and organisations (4) only 1.4 provide opportunities for team members to make suggestions for improvements to approved procedures and practices (3)

- 1.5 make recommendations for improvements to **approved procedures and practices (3)** to the relevant **individuals and organisations (4)**
- 1.6 ensure that recommendations take account of organisational **implications and constraints (5)**

Learning outcome

The learner must be able to:

2. Demonstrate knowledge and understanding of recording and storing information

Assessment criteria

This means you can:

- 2.1 List the different methods of recording and storing information and their advantages and disadvantages
- 2.2 Describe the organisational policies and legal requirements which have a bearing on the recording and storage of information and how to interpret these
- 2.3 List the different communication formats that can be used to present qualitative and quantitative information
- 2.4 Describe how to select a communication format appropriate to different purposes and recipients of information
- 2.5 Explain how to ensure that information is organised in a way that makes it readily accessible
- 2.6 Explain the principles of confidentiality and what information should be made available to which people
- 2.7 Explain the importance of providing opportunities for team members to recommend improvements to systems and procedures
- 2.8 Describe how to encourage and enable team members to make recommendations
- 2.9 how to assess the effectiveness of current methods of collecting and storing information and the procedures to follow in order to make recommendations on improvements

Range

(1) Relevant information: Sources of information, statutory and non statutory reports, company documentation, job instructions, client documentation (internal or external)

(2) Resources: Plant, equipment, materials, labour, consumables

(3) Approved procedures and practices: Environmental, organisational regulatory, statutory, emergency, operational, health, safety and environment, contingency plans, relevant company policies, approved materials and equipment and procedures, and risk assessments. In accordance with the industry's expectations of a Construction Supervisor, including the organisation of all aspects of site operations including planned and unplanned work

(4) Individuals and organisations: Customers, contractors, network operatives, colleagues, statutory bodies

(5) Implications and constraints: Customer considerations, work details (including design, extent, location, time, duration, anticipated completion time), availability of resources, effect of weather/seasonal conditions

Unit 315

Analyse information to support decision making for network construction operations

UAN:	H/502/9705
Level:	3
Credit value:	4
GLH:	15
Aim:	This unit is designed for the candidate to demonstrate competence in analysing data related to organising, planning or supervising operational activities on the distribution network. Information from the network may include monitoring existing system status; information about proposed works and potential effectiveness and cost-benefits; information about existing, new and innovative techniques, fittings and materials and how they can be used on the network without disrupting supply or compromising water quality.

This unit will apply to Network Construction Operations at Level 3 and is intended for Construction Supervisors.

Learning outcome
The learner must be able to: 1. Analyse information to support decision making
Assessment criteria
This means you can: 1.1 identify clear objectives for your analysis (1) that are consistent with the decisions which need to be made 1.2 select relevant information (2) which is accurate, relevant to the objectives, and sufficient to arrive at reliable decisions 1.3 use methods of analysis (1) which are suitable to achieve the objectives 1.4 carry out analysis (1) of the relevant information (2) and correctly identify relevant patterns and trends 1.5 support conclusions with reasoned argument and appropriate evidence 1.6 differentiate clearly between fact and opinion in presenting the results of analysis (1)

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| 1.7 ensure that records of the analysis (1) are sufficient to show the assumptions and decisions made at each stage |
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Learning outcome

The learner must be able to:

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| 2. Demonstrate knowledge and understanding of how to analyse information to support decision making |
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Assessment criteria

This means you can:

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| 2.1 Describe the different approaches to, and methods of, analysing information and how to select methods of analysis appropriate to the decisions that must be made |
| 2.2 State what types of information, both qualitative and quantitative, are needed to be able to carry out analysis effectively |
| 2.3 Explain how to select information that is relevant to the decisions required |
| 2.4 Describe how to ensure the information used for analyses is accurate and relevant |
| 2.5 Explain the importance of analysing information effectively and your own role and responsibility in relation to this |
| 2.6 Explain how to analyse information to identify patterns and trends |
| 2.7 Explain how to draw conclusions from analysis of the information |
| 2.8 Explain how to develop and present a reasoned case based on the outcomes of analysis |
| 2.9 State how to identify the differences between fact and opinion, and present them accordingly |
| 2.10 Describe the importance of record-keeping to the analysis of information and how records should be kept and used |

Range

(1) Analysis: Examination of elements and structure, dissemination into constituent parts, conclusions and recommendations

(2) Relevant information: Sources of information, statutory and non statutory reports, company documentation, job instructions, client documentation (internal or external)

UAN:	T/506/0702
Level:	3
Credit value:	3
GLH:	14
Aim:	<p>This unit is designed for the candidate to demonstrate competence in ensuring costs and quality standards and systems are met and that professional relationships are established and maintained, by organising, planning or supervising operational activities undertaken by contractors and/or the organisation's employees.</p> <p>This unit will apply to Network Construction Operations at Level 3 and is intended for Construction Supervisors.</p>

Learning outcome
<p>The learner must be able to:</p> <ol style="list-style-type: none"> 1. Commission networks
Assessment criteria
<p>This means you can:</p> <ol style="list-style-type: none"> 1.1 specify the procedures and practices for commissioning networks 1.2 plan ways to commission the networks 1.3 confirm correct environment to implement the commissioning of networks 1.4 identify resources required to undertake the commissioning of networks 1.5 ensure that the commissioning is implemented correctly 1.6 solve any problems with the commissioning of networks 1.7 assess the results of the commissioning to identify the outputs of networks 1.8 confirm that commissioning procedures comply with procedures and practices and regulatory requirements 1.9 ensure that results of the commissioning are recorded in relevant information systems

Learning outcome
<p>The learner must be able to:</p> <p>2. Understand the implications and importance of decisions when commissioning networks</p>
Assessment criteria
<p>This means you can:</p> <p>2.1 state the commissioning methods and procedures that should be used</p> <p>2.2 explain which types of commissioning are suitable for different networks</p> <p>2.3 explain the factors that should be taken into account when planning commissioning</p> <p>2.4 describe the range of conditions that could occur and how they affect the commissioning</p> <p>2.5 explain the processes used to ensure that commissioning is implemented correctly</p> <p>2.6 describe the types of problems that may occur when commissioning gas networks</p> <p>2.7 explain methods used to solve different types of commissioning problems</p> <p>2.8 describe the expected outputs from the network</p> <p>2.9 explain the specifications for the network being commissioned</p> <p>2.10 explain how to assess the results of the commissioning</p> <p>2.11 explain how to obtain information on resources for commissioning networks</p> <p>2.12 describe the resources necessary for commissioning</p> <p>2.13 explain what resources are available for the operation</p> <p>2.14 describe the regulations and guidelines that are relevant to commissioning gas networks</p> <p>2.15 describe the systems used for recording information about commissioning</p> <p>2.16 explain the importance of using required information systems</p>

Unit 307

Decommissioning and abandonment of mains and services 63mm and above

UAN:	H/506/0789
Level:	3
Credit value:	7
GLH:	60
Aim:	<p>This unit is designed for the candidate to demonstrate competence in ensuring costs and quality standards and systems are met and that professional relationships are established and maintained, by organising, planning or supervising operational activities undertaken by contractors and/or the organisation's employees.</p> <p>This unit will apply to Network Construction Operations at Level 3 and is intended for Construction Supervisors.</p>

Learning outcome
<p>The learner must be able to:</p> <ol style="list-style-type: none">1. Conduct specified testing of gas networks associated with decommissioning
Assessment criteria
<p>This means you can:</p> <ol style="list-style-type: none">1.1 perform work activities safely at all times in accordance with legislative and regulatory requirements1.2 carry out a site specific risk assessment and review in accordance with company procedures1.3 select and wear the designated PPE1.4 elect and use the specified equipment for testing1.5 use testing and purging tools and equipment in accordance with industry standards and codes of practice1.6 purge system in accordance with industry standards and codes of practice1.7 carry out mains decay tests in accordance with codes of practice1.8 interpret decay test results to determine if asset in suitable condition for abandonment1.9 take actions within your own level of responsibility1.10 report results that require action that are outside your authority to authorised persons in accordance with codes of practice

Learning outcome
The learner must be able to: 2. Be able to interpret technical information for decommissioning
Assessment criteria
This means you can: 2.1 produce work details for component installation use 2.2 from the technical information, take off <ul style="list-style-type: none"> a. dimensions b. lengths c. widths d. volumes e. utilities plant 2.3 demonstrate how to make corrections through drawings, records and work documents

Learning outcome
The learner must be able to: 3. Select components and resources for decommissioning
Assessment criteria
This means you can: 3.1 select the type of components in compliance with the work and quality specifications 3.2 comply with procedures to replace defective components 3.3 comply with procedures to replace non-match components 3.4 comply with procedures to replace sub-standard components 3.5 confirm the availability of sufficient resources 3.6 handle changes to the planned use of the resource 3.7 confirm components and decommissioning equipment are operational

Learning outcome
The learner must be able to: 4. Decommission the system
Assessment criteria

Learning outcome
The learner must be able to: 5. Be able to use and communicate data and information
Assessment criteria
This means you can: 5.1 provide instructions to individuals who will be using technical information 5.2 confirm instructions have been understood by individuals using technical information 5.3 report to a designated person inaccuracies in the technical information sources used

5.4 complete work documentation accurately
5.5 record work documentation in the specified place or pass to a designated person
5.6 comply with procedures if working on a 'Permit to Work' designated activity

Learning outcome
The learner must be able to:
6. Resolve problems that arise from technical information and decommissioning work
Assessment criteria
This means you can:
6.1 report to the designated person damage or defects to resources using approved procedures
6.2 report to the designated person work which is incomplete and not to schedule
6.3 report to the designated person problems and conditions outside the responsibility of the job role

Learning outcome
The learner must be able to:
7. Know Health and Safety guidance and legislation in utilities network construction operations
Assessment criteria
This means you can:
7.1 state the main responsibilities of the employer and employee under the Health and Safety at Work Act
7.2 explain the health and safety guidance governing work in excavations
7.3 describe the safe procedures for handling hazardous materials
7.4 explain the organisational accident recording and reporting procedures
7.5 identify the range and use of personal protective equipment for the work

Learning outcome
The learner must be able to:
8. Understand how to decommission gas engineering products or assets
Assessment criteria
This means you can:
8.1 state the main responsibilities of employers and employees under the current working at height regulations
8.2 explain the importance of carrying out on-site risk assessments and the need for constant review
8.3 explain the importance of implementing a safe system of work (SSOW) document when working in excavations
8.4 explain the importance of obtaining necessary permissions for isolation of any part of utilities network

- 8.5 explain the importance of complying with current industry standards
- 8.6 state the organisation's policy and procedures for meeting the relevant
 - a. statutory requirements
 - b. regulations
 - c. codes of practice
- 8.7 explain the implications of not obtaining the correct authorisation
- 8.8 explain the implications of using incorrect plant, tools and materials
- 8.9 explain the implications of using incorrect system components
- 8.10 explain the actions to be taken where plant, tools, materials and system components fail to meet required specification
- 8.11 describe faults associated with the use of inappropriate installation methods and tools
- 8.12 identify potential dangers in excavations
- 8.13 describe the factors affecting, and means of confirming, the suitability of excavations
- 8.14 explain the dangers of taking actions that can create confined space risks in excavations
- 8.15 describe the range of isolation methods available and the rationale for their selection
- 8.16 explain the procedure for obtaining authorisation to proceed with decommissioning
- 8.17 identify the range of actions to be taken if work cannot proceed to schedule
- 8.18 explain how to determine appropriate safe remedial action if for any reason work cannot proceed
- 8.19 identify methods of accessing information from different sources
- 8.20 identify types and causes of likely **(2) disruptions**
- 8.21 identify methods of avoiding **(2) disruption**
- 8.22 explain the dangers of inadequate handling and lifting procedure
- 8.23 explain the procedure for returning to work on an abandoned system

Range
(1) Method: direct and indirect purging (2) Disruption: equipment failure, weather conditions, system load, ground conditions, lack of available resources, communication breakdown

Guidance

AC 1.1: Performing work activities safely must include the use of appropriate safety equipment.

AC 1.2: Company procedures to be interpreted as industry standards.

AC 1.5: 'Purging tools' can also be referred to as 'decommissioning tools'.

AC 1.6: 'Purge system' can also mean 'decommission system'.

AC 2.1: Some work details would not necessarily need to be produced by the learner, such as SCO documentation.

AC 2.2: Pressure and purge rates must also be calculated.

AC 3.2-3.4: Compliance with procedures to be achieved through following manufacturer's instructions and industry standards.

AC 4.2: Company procedures to be interpreted as industry standards.

AC 5.6: 'Permit to work' will fall under the remit of SCO; learners may not have an SCO qualification, but would be expected to comply with the procedures within the Permit to Work.

AC 8.16: To include procedure following a decay test.

Unit 317

Advise and inform others about network construction operations

UAN:	K/502/9706
Level:	3
Credit value:	4
GLH:	14
Aim:	<p>This unit is about providing advice and information to organisations and individuals about network construction operations, taking into account needs of recipients and organisational constraints and implications.</p> <p>You will need to know the importance of providing advice, the types of information and advice people may require and how to communicate that information and advice both orally and written. You also need to know the organisational policies, procedures and constraints which may affect the advice given to others.</p>

Learning outcome

The learner must be able to:

1. Advise and inform others

Assessment criteria

This means you can:

- 1.1 carry out appropriate and sufficient research of the advice and relevant information needs of recipients, taking account of organisational implications and constraints
- 1.2 provide advice and relevant information at a time and place and in a form and manner appropriate to the needs of individuals and organisations
- 1.3 ensure that the relevant information provided is relevant, accurate, current and sufficient
- 1.4 ensure advice given is consistent with approved procedures and practices and implications and constraints
- 1.5 provide advice that is supported by reasoned argument and evidence
- 1.6 confirm individuals and organisations' understanding of the advice and relevant information provided
- 1.7 maintain confidentiality according to approved procedures and practices

1.8 use feedback from individuals and organisations to improve the way you provide advice and relevant information

Learning outcome

The learner must be able to:

2. Demonstrate knowledge and understanding of advising and informing others

Assessment criteria

This means you can:

- 2.1 Describe how to identify information needs
- 2.2 State the types of advice and information which people may require
- 2.3 Describe how to communicate advice and information effectively both orally and in writing
- 2.4 Explain the importance of checking the validity of advice and information provided to others
- 2.5 Explain how to ensure accuracy, currency, sufficiency and relevance of advice and information
- 2.6 State the organisational policies, procedures and resource constraints which may affect advice given to others
- 2.7 Describe situations in which it is appropriate to act on your own initiative in giving information and advice
- 2.8 Explain the importance of providing advice and information and your role and responsibilities in relation to this
- 2.9 Describe how to develop and present a reasoned case when providing advice to others
- 2.10 Explain the importance of confirming the recipient's understanding of information and advice provided and how to do this
- 2.11 Describe the principles of confidentiality when handling information and advice, and what types of information and advice may be provided to what people
- 2.12 Explain the importance of seeking feedback on the quality and relevance of the advice and information you provide and how to encourage feedback.

Unit 318

Inform customers about gas network construction related issues

UAN:	Y/506/0711
Level:	3
Credit value:	3
GLH:	14
Aim:	<p>This unit is designed for the candidate to demonstrate competence in ensuring costs and quality standards and systems are met and that professional relationships are established and maintained, by organising, planning or supervising operational activities undertaken by contractors and/or the organisation's employees.</p> <p>This unit will apply to Network Construction Operations at Level 3 and is intended for Construction Supervisors.</p>

Learning outcome

The learner must be able to:

1. Inform customers about gas network construction related issues.

Assessment criteria

This means you can:

- 1.1 ensure approach to customers meets approved procedures and practices for customer contact
- 1.2 treat customers in a courteous and helpful manner
- 1.3 confirm the detail of the gas network construction related issue with the customers
- 1.4 provide accurate information about regulatory requirements and approved procedures and practices regarding network construction related issue
- 1.5 confirm who has responsibility for network construction related issues according to approved procedures and practices
- 1.6 confirm customers have understood their responsibility for network construction related issues
- 1.7 record relevant information according to approved procedures and practices.

Learning outcome
<p>The learner must be able to:</p> <p>2. Understand how to inform customers about gas network construction related issues</p>
Assessment criteria
<p>This means you can:</p> <p>2.1 describe the Codes of Practice and organisational requirements for customer contact</p> <p>2.2 explain the customers' legal obligations for leakage on service pipes</p> <p>2.3 explain the organisational policies and legal obligations regarding leakage on service pipes</p> <p>2.4 describe methods for deciding responsibility for leakage, and repair methods</p> <p>2.5 explain the importance of checking that the customer has understood what their responsibility entails</p> <p>2.6 describe the various recording requirements for informing customers about gas network construction related issues</p>

Unit 319

Contribute to controlling costs against agreed budgets

UAN:	M/502/9707
Level:	3
Credit value:	3
GLH:	12
Aim:	This unit is designed for the candidate to demonstrate competence in ensuring costs and quality standards and systems are met by organising, planning or supervising operational activities undertaken by contractors and/or the organisation's employees.

This unit will apply to Network Construction Operations at Level 3 and is intended for Construction Supervisors.

Learning outcome
The learner must be able to: 1. contribute to controlling costs against agreed budgets
Assessment criteria
This means you can: 1.1 implement appropriate contract cost control systems (1) which are capable of providing early warning of problems 1.2 identify realistic opportunities for cost savings and recommend them to relevant individuals and organisations (2) 1.3 identify approved procedures and practices (3) which have the potential to save costs and make them available to relevant individuals and organisations (2) 1.4 identify variations to contract requirements and agree and implement appropriate remedial action with individuals and organisations (2)

Learning outcome
The learner must be able to: 2. Demonstrate knowledge and understanding of controlling costs against agreed budgets
Assessment criteria
This means you can: 2.1 Describe the types of cost and cost control systems (1)

- 2.2 Explain how to implement contract cost control systems
- 2.3 Describe cost saving systems and processes
- 2.4 State to whom savings should be recommended
- 2.5 Explain how to identify variations to contract requirements
- 2.6 State what types of remedial action you would be expected to take
- 2.7 Name the **individuals and organisations (2)** with whom remedial action should be agreed.

Range

(1) Cost control systems: Analysis of costs and budgets, company procedures, alternative options, cost benefits, recommendations

(2) Individuals and organisations: Customers, contractors, network operatives, colleagues, statutory bodies

(3) Approved procedures and practices: Environmental, organisational regulatory, statutory, emergency, operational, health, safety and environment, contingency plans, relevant company policies, approved materials and equipment and procedures, and risk assessments. In accordance with the industry's expectations of a Construction Supervisor, including the organisation of all aspects of site operations including planned and unplanned work

Unit 320

Control gas network activities against quality standards and systems

UAN:	J/506/0722
Level:	3
Credit value:	3
GLH:	17
Aim:	<p>This unit is designed for the candidate to demonstrate competence in ensuring costs and quality standards and systems are met and that professional relationships are established and maintained, by organising, planning or supervising operational activities undertaken by contractors and/or the organisation's employees.</p> <p>This unit will apply to Network Construction Operations at Level 3 and is intended for Construction Supervisors.</p>

Learning outcome
The learner must be able to: 1. control network activities against quality standards and systems
Assessment criteria
This means you can: 1.1 communicate procedures and practices to relevant individuals and organisations (1) 1.2 implement procedures and practices for inspection of work and recording outcomes 1.3 communicate responsibilities to individuals and organisations (1) for maintaining procedures and practices and regulatory requirements 1.4 check equipment, materials and products to ensure they meet approved procedures and practices 1.5 check installation and construction methods and procedures and the use of materials for compliance with approved procedures and practices 1.6 report non-compliance to relevant individuals and organisations (1) 1.7 implement and record corrective action for work which fails to meet approved procedures and practices 1.8 refer relevant amendments to approved procedures and practices to individuals and organisations (1)

- 1.9 record failures to respond to written requests to remedy unacceptable standards within a given time
- 1.10 notify **individuals and organisations (1)** of failures to respond to written requests to remedy unacceptable standards

Learning outcome

The learner must be able to:

- 2. Understand the controlling of network activities against quality standards and systems

Assessment criteria

This means you can:

- 2.1 state the organisational quality standards and systems, legal and statutory responsibilities related to **network activities (3)**
- 2.2 explain the recording requirements for controlling **network activities (3)** against quality standards and systems
- 2.3 state the **individuals and organisations (1)** who require specific information
- 2.4 explain the importance of checking routines and methods
- 2.5 describe the sources of information
- 2.6 describe the different communication methods
- 2.7 explain the types of investigation methods
- 2.8 describe the corrective actions for work failing to meet requirements
- 2.9 explain the importance of recording information.

Range

(1) Individuals and organisations: Customers, contractors, network operatives, colleagues, statutory bodies

(3) Network activities: Routine and non routine activities, response to changed circumstances, works that affect company employees and others

Unit 321

Establish and maintain professional relationships in network construction operations

UAN:	A/502/9709
Level:	3
Credit value:	3
GLH:	9
Aim:	This unit is designed for the candidate to demonstrate competence in ensuring costs and quality standards and systems are met and that professional relationships are established and maintained, by organising, planning or supervising operational activities undertaken by contractors and/or the organisation's employees.

This unit will apply to Network Construction Operations at Level 3 and is intended for Construction Supervisors.

Learning outcome
The learner must be able to: 1. Establish and maintain professional relationships
Assessment criteria
This means you can: 1.1 conduct and conclude liaison and communications with relevant individuals and organisations (1) in a manner which promotes goodwill and trust 1.2 establish and maintain constructive relationships with relevant individuals and organisations (1) within the implications and constraints (2) of other commitments 1.3 keep relevant individuals and organisations (1) informed in an appropriate level of detail about activities, progress, results, achievements and outcomes 1.4 offer advice and help to relevant individuals and organisations (1) involved in the network activity (3) 1.5 encourage relevant individuals and organisations (1) to ask questions, seek clarification and make comments at appropriate stages of network activity (3) 1.6 provide clear and accurate relevant information (4) about potential threats and opportunities, with an appropriate degree of urgency

- 1.7 present proposals for action at an appropriate time and with the right level of detail for the degree of change, expenditure and **risks (5)** involved
- 1.8 identify the reasons for rejection of proposals, and put forward viable alternatives, if appropriate
- 1.9 deal with differences of opinion in ways which minimise offence, and resolve conflicts in ways that maintain professional relationships

Learning outcome

The learner must be able to:

- 2. Demonstrate knowledge and understanding of establishing and maintaining professional relationships

Assessment criteria

This means you can:

- 2.1 Explain how to carry out liaison and communication for network construction operations
- 2.2 Explain how to establish professional and constructive relationships
- 2.3 State the importance of keeping people informed
- 2.4 Describe relevant communication skills and methods of varying communications
- 2.5 Explain how to present proposals for action
- 2.6 Explain how to deal with differences of opinion and resolve conflict

Range

(1) Individuals and organisations: Customers, contractors, network operatives, colleagues, statutory bodies

(2) Implications and constraints: Customer considerations, work details (including design, extent, location, time, duration, anticipated completion time), availability of resources, effect of weather/seasonal conditions

(3) Network activity: Routine and non routine activities, response to changed circumstances, works that affect company employees and others

(4) Relevant information: Sources of information, statutory and non statutory reports, company documentation, job instructions, client documentation (internal or external)

(5) Risks: Those which can be eliminated, reduced or controlled

Unit 322

Carry out operational planning for gas network construction operations

UAN:	F/506/0735
Level:	3
Credit value:	3
GLH:	20
Aim:	<p>This unit is designed for the candidate to demonstrate competence in ensuring costs and quality standards and systems are met and that professional relationships are established and maintained, by organising, planning or supervising operational activities undertaken by contractors and/or the organisation's employees.</p> <p>This unit will apply to Network Construction Operations at Level 3 and is intended for Construction Supervisors.</p>

Learning outcome
The learner must be able to: 1. Know opportunities to use techniques which maintain security of supply
Assessment criteria
This means you can: 1.1 identify the type and nature of the network activity to be carried out 1.2 identify the regulatory requirements which apply to the network activity and the implications and constraints they impose 1.3 identify the response levels for the use of techniques which maintain security of supply 1.4 describe the advantages and disadvantages of techniques for the network activities 1.5 describe the implications and constraints of different techniques which maintain security of supply

Learning outcome
The learner must be able to: 2. Carry out for operational activities for gas network construction
Assessment criteria

This means you can:

- 2.1 confirm schedules of network activities to be carried out within a specified period for specific network operatives
- 2.2 provide information to and seek information from appropriate individuals and organisations according to organisational and regulatory requirements
- 2.3 identify a suitable priority order for specified network activities, taking into account identified implications and constraints
- 2.4 ensure plan provides an acceptable level of flexibility to allow for the inclusion of specific unplanned network activities as they occur
- 2.5 check and alter the network status as required according to the network activities to be carried out
- 2.6 reassess the priority order in response to changing events
- 2.7 confirm relevant communications have been carried out with individuals and organisations according to organisational and regulatory requirements

Learning outcome

The learner must be able to:

3. Understand operational planning for network construction operations

Assessment criteria

This means you can:

- 3.1 describe different techniques, their application and associated cost benefits for different network activities
- 3.2 describe the effectiveness of different techniques
- 3.3 describe viability and cost effectiveness of techniques for different network activities for promoting:
 - a. maintenance of gas quality
 - b. continuity of supply
 - c. convenience for customers
 - d. service standards
- 3.4 explain what is meant by continuity of supply and issues related to adequacy
- 3.5 describe the coverage and detail of work schedules
- 3.6 state the organisational and regulatory requirements for communicating with individuals and organisations
- 3.7 describe how to prioritise effectively
- 3.8 explain what is considered to be an acceptable level of flexibility for operational plans
- 3.9 explain methods of making changes to network status, including:
 - a. what this should cover
 - b. who is responsible
 - c. the lines of informing and reporting

Unit 323

Ensure your own actions reduce risks to health and safety during network construction operations

UAN:	A/502/9693
Level:	3
Credit value:	6
GLH:	20
Aim:	

This unit is designed for the candidate to demonstrate competence in the health and safety duties required in the workplace. Fundamental to this unit is an understanding of the terms 'hazard' and 'risk', which have been defined on the following pages, and it is very important that they are understood before undertaking the unit.

This unit describes the competences required to ensure that the candidate's actions do not create any health and safety risks and risks are not ignored in the workplace and sensible action is taken to put things right, including reporting situations which pose a danger to people in the workplace and seeking advice.

This unit will apply to Network Construction Operations at Level 3 and is intended for Construction Supervisors.

Learning outcome
The learner must be able to: 1. Identify the hazards and evaluate the risks to the network activity.
Assessment criteria
This means you can: 1.1 Identify the people responsible for health and safety relevant to the network activity (1) 1.2 Identify which approved procedures and practices (2) are relevant to the network activity (1) 1.3 Identify hazards (4) in any part of your job role which could harm yourself or other persons

- 1.4 Evaluate which of the potentially harmful **approved procedures and practices (2)** and the potentially harmful aspects of the workplace are those with the **highest risk (3)** to you or to others
- 1.5 Report **hazards (4)** which present **risks (3)** to the persons responsible for health and safety in the workplace
- 1.6 Deal with **hazards (4)** and **risks (3)** in accordance with **approved procedures and practices (2)** and legal requirements.

Learning outcome

The learner must be able to:

2. Reduce the risks to health and safety within the network activity.

Assessment criteria

This means you can:

- 2.1 follow **approved procedures and practices (2)** in accordance with legal requirements
- 2.2 follow the most recent **approved procedures and practices (2)** for your job role
- 2.3 rectify those health and safety **risks (3)** within their capability and the scope of their job responsibilities
- 2.4 pass on to the appropriate people any suggestions for reducing **risks (3)** to health and safety within your job role
- 2.5 ensure personal conduct in the workplace does not endanger the health and safety of yourself and other individuals and organisations
- 2.6 follow suppliers' or manufacturers' instructions and **approved procedures and practices (2)** for the safe use of equipment, materials and products
- 2.7 report any differences between **approved procedures and practices (2)** and suppliers' or manufacturers' instructions as appropriate
- 2.8 ensure that personal protection at work:
 - a ensures the health and safety of yourself and others
 - b meets any legal duties
 - c follows **approved procedures and practices (2)**.

Range

(1) Network activity: Routine and non routine activities, response to changed circumstances, works that affect company employees and others

(2) Approved procedures and practices: Health, Safety and Environmental related to the individual and others, organisational, regulatory, statutory, emergency, operational, contingency plans, relevant company policies, relevant client policies (internal or external) approved materials and equipment and procedures, and risk assessments

(3) Risks: Those which can be eliminated, reduced or controlled

(4) Types of hazards: Restrictions to access and egress, mis-use of tools and equipment, faulty equipment, hazardous substances, hygiene, interference with and from adjacent activities and other utility

apparatus, obstructions and exposed apparatus, structures and services.

Learning outcome

The learner must be able to:

3. Understand how to reduce the risks to health and safety within the network activity

Assessment criteria

This means you can:

- 3.1 describe the legal requirements for health and safety in the workplace under current Health and Safety legislation
- 3.2 describe your duties for health and safety required under any specific legislation covering their job role
- 3.3 describe the types of hazards that may exist in the workplace
- 3.4 describe any particular health and safety risks relating to your job role and how to eliminate or reduce them
- 3.5 explain the importance of remaining alert to the presence of hazards in the workplace throughout work activities
- 3.6 explain the importance of dealing with or promptly reporting risks and hazards
- 3.7 describe the requirements and guidance that should be followed on the precaution to be taken to reduce risks to health and safety
- 3.8 describe what is classified as a 'high risk' and a 'low risk'
- 3.9 describe the specific workplace policies covering your job role
- 3.10 outline the suppliers' and manufacturers' instructions for the safe use of equipment, materials and products
- 3.11 describe the safe working practices relevant to your job role
- 3.12 explain the importance of personal protection in maintaining health and safety in the workplace
- 3.13 explain the importance of personal conduct in maintaining the health and safety of yourself and others
- 3.14 define the scope of your responsibility for rectifying risks and hazards
- 3.15 state the workplace procedures for handling risks that you cannot address.

Unit 324

Protect the environment during gas network construction activities

UAN:	H/506/0727
Level:	3
Credit value:	3
GLH:	13
Aim:	The aim of the unit is to provide the learner with the knowledge and understanding in compliance with legislation, regulation, policies, procedures, instructions and guidance in the gas industry, specifically within the gas intermediate pressure range sector in construction works

Learning outcome
The learner must be able to: 1. Identify the risks to the environment arising as a result of network activities.
Assessment criteria
This means you can: 1.1 identify the individuals and organisations in the workplace responsible for environmental matters 1.2 use up-to-date and environmentally-friendly approved procedures and practices which are relevant to the workplace 1.3 identify any current approved procedures and practices in job roles which could cause harm to the environment 1.4 identify equipment, materials and products used in job roles which could cause harm to the environment 1.5 report any differences between legal and approved procedures and practices and the actual use of materials or products hazardous to the environment 1.6 report hazards which present high risks to the persons responsible for environmental matters 1.7 report environment awareness training needs to individuals and organisations.

Learning outcome
The learner must be able to: 2. Minimise risks to the environment arising as a result of network activities
Assessment criteria
<p>This means you can:</p> <ul style="list-style-type: none"> 2.1 follow up-to-date legal requirements and approved procedures and practices for job roles 2.2 control those environmental hazards within scope of job role 2.3 report risks to the environment that cannot be eliminated or controlled 2.4 identify solutions for limiting risks to the environment 2.5 follow suppliers', manufacturers' and approved procedures and practices for the safe use and storage of equipment, materials and products 2.6 follow approved procedures and practices for <ul style="list-style-type: none"> (a) handling equipment, materials and products hazardous to the environment (b) disposing of equipment, materials and products hazardous to the environment

Learning outcome
The learner must be able to: 3. Understand how to minimise risks to the environment from network activities
Assessment criteria
<p>This means you can:</p> <ul style="list-style-type: none"> 3.1 identify the responsible persons to whom to report environmental matters 3.2 describe workplace policies, precautions and procedures relating to controlling risks to the environment 3.3 state the specific workplace environmental procedures covering job roles 3.4 describe responsibilities for materials and equipment in work activities that are hazardous to the environment 3.5 describe the relevant aspects of the Environmental Protection Act and relevant regulations which will affect the workplace 3.6 describe duties for the environment as defined by any specific legislation covering job roles 3.7 describe risks to the environment that may exist in the workplace and job roles 3.8 explain methods of using resources and materials effectively and efficiently 3.9 explain the importance of remaining alert to the presence of hazards to the environment in the workplace 3.10 explain the importance of dealing with or promptly reporting risks to the environment 3.11 state the responsibilities of staff for controlling hazards to the environment 3.12 explain the workplace requirements for handling hazards to the environment

- 3.13 describe substances and processes in the workplace that are categorised as hazardous to the environment
- 3.14 describe the correct handling procedures for materials hazardous to the environment
- 3.15 describe the working practices for own job role that reduces risks to the environment
- 3.16 explain suppliers', manufacturers' and workplace instructions for the use of equipment, materials and products hazardous to the environment

UAN:	J/502/9695
Level:	3
Credit value:	3
GLH:	14
Aim:	<p>This unit is designed for the candidate to demonstrate competence in monitoring and locating and avoiding supply apparatus and sub-structures by using appropriate search and detection methods, keeping updated records, identifying and avoiding risks of damage to services and danger to personnel, and following safe work practices. Supply apparatus in the context of this unit relates to supply apparatus for utilities and other agencies.</p> <p>This unit will apply to Network Construction Operations at Level 3 and is intended for Construction Supervisors.</p>

Learning outcome
<p>The learner must be able to:</p> <p>4. Identify, mark and confirm location of supply apparatus and sub-structures</p>
Assessment criteria
<p>This means you can:</p> <p>4.1 Determine the extent of the work site is identified from the work instructions and plans</p> <p>4.2 Determine the position and type of supply apparatus and sub-structures (1) which are accurately identified from records, surface evidence and search techniques (2), and marked on the work site in accordance with work instructions and relevant approved procedures and practices (3)</p> <p>4.3 Ensure any risks of damage to supply apparatus and sub-structures (1) are identified and clearly marked in accordance with relevant approved procedures and practices (3)</p> <p>4.4 Confirm the positions and types of supply apparatus and sub-structures (1) are recorded in accordance with approved procedures and practices (3)</p> <p>4.5 Confirm that deviations in the position of equipment and identification of other structures are reported in accordance with approved procedures and practices (3)</p>

4.6	Ensure the details of position and type of supply apparatus and sub-structures (1) are communicated to individuals and organisations (5) in accordance with approved procedures and practices (3)
4.7	Refer any problems and conditions outside the responsibility of the job holder to an authorised person
4.8	Ensure the work is carried out to approved procedures and practices (3)
4.9	Ensure all work activities are managed, supervised and coordinated in multiple situations (4) with the responsibility for several jobs and/or locations concurrently, dealing with a number of individuals and organisations (5)

Learning outcome	
The learner must be able to:	
5. Maintain the safety and integrity of supply apparatus and sub-structures	
Assessment criteria	
This means you can:	
5.1	ensure the position and condition of supply apparatus and sub-structures (1) within the work site are maintained in accordance with their specification and relevant approved procedures and practices (3)
5.2	ensure that working practices within the work site avoid damage to supply apparatus and sub-structures (1) , any damage is identified and reported promptly to the authorised person
5.3	ensure that exposed supply apparatus and sub-structures (1) are supported correctly, safely and securely, relevant to their specification and in accordance with approved procedures and practices (3)
5.4	ensure that appropriate precautions are taken to protect individuals and organisations (5) and equipment from the consequent effects of damage to supply apparatus and sub-structures (1) in accordance with approved procedures and practices (3)
5.5	ensure that damage to supply apparatus and sub-structures (1) are reported promptly to the appropriate authority and the area made safe, in accordance with approved procedures and practices (3)
5.6	ensure that any problems and conditions outside the responsibility of the job holder are referred to individuals and organisations (5)
5.7	ensure work is carried out to approved procedures and practices (3)
5.8	ensure all work activities are managed, supervised and coordinated in multiple situations (4) with the responsibility for several jobs or locations concurrently, dealing with a number of individuals and organisations (5)

Range
(1) Supply apparatus and sub-structures: This will include the supply apparatus for utilities and other agencies, above ground services, built

structures, the natural environment (e.g. foundations, tree roots, natural watercourses)

(2) Search techniques: Electronic location equipment, trial holes, visual, use of drawings

(3) Approved procedures and practices: Health, Safety and Environmental related to the individual and others, organisational, regulatory, statutory, emergency, operational, contingency plans, relevant company policies, relevant client policies (internal or external) approved materials and equipment and procedures, and risk assessments

(4) Multiple situations: More than one team, more than one operation

(5) Individuals and organisations: Customers, contractors, network operatives, colleagues, statutory bodies

Learning outcome

The learner must be able to:

6. Understand the importance of maintaining the safety and integrity of supply apparatus and sub-structures

Assessment criteria

This means you can:

- 6.1 describe the typical locations and depths of the usual range of underground **supply apparatus and sub-structures**
- 6.2 state the different methods of marking underground supply apparatus
- 6.3 state the types of hazard associated with different supplies and actions to take in the case of damage
- 6.4 list the people or organisations to be notified in the case of damage to supply apparatus or sub-structures
- 6.5 describe the methods of marking out for excavation work to ensure the accurate location of the required excavation
- 6.6 explain the implications of incorrect marking out of the excavations, including
 - (a) Costs
 - (b) Loss of time
 - (c) Material wastage
- 6.7 explain the importance of protecting supply apparatus exposed during excavation work
- 6.8 describe the methods of providing appropriate temporary and permanent support for supply apparatus exposed during site excavations
- 6.9 state the relevant legislation governing work in excavations
- 6.10 state the main sources of legislation relating to highways operations in the proximity of other supply apparatus
- 6.11 state the regulations governing the location of supply apparatus where this exposes other services
- 6.12 describe the methods of visually locating and identifying underground **supply apparatus and sub-structures**, including markers, signs and features, and the use of existing records

- 6.13 describe the operation and method of use of electronic detection equipment
- 6.14 describe the safe procedures for handling the range of location equipment
- 6.15 explain how to interpret the results of electronic detection equipment readings
- 6.16 state the possible effects of external influences on electronic detection equipment readings
- 6.17 describe the circumstances in which it would be appropriate to use trial holes to locate underground supplies and sub-structures
- 6.18 explain the main **approved procedures and practices** for locating and avoiding **supply apparatus and sub-structures**
- 6.19 state the roles and responsibilities of the various organisations and cross sectors involved in the work activity
- 6.20 explain how to liaise effectively with the various organisations and cross sectors involved in the work activity
- 6.21 explain the main responsibilities of the employer and employee under the Health and Safety at Work Act
- 6.22 describe the safe procedures for handling hazardous materials
- 6.23 explain their workplace accident recording and reporting procedures
- 6.24 explain the key physical properties of each of the supply pipeline or components, including:
 - (a) size (diameter)
 - (b) colour
 - (c) material and its resistance to impact from excavation activities
 - (d) methods of identification of **supply apparatus and sub-structures** for utilities and other agencies
- 6.25 describe the physical properties of the supply being carried by different types of supply apparatus, including:
 - (a) ignition characteristics
 - (b) density relative to air
 - (c) electrocution
- 6.26 explain the risks associated with maintaining the safety and integrity of different types of **supply apparatus and sub-structures**
- 6.27 describe the possible effects of damage to the different types of **supply apparatus and sub-structures**
- 6.28 explain how damage to the supply apparatus could cause:
 - (a) personal danger to the health or life of the operatives
 - (b) danger to others on site
 - (c) damage to the environment
 - (d) delay to job progress
 - (e) additional job costs in repair
- 6.29 explain how regulations identified in the Street Works Act apply to the location and avoidance of **supply apparatus and sub-structures**
- 6.30 describe the possible outcomes of leaving exposed **supply apparatus and sub-structures** unsupported, including supplies for utilities and other agencies
- 6.31 state the main requirements of legislation and regulations relating to the precautions to be observed during supply location

- 6.32 describe the site management structures for highways operations
- 6.33 explain the importance of referring to appropriate persons, problems that are outside their responsibility
- 6.34 state the procedures for reporting and recording job progress, problems and deviations to work programmes
- 6.35 describe the safe procedures for handling the range of equipment used in maintaining the integrity of **supply apparatus and sub-structures**
- 6.36 describe the personal protective equipment to be used during location and avoidance of **supply apparatus and sub-structures**, and how to use it correctly.

Range

(1) Supply apparatus and sub-structures: This will include the supply apparatus for utilities and other agencies, above ground services, built structures, the natural environment (e.g. foundations, tree roots, natural watercourses)

(2) Approved procedures and practices: Health, Safety and Environmental related to the individual and others, organisational, regulatory, statutory, emergency, operational, contingency plans, relevant company policies, relevant client policies (internal or external) approved materials and equipment and procedures, and risk assessments

(3) Multiple situations: More than one team, more than one operation.

(4) Individuals and organisations: Customers, contractors, network operatives, colleagues, statutory bodies

UAN:	L/502/9696
Level:	3
Credit value:	4
GLH:	21
Aim:	This unit is designed for the candidate to demonstrate competence in monitoring the signing, lighting and guarding of a work site.

This unit will apply to Network Construction Operations at Level 3 and is intended for Construction Supervisors.

Learning outcome
The learner must be able to: 1. Monitor a work site survey.
Assessment criteria
<p>This means you can:</p> <ol style="list-style-type: none"> 1.1 check that the planned provision of footways, traffic lanes and safety zones determined by the site survey meets with the requirements of the site location (1) and approved procedures and practices (2) 1.2 check that the planned provision of footways, traffic lanes and safety zones determined by the site survey meets the requirements of individuals and organisations (3) with special needs 1.3 check that the planned provision of footways, traffic lanes and safety zones determined by the site survey minimises disruption to traffic and provides for the safe passage of pedestrians 1.4 check that the planned provision for vehicles and plant within the confines of the working area provides for adequate coverage and safety for persons and vehicles in the vicinity 1.5 ensure that safe working practices are identified in accordance with current approved procedures and practices (2) 1.6 identify problems with planned provision arising from the work site survey and demonstrate that you know the appropriate remedial action to be taken 1.7 carry out an on-site risk (4) assessment to ensure that a safe system of working is in place in respect of signing, lighting and guarding and to ensure that provision is made to control any types of hazards (5) identified

Range
<p>(1) Site location: Public highway, private property</p> <p>(2) Approved procedures and practices: Health, Safety and Environmental related to the individual and others, organisational, regulatory, statutory, emergency, operational, contingency plans, relevant company policies, relevant client policies (internal or external) approved materials and equipment and procedures, and risk assessments</p> <p>(3) Individuals and organisations: Customers, contractors, network operatives, colleagues, statutory bodies</p> <p>(4) Risks: Those which can be eliminated, reduced or remain constant</p> <p>(5) Types of hazards: Restrictions to access and egress, mis-use of tools and equipment, faulty equipment, hazardous substances, hygiene, interference with and from adjacent activities and other utility apparatus, obstructions and exposed apparatus, structures and services</p>

Learning outcome
The learner must be able to:
2. Monitor site safety
Assessment criteria
<p>This means you can:</p> <p>2.1 monitor network activity (1) in accordance with approved procedures and practices (2)</p> <p>2.2 assess site conditions in accordance with approved procedures and practices (2)</p> <p>2.3 ensure that checks have been carried out to ensure that appropriate equipment, materials and products (3) is available and fit for purpose</p> <p>2.4 ensure that the appropriate personal protective equipment is being used on site</p> <p>2.5 ensure that safe working practices are followed in accordance with approved procedures and practices (2)</p> <p>2.6 ensure that an on-site risk assessment has been carried out to ensure a safe system of working in respect of signing, lighting and guarding</p> <p>2.7 identify risks (4) to site safety, and demonstrate that they know the appropriate remedial action to be taken</p>

Range
<p>(1) Network activity: Routine and non routine activities, response to changed circumstances, works that affect company employees and others</p> <p>(2) Approved procedures and practices: Health, Safety and Environmental related to the individual and others, organisational, regulatory, statutory, emergency, operational, contingency plans, relevant company policies, relevant client policies (internal or external)</p>

approved materials and equipment and procedures, and risk assessments

(3) Equipment, materials and products: Selection of vehicles, tools, ancillary equipment and machines, valves and fittings, pipes and consumables, health, safety and environmental protection equipment, hazardous and non hazardous materials

(4) Risks: Those which can be eliminated, reduced or remain constant

Learning outcome

The learner must be able to:

3. Monitor action taken to protect pedestrians, vehicular traffic and site personnel

Assessment criteria

This means you can:

- 3.1 ensure that personal protective equipment selected and used is checked for suitability to the **network activity (1)**
- 3.2 assess the provision of footways, traffic lanes and safety zones against:
 - (a) the requirements of the site location
 - (b) the safety and minimum disruption of vehicular traffic
 - (c) the safety and minimum disruption of pedestrians
 - (d) the requirements of people with special needs
- 3.3 assess the provision for the control of movement of pedestrians, vehicles and plant within the confines of the working area to minimise delay and inconvenience and make adequate safety provisions
- 3.4 ensure that **equipment, materials and products (3)** selected are checked against the requirements of the location and any special needs
- 3.5 monitor the inspection of **equipment, materials and products (3)** prior to use in line with **approved procedures and practices (4)**
- 3.6 monitor the positioning of **equipment, materials and products (3)** in accordance with the sequence specified
- 3.7 monitor the removal of **equipment, materials and products (3)** in accordance with the sequence specified
- 3.8 ensure that safe working practices are followed, to meet current **approved procedures and practices (4)**
- 3.9 identify problems with the action taken to protect pedestrians, vehicular traffic and site personnel and demonstrate that they know the appropriate remedial action to be taken

Range

(1) Network activity: Routine and non routine activities, response to changed circumstances, works that affect company employees and others

<p>(3) Equipment, materials and products: Selection of vehicles, tools, ancillary equipment and machines, valves and fittings, pipes and consumables, health, safety and environmental protection equipment, hazardous and non hazardous materials</p> <p>(4) Approved procedures and practices: Health, Safety and Environmental related to the individual and others, organisational, regulatory, statutory, emergency, operational, contingency plans, relevant company policies, relevant client policies (internal or external) approved materials and equipment and procedures, and risk assessments</p>
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Learning outcome
The learner must be able to:
4. Monitor provision of portable traffic signals
Assessment criteria
<p>This means you can:</p> <p>4.1 monitor the inspection and testing of signals for correct procedures and correct functioning of equipment, materials and products (1)</p> <p>4.2 monitor the positioning of signals in the correct sequence, and according to the requirements of the site location</p> <p>4.3 monitor the adjustment of signal controls against the traffic conditions prevailing at the time</p> <p>4.4 monitor the dismantling and removal of signals in accordance with approved procedures and practices (2)</p> <p>4.5 ensure that safe working practices are followed in accordance with approved procedures and practices (2)</p> <p>4.6 identify problems with the provision of portable traffic signals and the appropriate remedial action to be taken.</p>

Range
<p>(1) Equipment, materials and products: Selection of vehicles, tools, ancillary equipment and machines, valves and fittings, pipes and consumables, health, safety and environmental protection equipment, hazardous and non hazardous materials</p> <p>(2) Approved procedures and practices: Health, Safety and Environmental related to the individual and others, organisational, regulatory, statutory, emergency, operational, contingency plans, relevant company policies, relevant client policies (internal or external) approved materials and equipment and procedures, and risk assessments</p>

Learning outcome
The learner must be able to:
5. Demonstrate knowledge and understanding of monitoring signing, lighting and guarding.
Assessment criteria
This means you can:

- 5.1 state the requirements of the Code of Practice for surveying the work site
- 5.2 state the Health and Safety requirements for:
 - (a) surveying the work site
 - (b) site operations
 - (c) particular site conditions
- 5.3 explain how to plan provision of footways, traffic lanes and safety zones to meet the **requirements of the site location (1)**
- 5.4 describe how to plan provision of footways, traffic lanes and safety zones to meet the requirements of people with special needs
- 5.5 explain how to minimise disruption to traffic and ensure the safe passage of pedestrians when planning provision of footways, traffic lanes and safety zones
- 5.6 explain how to plan provision for vehicles and plant within the confines of the working area to ensure adequate coverage and safety for persons and vehicles in the vicinity
- 5.7 describe safe working practices for signing, lighting and guarding activities
- 5.8 give examples of problems which occur with planned provision arising from a work site survey and the appropriate remedial action to take
- 5.9 explain the purpose of an on-site risk assessment
- 5.10 describe the appropriate safety equipment to use during site operations, and how to ensure that it is fit for purpose
- 5.11 describe the personal protective equipment to be used to ensure safety of site personnel for the prescribed operations
- 5.12 describe the safe working practices for:
 - (a) signing, lighting and guarding activities
 - (b) site operations
 - (c) providing portable traffic signals
- 5.13 give examples of potential risks to site safety, and the appropriate remedial action to take
- 5.14 list the factors governing the provision of footways, traffic lanes and safety zones and the circumstances under which it is necessary to liaise with the highway authority
- 5.15 describe the safety implications of the site location for pedestrians and vehicular traffic and the action to take to provide for this (including traffic management measures)
- 5.16 describe the requirements of those with special needs and how to provide for them
- 5.17 describe how to minimise disruption to pedestrians and vehicular traffic
- 5.18 explain how to make adequate safety provision for pedestrians, vehicles and plant within the confines of the working area
- 5.19 list the equipment needed to meet the **requirements of the site location (1)** and any special needs
- 5.20 explain how to ensure that equipment is fit for purpose
- 5.21 explain the specified sequence for the positioning and removal of equipment
- 5.22 give examples of problems that occur with the protection of pedestrians, vehicular traffic and site personnel, and the appropriate remedial action to take

- 5.23 describe the procedures for inspecting and testing traffic signals for correct operation
- 5.24 explain how the requirements of the site location affect the positioning of traffic signals and the circumstances under which it is necessary to consult the highway authority
- 5.25 describe the correct sequence for positioning signals
- 5.26 explain how the prevailing traffic conditions affect the adjustment of signal controls
- 5.27 describe the requirements of the Code of Practice for dismantling and removing portable traffic signals
- 5.28 describe the problems which occur with the provision of portable traffic signals and the appropriate remedial action to take

Unit 327

Monitor the installation and construction process for network construction operations

UAN:	D/502/9699
Level:	3
Credit value:	4
GLH:	14
Aim:	

This unit is designed for the candidate to demonstrate the effectiveness of the installation and construction process by monitoring resource use, installation and construction methods and procedures, and outputs achieved, against relevant specifications and ensuring compliance with relevant regulations and guidelines. The candidate will need to identify any variations from agreed plans and schedules and/or any problems with the installation and construction process and ensure that corrective action is taken promptly.

The candidate will need knowledge of installation and construction principles and processes and both general and discipline-specific engineering principles and processes. The candidate will need to know how to interpret specifications and be familiar with health, safety, environmental and other legislative and regulatory frameworks. The candidate will also need sound knowledge of organisational procedures and systems and problem-solving methods, as well as a good grasp of the principles and systems behind effective quality assurance and resource management.

This unit will apply to Network Construction Operations at Level 3 and is intended for Construction Supervisors.

Learning outcome
<p>The learner must be able to:</p> <ol style="list-style-type: none"> 1. Monitor the installation and construction process for network construction operations
Assessment criteria
<p>This means you can:</p> <ol style="list-style-type: none"> 1.1 monitor the installation and construction methods and procedures (1) at suitable opportunities 1.2 monitor the supply and use of resources (2) to ensure that they are effectively used 1.3 confirm that the equipment, materials and products (3) used during the installation and construction methods and procedures (1) comply with approved procedures and practices (4) 1.4 confirm that suitable installation and construction methods and procedures (1) have been used 1.5 identify any variations from agreed plans and schedules 1.6 ensure that any problems with the installation and construction methods and procedures (1) are identified and solved promptly 1.7 ensure that the outputs of the installation and construction methods and procedures (1) comply with approved procedures and practices (4) 1.8 ensure that the installation and construction methods and procedures (1) complies with all relevant approved procedures and practices (4)

Learning outcome
<p>The learner must be able to:</p> <ol style="list-style-type: none"> 2. Demonstrate knowledge and understanding of monitoring the installation and construction process.
Assessment criteria
<p>This means you can:</p> <ol style="list-style-type: none"> 2.1 Explain when monitoring should occur, and how should it be undertaken 2.2 Describe the installation and construction methods and procedures (1) that should be used 2.3 Explain the potential variations from plans and schedules that might occur during installation and construction 2.4 State the type of problems that could occur 2.5 Explain why it is important to solve a problem quickly 2.6 Describe how to check the outputs of the installation and construction process 2.7 Explain how to obtain information on resources 2.8 State what resources are necessary 2.9 Describe what resources are available 2.10 State which regulations and guidelines are relevant to the activity 2.11 Explain how to obtain information on regulations and guidelines.

Range
<p>(1) Installation and construction methods and procedures: Including work by self and others, involving site, equipment, materials and other resources. Assembly of fittings, pipework and ancillaries positioning and jointing including connections in accordance with industry standards</p> <p>(2) Resources: Plant, equipment, materials, labour, consumables</p> <p>(3) Equipment, materials and products: Selection of vehicles, tools, ancillary equipment and machines, valves and fittings, pipes and consumables, health, safety and environmental protection equipment, hazardous and non hazardous materials</p> <p>(4) Approved procedures and practices: Health, Safety and Environmental related to the individual and others, organisational, regulatory, statutory, emergency, operational, contingency plans, relevant company policies, relevant client policies (internal or external) approved materials and equipment and procedures, and risk assessments</p>

Unit 328

Carry out risk assessments for gas network construction operations

UAN:	H/506/0713
Level:	3
Credit value:	2
GLH:	9
Aim:	<p>This unit is designed for the candidate to demonstrate competence in ensuring costs and quality standards and systems are met and that professional relationships are established and maintained, by organising, planning or supervising operational activities undertaken by contractors and/or the organisation's employees.</p> <p>This unit will apply to Network Construction Operations at Level 3 and is intended for Construction Supervisors.</p>

Learning outcome
The learner must be able to: 1. Identify network activities and related risks.
Assessment criteria
This means you can: 1.1 identify relevant information about network activities to be carried out 1.2 identify procedures and practices for carrying out risk assessments for the network activities 1.3 confirm the relevance and implications of procedures and practices within risk assessments for network activities 1.4 check the level of compliance that network activities provide to meet relevant regulatory requirements 1.5 select methods of identifying hazards related to network activities 1.6 identify hazards that could affect gas quality and continuity of supply 1.7 record hazards in the correct format, meeting regulatory requirements.

Learning outcome
The learner must be able to: 2. Assess the level of risk for specified activities.
Assessment criteria
<p>This means you can:</p> <ul style="list-style-type: none"> 2.1 confirm why, where and how risk assessments will be carried out 2.2 identify limitations when carrying out risk assessments 2.3 ensure risk assessments are related to the type of network activities 2.4 identify how risks can be safely managed 2.5 identify courses of action where risk assessments highlight deficiencies in relevant information 2.6 record and store risk assessment details and recommendations in correct format relating to organisational requirements.

Learning outcome
The learner must be able to: 3. Understand risk assessments for gas network construction operations.
Assessment criteria
<p>This means you can:</p> <ul style="list-style-type: none"> 3.1 describe the organisational requirements for different types of network activities, including: <ul style="list-style-type: none"> a. re-zoning b. making connections c. repairs d. replacements e. installation f. maintenance g. re-commissioning 3.2 describe processes of accessing information required to carry out risk assessments 3.3 describe the organisational requirements for risk assessments 3.4 explain why procedures may not cover all network activities and when a new risk assessment may need to be carried out 3.5 explain what is meant by continuity of supply and issues related to adequacy 3.6 state the regulatory requirements for gas quality and continuity of supply 3.7 explain what constitutes a hazard and the implications of different hazards on different network activities 3.8 describe types of reporting procedures and recording requirements for carrying out risk assessments 3.9 explain how to carry out risk assessments for operational activities, including: <ul style="list-style-type: none"> a. re-zoning b. making connections c. repairs d. replacements e. installation

<ul style="list-style-type: none"> f. maintenance g. re-commissioning
3.10 identify persons to provide advice and guidance to enable risk assessments to be carried out effectively
3.11 describe the options for managing risks (5)
3.12 explain actions to take when insufficient information is available
3.13 describe recording and storage requirements for risk assessments.

Range
(5) Risks: Those which can be eliminated, reduced or controlled

Unit 329

Develop productive working relationships with colleagues in the energy and utilities sector

UAN:	H/504/7668
Level:	3
Credit value:	7
GLH:	15
Aim:	<p>This standard is about developing working relationships with colleagues working within the energy and utilities sector and within other organisations that are productive in terms of supporting and delivering your work and that of the overall organisation.</p> <p>The standard is recommended for team leaders and first line managers</p>

Learning outcome
<p>The learner must be able to:</p> <ol style="list-style-type: none">1. Develop productive working relationships with colleagues in the energy and utilities sector.
Assessment criteria
<p>This means you can:</p> <ol style="list-style-type: none">1.1 establish working relationships with all colleagues who are relevant to the work being carried out1.2 recognise and agree the roles and responsibilities of colleagues, particularly in situations of matrix management and the managers' requirements1.3 take account of the priorities, expectations and authority of colleagues in decisions and actions1.4 create an environment of trust and mutual respect where you have no authority, or shared authority, over those you are working with1.5 take account of situations and issues from your colleague's perspective and provide support where necessary to move things forward1.6 fulfil agreements with colleagues1.7 promptly advise colleagues of any difficulties, or where it will be impossible to fulfil agreements

- 1.8 identify and resolve conflicts of interest and disagreements with colleagues in a way that minimises damage to the work being carried out
- 1.9 exchange information and resources with colleagues to ensure that all parties can work effectively
- 1.10 provide feedback to colleagues on their performance and seek feedback on your own performance to identify areas for improvement.

Learning outcome

The learner must be able to:

- 2. Use general knowledge and understanding to develop productive working relationships with colleagues in the energy and utilities sector.

Assessment criteria

This means you can:

- 2.1 Explain the benefits of developing productive working relationships with colleagues
- 2.2 Explain the importance of creating an environment of trust and mutual respect where you have no authority, or shared authority, over those you are working with
- 2.3 Explain the importance of understanding difficult situations and issues from your colleagues' perspective and providing support, where necessary, to move things forward
- 2.4 Describe the principles of effective communication and how to apply them in order to communicate effectively with colleagues
- 2.5 Describe how to identify disagreements with colleagues and the techniques that can be used to resolve them
- 2.6 Describe how to identify conflicts of interest with colleagues and the measures that can be used to manage or remove them
- 2.7 Explain how to take account of diversity and inclusion issues when developing working relationships with colleagues
- 2.8 Explain the importance of exchanging information and resources with colleagues
- 2.9 Explain how to obtain and make use of feedback on your performance from colleagues
- 2.10 Describe how to provide colleagues with useful feedback on their performance.

Learning outcome

The learner must be able to:

- 3. Know and understand how to develop productive working relationships in the energy and utilities sector using sector specific knowledge.

Assessment criteria

This means you can:

- 3.1 Describe the regulations and codes of practice that apply in your industry within the energy and utilities sector
- 3.2 Describe the standards of behaviour and performance in your industry within the energy and utilities sector

3.3 Describe the working culture of your industry within the energy and utilities sector.

Learning outcome

The learner must be able to:

4. Know and understand how to develop productive working relationships in the energy and utilities sector using context specific knowledge.

Assessment criteria

This means you can:

- 4.1 Describe the current work being carried out, and planned future work
- 4.2 Identify the colleagues who are relevant to the work being carried out, and describe their work roles and responsibilities
- 4.3 Describe the decision-making processes that are used in your organisation
- 4.4 Describe the line management responsibilities and relationship within your organisation
- 4.5 Describe your organisation's values and culture
- 4.6 Describe the power, influence and politics within your organisation
- 4.7 Describe the standards of behaviour and performance that are expected within your organisation
- 4.8 Describe the information and resources that different colleagues might need.

Unit 330

Monitor excavation in the highway

UAN:	R/502/9697
Level:	3
Credit value:	5
GLH:	17
Aim:	This unit is designed for the candidate to demonstrate competence in monitoring excavation work in the highway.

This unit will apply to Network Construction Operations at Level 3 and is intended for Construction Supervisors.

Learning outcome
The learner must be able to: 1. Monitor excavation work in the highway.
Assessment criteria
This means you can: 1.1 ensure that the type of footway, carriageway and pavement structure is correctly identified prior to excavation 1.2 ensure that the equipment, materials and products (1) selected to carry out and support the excavation is suitable to the operation in accordance with approved procedures and practices (2) 1.3 ensure that the site is inspected to identify areas of high risk (3) for excavation activities 1.4 check that appropriate caution is exercised when excavating in areas of high risk (3) 1.5 ensure that materials are excavated at all construction levels according to approved procedures and practices (2) 1.6 monitor the working methods used for the excavation to ensure that they minimise subsequent reinstatement 1.7 check that safe working practices are followed during excavation activities that are in accordance with approved procedures and practices (2) 1.8 identify any problems with the excavation work being carried out and demonstrate that you know the appropriate remedial action to be taken.

Learning outcome
<p>The learner must be able to:</p> <p>2. Monitor action taken to avoid damage to underground apparatus during excavation.</p>
Assessment criteria
<p>This means you can:</p> <p>2.1 ensure that utilities' apparatus is correctly located and marked</p> <p>2.2 ensure that exposed utilities' apparatus is correctly identified</p> <p>2.3 ensure that risks (3) of damage to utilities' apparatus during excavation activities are identified and precautions are taken to minimise them</p> <p>2.4 identify damage to utilities' apparatus and demonstrate that they know the appropriate remedial action to be taken</p> <p>2.5 ensure that exposed utilities' apparatus is supported safely, using the appropriate equipment, materials and products (1)</p> <p>2.6 ensure that if a requirement exists for safe trench sidewall support, it is identified and that the approved procedures and practices (2) are consulted for guidance on the action to be taken</p> <p>2.7 ensure that safe working practices are followed in accordance with approved procedures and practices (2).</p>

Range
<p>(1) Equipment, materials and products: Selection of vehicles, tools, ancillary equipment and machines, valves and fittings, pipes and consumables, health, safety and environmental protection equipment, hazardous and non hazardous materials</p> <p>(2) Approved procedures and practices: Health, Safety and Environmental related to the individual and others, organisational, regulatory, statutory, emergency, operational, contingency plans, relevant company policies, relevant client policies (internal or external) approved materials and equipment and procedures, and risk assessments</p> <p>(3) Risks: Those which can be eliminated, reduced or remain constant</p>

Learning outcome
<p>The learner must be able to:</p> <p>3. Monitor selection, disposal and storage for re-use of excavated materials.</p>
Assessment criteria
<p>This means you can:</p> <p>3.1 ensure that excavated materials selected for re-use are checked against the range of backfill, sub-base and modular materials permitted in the current specification</p> <p>3.2 ensure that excavated materials selected for disposal have been checked and confirmed as unsuitable for re-use</p> <p>3.3 ensure that the storage arrangements made for excavated materials to be re-used are safe and meet the requirements of approved procedures and practices (1)</p>

- 3.4 ensure that safe temporary storage is provided for excavated materials that are unsuitable for re-use and that they are disposed of safely, in accordance with **approved procedures and practices (1)**
- 3.5 ensure that safe working practices are followed, that are in accordance with the **approved procedures and practices (1)**
- 3.6 identify any problems with the selection and storage of excavated materials for re-use and the disposal of excavated materials unsuitable for re-use and confirm the appropriate remedial action to resolve them.

Learning outcome
The learner must be able to: 4. Monitor site safety.
Assessment criteria
<p>This means you can:</p> <ul style="list-style-type: none"> 4.1 monitor site operations in accordance with approved procedures and practices (1) 4.2 assess site conditions in accordance with approved procedures and practices (1) 4.3 ensure that checks have been carried out to ensure that appropriate safety equipment is available and is fit for purpose 4.4 ensure that safe working practices are followed on-site throughout the excavation operation, that are in accordance with approved procedures and practices (1) 4.5 identify risks (2) to site safety and demonstrate that they know the appropriate remedial action to be taken 4.6 the methods of supporting exposed utilities' apparatus safely and the appropriate equipment to use 4.7 the circumstances in which trench sidewall support is required, and where to find the guidelines for its provision 4.8 safe working practices for locating and avoiding underground apparatus and for excavating in the highway

Range
<p>(1) Approved procedures and practices: Health, Safety and Environmental related to the individual and others, organisational, regulatory, statutory, emergency, operational, contingency plans, relevant company policies, relevant client policies (internal or external) approved materials and equipment and procedures, and risk assessments</p> <p>(2) Risks: Those which can be eliminated, reduced or remain constant</p>

Learning outcome
<p>The learner must be able to:</p> <p>5. Demonstrate knowledge and understanding of monitoring excavation in the highway.</p>
Assessment criteria
<p>This means you can:</p> <p>5.1 describe the main types of footway, carriageway and pavement structure and their characteristics</p> <p>5.2 state the appropriate equipment to use for excavation and support operations and the factors influencing its selection, including:</p> <ul style="list-style-type: none"> a) trench width and depth b) ease of access c) types of ground d) noise nuisance. <p>5.3 describe how to ensure that equipment is fit for purpose</p> <p>5.4 explain how to identify areas of high risk for excavation activities</p> <p>5.5 describe the precautions to be taken when excavating in areas of high risk (including close proximity to trees)</p> <p>5.6 explain how to check that a trench has been excavated to the correct specifications</p> <p>5.7 describe the working methods used to minimise the requirement for subsequent reinstatement</p> <p>5.8 describe safe working practices for</p> <ul style="list-style-type: none"> a) excavation activities in the highway b) avoiding damage to supply apparatus and sub-structures c) selection, storage and disposal of materials <p>5.9 give examples of typical problems which occur during excavation work in the highway and the appropriate remedial action to take</p> <p>5.10 describe the different types of utilities' apparatus likely to be encountered during excavations, including:</p> <ul style="list-style-type: none"> a) how to identify them b) how they should be located and marked <p>5.11 state the potential risks (1) of damage to utilities' apparatus and the consequences of damage</p> <p>5.12 state the precautions to take to avoid damage to utilities' apparatus</p> <p>5.13 give examples of problems caused by damage to utilities' apparatus, and the appropriate remedial action to take</p> <p>5.14 describe the various methods of supporting exposed utilities' apparatus safely and the appropriate equipment to use for different situations</p> <p>5.15 describe the circumstances in which trench sidewall support is required, and where to find the guidelines for its provision</p> <p>5.16 list the range of backfill, sub-base and modular materials permitted for re-use</p> <p>5.17 explain the factors influencing the selection of materials for re-use or disposal and the consequences of using unsuitable materials</p> <p>5.18 describe the appropriate and safe storage procedures for materials selected for re-use, and how the characteristics of materials affect the storage of materials (including chalk)</p>

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|------|--|
| 5.19 | explain the appropriate and safe storage and disposal procedures for materials that cannot be re-used |
| 5.20 | state the problems which occur during the selection, storage and disposal of materials and the appropriate remedial action to take |
| 5.21 | describe the health and safety requirements for site operations |
| 5.22 | describe the health and safety requirements for particular site conditions |
| 5.23 | describe the appropriate safety equipment to use during site operations, and how to ensure that it is fit for purpose |
| 5.24 | give examples of potential risks (1) to site safety and the appropriate remedial action to take. |

Range
(1) Risks: Those which can be eliminated, reduced or remain constant.

Unit 331

Transfer control of networks

UAN:	L/502/9701
Level:	3
Credit value:	3
GLH:	14
Aim:	<p>This unit is designed for the candidate to demonstrate being responsible for transferring control of completed network projects to individuals and organisations. The candidate will be ensuring that the completed network projects meet the agreed specifications and requirements for transfer and identifying and explaining any variations from these. The candidate will provide information on the completed network projects and obtain acceptance of these in accordance with agreed transfer procedures. The candidate will record all relevant information about the transfer in the appropriate information systems.</p>

The candidate will need knowledge of installation principles and processes and both general and discipline specific engineering principles and processes. You will need to be familiar with health, safety and environmental factors in relation to the products or processes. The candidate will also need to be able to interpret specifications and have sound knowledge of organisational procedures and systems.

This unit will apply to Network Construction Operations at Level 3 and is intended for Construction Supervisors.

Learning outcome
The learner must be able to: 1. Transfer control of networks.
Assessment criteria
This means you can: 1.1 confirm the approved procedures and practices (1) for transferring control of the network

- 1.2 ensure that the network is ready for transfer and complies with all **approved procedures and practices (1)**
- 1.3 provide clear and accurate **relevant information (2)** to the **relevant individuals and organisations (3)** on the network
- 1.4 identify and explain any aspects of the network that vary from the agreed **approved procedures and practices (1)**
- 1.5 obtain acceptance of the network according to the agreed transfer procedures
- 1.6 ensure that all relevant documentation is correctly completed and recorded in the appropriate **relevant information (2)** systems.

Learning outcome

The learner must be able to:

2. Demonstrate knowledge and understanding of transferring control of networks.

Assessment criteria

This means you can:

- 2.1 explain the normal procedures for transferring control of engineering products or processes to and from those responsible for engineering activities
- 2.2 describe what factors might affect the readiness of the engineering products or processes
- 2.3 state who requires information on the engineering products or processes
- 2.4 explain what aspects of the engineering products or processes might vary from the agreed specifications and requirements
- 2.5 state the systems for recording information
- 2.6 explain why it is important to use the information systems.

Range

(1) Approved procedures and practices: Health, Safety and Environmental related to the individual and others, organisational, regulatory, statutory, emergency, operational, contingency plans, relevant company policies, relevant client policies (internal or external) approved materials and equipment and procedures, and risk assessments

(2) Relevant information

Sources of information, statutory and non statutory reports, company documentation, job instructions, client documentation (internal or external)

(3) Relevant individuals and organisations

Customers, contractors, network operatives, colleagues, statutory bodies

Unit 332

Supervise safe operations in emergency situations within the gas intermediate pressure range

UAN:	D/506/7563
Level:	4
Credit value:	2
GLH:	17
Aim:	The aim of this unit is to provide the learner with the knowledge and understanding to operate in compliance with legislation, regulation, policies, procedures, instructions and guidance in the gas industry, specifically within the gas intermediate pressure range sector in emergency situations.

Learning outcome

The learner will:

1. Understand key documents that apply to working in the gas intermediate pressure range sector

Assessment criteria

The learner can:

- 1.1 list the key legislative and organisational policy and procedural documents in relation to work in the gas intermediate pressure range sector
- 1.2 explain the importance of complying with **key legislative, organisational policy** and **procedural** documents
- 1.3 interpret information contained within key documents
- 1.4 state examples of own and others' responsibilities within key documents.

Range

Key documents

Legislation

Health & Safety at Work Act 1974

Control of Substances Hazardous to Health (COSHH) 2002

Construction (Design and Management) Regulations 1999

Control of Major Accidents Hazards Regulations 2002

Dangerous Substances & Explosive Atmosphere Regulations 2002

Gas Safety (Management) Regulations 1996

Management of Health & Safety at Work Regulations 1999
 Pipeline Safety Regulations 1996
 Pressure Systems Safety Regulations 2000
 Gas Safety Regulations (Installations and Use) Regulations 1998
 The Lifting Operations & Lifting Regulations Equipment Regulations 1998 (LOLER)
 Provision & Use of Work Equipment Regulations 1998 (PUWER)
 Reporting on Injuries, Diseases and Dangerous Occurrences 1995 (RIDDOR)

Organisational policy and procedural documents

Internal Documents

Each individual organisation, such as Distribution Networks will have their own suite of policy and procedural documents. Accordingly, it is not deemed appropriate to name these although they would include for example Network Emergency Suite of Policies and Procedures. It is envisaged that whilst training is being conducted in separate Networks, individual Networks will ask training personnel to brief out these unique documents.

External Documents

Health & Safety Executive

Health & Safety Executive Approved Codes of Practice

Health & Safety Executive Guidance notes

Institute of Gas Engineers and Managers (IGEM)

IGEM/GL/5

Learning outcome

The learner will:

2. Be able to comply with key legislation, organisational policies and procedures that apply to work in emergency situations in the gas intermediate pressure range sector.

Assessment criteria

The learner can:

- 2.1 list the key legislative and organisational policy and procedural documents in relation to work in emergency situations in the gas intermediate pressure range sector
- 2.2 explain the importance of complying with key legislative, organisational policy and procedural documents that apply to work in emergency situations in the gas intermediate pressure range sector
- 2.3 interpret information contained within key documents that apply to work in emergency situations in the gas intermediate pressure range sector
- 2.4 support operatives in the understanding, knowledge and compliance with the documents that apply to work in emergency situations in the gas intermediate pressure range sector
- 2.5 produce examples of individual responsibilities within key documents that apply to work in emergency situations in the gas intermediate pressure range sector.

Learning outcome
<p>The learner will:</p> <p>3. Be able to evaluate hazards and risks that apply to emergency situations in the gas intermediate pressure range sector.</p>
Assessment criteria
<p>The learner can:</p> <p>3.1 identify generic risks and hazards that apply to work in emergency situations in the gas intermediate pressure range sector</p> <p>3.2 evaluate increased risks that apply to work in emergency situations in the gas intermediate pressure range sector</p> <p>3.3 produce risk assessments associated with emergency situations in the gas intermediate pressure range sector</p> <p>3.4 support operatives in the preparation of site specific risk assessments that apply to work in emergency situations in the gas intermediate pressure range sector</p> <p>3.5 explain risks to other team members that apply to work in emergency situations in the gas intermediate pressure range sector.</p>

Range
<p>Hazards</p> <p>Fire, airborne/noise pollution, debris, environmental damage, asphyxiation, escape of gas, personal injury, loss of gas supply</p> <p>Generic Risks</p> <p>Elevated pressure</p> <p>Catastrophic failure of pipe wall and fittings</p> <p>Anchorage of pipe, fittings and end caps</p> <p>Sudden release of pressure from a pressurised system</p> <p>Potential escape at elevated pressure</p> <p>Proximity to occupied property, public buildings, railways, roads, etc.</p> <p>Potential for gas ingress to property over a wider than normal area</p> <p>Potential for gas ingress to underground apparatus over a wider than normal area</p> <p>Potential for ignition</p> <p>Increased Risks</p> <p>Working with elevated pressure in the gas intermediate pressure range</p> <p>Control measures for specialised equipment</p> <p>Control measures for specialised contractors</p> <p>Control measures differ from other pressure ranges</p> <p>Increased potential of an incident</p> <p>Differing requirements for Personal Protective Equipment (PPE)</p> <p>Manual handling of materials and equipment</p> <p>Mechanised lifting</p>

Learning outcome
<p>The learner will:</p> <p>4. Be able to evaluate environmental hazards and environmental risks that apply to emergency situations in the gas intermediate pressure range sector.</p>
Assessment criteria
<p>The learner can:</p> <p>4.1 identify environmental hazards that apply to emergency situations in the gas intermediate pressure range sector.</p> <p>4.2 control environmental hazards that apply to emergency situations in the gas intermediate pressure range sector</p> <p>4.3 evaluate environmental risks that apply to emergency situations in the gas intermediate pressure range sector</p> <p>4.4 produce an environmental risks assessment that applies to an emergency situation in the gas intermediate pressure range sector</p> <p>4.5 support operatives in the preparation of a site specific environmental risk assessment that applies to emergency situations in the gas intermediate pressure range sector</p> <p>4.6 check the environmental risk assessments produced by operatives that apply to emergency situations in the gas intermediate pressure range sector</p> <p>4.7 explain additional environmental risk to other team members that apply to emergency situations in the gas intermediate pressure range sector</p> <p>4.8 supervise the disposal of all waste in proper waste management streams in order to comply with ISO 14001 regulations</p> <p>4.9 analyse data sheets to support compliant waste disposal that apply to emergency situations in the gas intermediate pressure range sector.</p>

Range
<p>Environmental hazards</p> <p>Noise pollution</p> <p>Airborne pollution</p> <p>Environmental pollution</p> <p>COSHH</p> <p>Environmental risks</p> <p>Contamination to the environment</p> <p>Failure to protect the health and safety of operatives and the general public</p> <p>Incorrect disposal of waste and excess hazardous materials</p>

Learning outcome
The learner will: 5. Know the importance of using the correct personal protective equipment (PPE) and safety equipment within the gas intermediate pressure range sector
Assessment criteria
The learner can: 5.1 list minimum personal protective equipment (PPE) and safety equipment to be used when working in emergency situations in the gas intermediate pressure range sector 5.2 state the importance of using PPE and safety equipment when working in emergency situations in the gas intermediate pressure range sector.

Learning outcome
The learner will: 6. Be able to support operatives in the selection of correct personal protective equipment (PPE) and safety equipment within the gas intermediate pressure range sector
Assessment criteria
The learner can: 6.1 ensure availability of minimum PPE and safety equipment required for emergency situations in the gas intermediate pressure range sector 6.2 support operatives in the selection of correct PPE and safety equipment required for emergency situations in the gas intermediate pressure range sector.

Range
<p>Minimum personal protective equipment (PPE)</p> <p>Full fire suit made from suitable fire retardant material Fire resistant clothing made from suitable fire retardant material Eye protection Safety headgear Ear defenders Reflective garments Gloves Safety footwear Dust masks Welding visors where appropriate Breathing apparatus with forced air available</p> <p>Safety equipment</p> <p>Fire Extinguishers Intrinsically safe equipment Air movers</p>

Learning outcome
The learner will: 7. Be able to set up a safety exclusion zone at the location of a gas escape within the gas intermediate pressure range sector for emergency working.
Assessment criteria
The learner can: 7.1 explain the requirements for safety exclusion zones 7.2 state exclusion distances 7.3 distinguish between differing operating pressures in Network Assets 7.4 support operatives in preparing a Risk Assessment at the site of a large volume gas escape.

Learning outcome
The learner will: 8. Understand quality assurance certification within the gas intermediate pressure range sector.
Assessment criteria
The learner can: 8.1 explain the importance of quality assurance certification.

Learning outcome
The learner will: 9. Be able to select materials within the gas intermediate pressure range sector.
Assessment criteria
The learner can: 9.1 select approved materials to Gas Industry Standards 9.2 select materials from approved vendors in compliance with Gas Industry Standards 9.3 supervise compliance with organisational procedures when incorrect materials are encountered in the gas intermediate pressure range sector.

Learning outcome
The learner will: 10. Be able to select approved methods of repair within emergency situations in the gas intermediate pressure range sector.
Assessment criteria
The learner can: 10.1 explain the importance of compliance for approved methods of repair 10.2 select approved methods of repair 10.3 explain the role of manufacturers in a repair process.

Learning outcome
The learner will: 11. Be able to support personnel within emergency situations in the gas intermediate pressure range sector.
Assessment criteria
The learner can: 11.1 supervise and support operatives and specialist repair personnel within emergency situations in the gas intermediate pressure range sector.

Learning outcome
The learner will: 12. Be able to identify differing valve types in the intermediate pressure range.
Assessment criteria
The learner can: 12.1 explain the characteristics of differing valve types 12.2 comply with manufacturers instructions for valve operation and repair 12.3 explain the effect of strategic valve closure on a Gas Distribution Network in an emergency situation.

Learning outcome
The learner will: 13. Be able to interpret the information contained within a Network Asset plan for a Gas Distribution Network.
Assessment criteria
The learner can: 13.1 interpret information contained within an Network Asset plan for a Gas Distribution Network 13.2 produce a contingency plan for an emergency situation in the gas intermediate pressure range sector.

Range
Network Asset plan Schematic of mains Understanding the consequences of operating strategic valves Locations of Distribution Pressure Governors Locations of District Governors Tables showing pressure settings (winter and summer)

Unit 333

Supervise safe operations within the gas intermediate pressure range

UAN:	H/506/7564
Level:	4
Credit value:	2
GLH:	20
Aim:	The aim of the unit is to provide the learner with the knowledge and understanding in compliance with legislation, regulation, policies, procedures, instructions and guidance in the gas industry, specifically within the gas intermediate pressure range sector in construction works.

Learning outcome
The learner will: 1. Be able to interpret key documents that apply to working in the gas intermediate pressure range sector.
Assessment criteria
The learner can: 1.1 list the key legislative and organisational policy and procedural documents in relation to work in the gas intermediate pressure range sector 1.2 explain the importance of complying with key legislative, organisational policy and procedural documents 1.3 interpret information contained within key documents 1.4 support operatives in the understanding, knowledge and compliance with these documents 1.5 state examples of own and others' responsibilities within key documents.

Range
Key documents <u>Legislation</u> Health & Safety at Work Act 1974 Control of Substances Hazardous to Health (COSHH) 2002 Construction (Design and Management) Regulations 1999 Control of Major Accidents Hazards Regulations 2002 Dangerous Substances & Explosive Atmosphere Regulations 2002 Gas Safety (Management) Regulations 1996

Management of Health & Safety at Work Regulations 1999
 Pipeline Safety Regulations 1996
 Pressure Systems Safety Regulations 2000
 Gas Safety Regulations (Installations and Use) Regulations 1998
 The Lifting Operations & Lifting Regulations Equipment Regulations 1998 (LOLER)
 Provision & Use of Work Equipment Regulations 1998 (PUWER)
 Reporting on Injuries, Diseases and Dangerous Occurrences 1995 (RIDDOR)

Organisational policy and procedural documents

Internal Documents

Each individual organisation, such as Distribution Networks will have their own suite of policy and procedural documents. Accordingly, it is not deemed appropriate to name these although they would include for example Safe Control of Operations (SCO). It is envisaged that whilst training is being conducted in separate Networks, individual Networks will ask training personnel to brief out these unique documents.

External Documents

Health & Safety Executive

Health & Safety Executive Approved Codes of Practice
 Health & Safety Executive Guidance notes

Institute of Gas Engineers and Managers (IGEM)

IGEM suite of documents applicable to work in the gas intermediate pressure range sector

IGEM/TD/1 – Handling, Transport and Storage of Steel Pipe

IGEM/TD/3 – Distribution Mains <16 bar

IGEM/TD/4 – Distribution Services <16 bar

IGEM/TD/13 – Pressure Regulating Installations

IGEM/GL/5 – Procedures for Managing New Works, Modifications and Repairs

Learning outcome

The learner will:

2. Be able to comply with key legislation, organisational policies and procedures that apply to work instructions in the gas intermediate pressure range sector

Assessment criteria

The learner can:

- 2.1 interpret detail contained within a **work instruction**
- 2.2 comply with legislation according to information contained within a work instruction
- 2.3 comply with organisational policy and procedural information contained within a work instruction
- 2.4 produce documentation to comply with a work instruction
- 2.5 support operatives in the understanding, knowledge and compliance in respect of work instructions.

Range

Work instruction

Learning outcome

The learner will:

3. Be able to evaluate hazards and risks associated with the gas intermediate pressure range sector.

Assessment criteria

The learner can:

- 3.1 identify **generic risks** and hazards associated with the gas intermediate pressure range sector
- 3.2 evaluate **increased risks** associated with the gas intermediate pressure range sector
- 3.3 produce a risk assessment associated with the gas intermediate pressure range sector
- 3.4 explain potential risks to other team members.

Range**Hazards**

Fire, airborne/noise pollution, debris, environmental damage, asphyxiation, escape of gas, personal injury, loss of gas supply

Generic Risks

Catastrophic failure of pipe wall and fittings

Work at the parent main

Anchorage of pipe, fittings and end caps

Sudden release of pressure from a pressurised system

Fire and ignition

Potential escape at elevated pressure

Increased Risks

Working with elevated pressure in the gas intermediate pressure range

Control measures for specialised equipment

Control measures for specialised contractors

Control measures differ from other pressure ranges

Increased potential of an incident

Differing requirements for Personal Protective Equipment (PPE)

Manual handling of materials and equipment

Mechanised lifting

Learning outcome

The learner will:

4. Be able to support operatives in the preparation of site specific risk assessments for the gas intermediate pressure range sector.

Assessment criteria

The learner can:

- 4.1 support operatives in the preparation of site specific risk assessments
- 4.2 check the risk assessments produced by operatives.

Learning outcome
The learner will:
5. Be able to evaluate environmental hazards and environmental risks associated with the gas intermediate pressure range sector.
Assessment criteria
The learner can:
5.1 identify environmental hazards associated with the gas intermediate pressure range sector
5.2 control environmental hazards associated with the gas intermediate pressure range sector
5.3 evaluate environmental risks associated with the gas intermediate pressure range sector
5.4 produce an environmental risk assessment
5.5 support operatives in the preparation of a site specific environmental risk assessment
5.6 check the environmental risk assessments produced by operatives
5.7 explain additional environmental risk to other team members
5.8 supervise the disposal of all waste in proper waste management streams in order to comply with ISO 14001 regulations
5.9 analyse data sheets to support compliant waste disposal.

Range
Environmental hazards Noise pollution Airborne pollution Environmental pollution COSHH Environmental risks Contamination to the environment Failure to protect the health and safety of operatives and the general public Incorrect disposal of waste and excess hazardous materials

Learning outcome
The learner will:
6. Know the importance of using the correct personal protective equipment (PPE) and safety equipment within the gas intermediate pressure range sector
Assessment criteria
The learner can:
6.1 list minimum personal protective equipment (PPE) and safety equipment to be used in the gas intermediate pressure range sector

6.2 state the importance of using PPE and **safety equipment** in the gas intermediate pressure range sector.

Learning outcome

The learner will:

7. Be able to support operatives in the selection of correct personal protective equipment (PPE) and safety equipment within the gas intermediate pressure range sector

Assessment criteria

The learner can:

- 7.1 ensure availability of minimum PPE and **safety equipment** required for work in the gas intermediate pressure range
- 7.2 support operatives in the selection of correct PPE and **safety equipment** in the gas intermediate pressure range sector.

Range

Minimum personal protective equipment (PPE)

Full fire suit made from suitable fire retardant material

Fire resistant clothing made from suitable fire retardant material

Eye protection

Safety headgear

Ear defenders

Reflective garments

Gloves

Safety footwear

Dust masks

Welding visors where appropriate

Breathing apparatus with forced air available

Safety equipment

Fire Extinguishers

Intrinsically safe equipment

Learning outcome

The learner will:

8. Be able to supervise the installation, commissioning and decommissioning of pressure reduction equipment within the gas intermediate pressure range sector

Assessment criteria

The learner can:

- 8.1 select **materials** and equipment to be used in the gas intermediate pressure range sector
- 8.2 identify suitable locations for pressure regulating equipment
- 8.3 supervise the installation, commissioning and decommissioning of pressure reduction equipment up to and including 2" diameter
- 8.4 identify suitable locations for emergency isolation valves

8.5 identify suitable housings to locate pressure reduction equipment.

Range
Materials Correct specification of materials in compliance with Gas Industry Standards Concrete raft bases for Housings Valve positions, valve chambers and boxes.

Learning outcome
The learner will: 9. Understand quality assurance certification within the gas intermediate pressure range sector.
Assessment criteria
The learner can: 9.1 explain the importance of quality assurance certification.

Learning outcome
The learner will: 10. Be able to select approved materials within the gas intermediate pressure range sector.
Assessment criteria
The learner can: 10.1 select approved materials in Gas Industry Standards 10.2 select materials from approved vendors in compliance with Gas Industry Standards 10.3 supervise compliance with organisational procedures when incorrect materials are encountered in the gas intermediate pressure range sector.

Learning outcome
The learner will: 11. Understand jointing techniques applicable to all pipe diameters in the gas intermediate pressure range.
Assessment criteria
The learner can: 11.1 describe jointing techniques applicable to all pipe diameters in the gas intermediate pressure range sector.

Range
Jointing techniques Butt weld joints for steel mains Fillet weld joints for steel services Hot work at the parent main Mechanical jointing - flanged Butt fusion on polyethylene mains Electrofusion joints on mains and services Branch saddle connections on polyethylene parent main

Learning outcome
The learner will: 12. Be able to support operatives with the Lifting Operations & Lifting Equipment Regulations 1998 (LOLER) legislative document.
Assessment criteria
The learner can: 12.1 produce a lifting plan for applicable materials in compliance with LOLER 12.2 support operatives in the interpretation of a lifting plan 12.3 support operatives to ensure that work carried out is in compliance with the lifting plan.

Learning outcome
The learner will: 13. Be able to use corrosion protection within the gas intermediate pressure range sector
Assessment criteria
The learner can: 13.1 explain why corrosion control is necessary on metallic systems 13.2 describe the key components for corrosion control 13.3 interpret design detail for corrosion protection 13.4 explain the role of a coating and wrapping inspector 13.5 explain the requirement for applying wrapping to exposed metallic surfaces 13.6 explain the requirement for insulating joints. 13.7 select equipment for identifying exposed metallic pipework. 13.8 describe the requirements of installing cathodic protection monitoring points

Range
Key components Magnesium anode bags, impressed current (ground bed), cabling, insulation joints, wrapping, monitoring posts

Learning outcome
The learner will: 14. Be able to construct a Network Asset in the gas intermediate pressure sector
Assessment criteria
The learner can: 14.1 comply with procedural construction documents in the gas intermediate pressure range sector 14.2 state the restrictions on trenchless technology techniques in the gas intermediate pressure range sector 14.3 describe the procedure for testing and commissioning an asset in the gas intermediate pressure range sector 14.4 describe typical valve arrangements in the gas intermediate pressure range sector 14.5 state approved flow stop methods in the gas intermediate pressure range sector 14.6 explain defined roles of specialist contractors in the gas intermediate pressure range sector 14.7 describe safety precautions whilst working at the parent main in the gas intermediate pressure range sector 14.8 supervise and support operatives in the construction process of a new Network Asset in the gas intermediate pressure range sector.

Range
Procedural construction documents Organisational policy and procedural documents on mainlaying and servicelaying construction.

Unit 334

Understand how to manage contracts and contractors in the workplace

UAN:	Y/503/9373
Level:	3
Credit value:	2
GLH:	8
Aim:	The aim of this unit is to assist learners who are responsible for the management of others to develop their knowledge and understanding of managing contracts and contractors in the workplace.

Learning outcome
The learner must be able to: 1. Understand how to manage contracts and contractors in the workplace.
Assessment criteria
This means you can: 1.1 briefly outline contract management procedures and tools used in own workplace 1.2 describe a contract that you have assisted in managing and explain how you do this.

Learning outcome
The learner must be able to: 2. Understand how contractors can be managed in the workplace.
Assessment criteria
This means you can: 2.1 explain how to communicate all relevant information to contractor(s) in the workplace 2.2 give an example of a contractor that you manage and explain what information the contractor will require to perform their function safely

- | | |
|-----|--|
| 2.3 | using the example provided explain a control tool that you could use to monitor the contractors work |
| 2.4 | using the example provided explain how you could stop a contractor working if the work were unsafe, unauthorised or causing business disruption. |

Unit 334

Understand how to manage contracts and contractors in the workplace

Evidence requirements

Unit range

Guidance

Learning outcome 1

- Basic awareness of contract law (for example the importance of agreement between two parties, the pre-requisites of offer, acceptance, consideration and intention to create legal relations)
- Types of contracts (for example fixed price, measured term, framework, PFI, labor only, design and build, supply only, supply and fix, annual rolling)
- Contract management procedures and tools (for example setting objectives, requirements, plans and specifications. Awarding and administering contracts. Pre-start contract meetings, regular reviews and reports, compliance audits, customer surveys, meetings, service level agreements, post-contract evaluation)
- Basic awareness of the scale and scope of contracts (regional, national or global)
- Basic awareness of the monitoring and evaluation of contracts including penalties and rewards for delivery
- Basic awareness of the stages of commissioning or mobilising new contracts (for example enabling works, site access, documentation, transfer of staff, training, induction) (learners may be part of a team doing this, or expected to be able to work in a team doing this)

Learning outcome 2

- Examples of types of relevant information required by contractors (for example fire, safety, site rules and code of conduct, accident reporting, hours of work, safety equipment, emergency arrangements)
- Types of contractors commonly used in the workplace (for example photo-copier engineers, water cooler distributor, decorator, internal landscaping operatives, food seller and distributor, lift engineers, maintenance contractors, specialist cleaning contractors)
- Examples of control tools (permit to work, risk assessment, method statement, security ID, criminal record checks, access control, insurance)
- Robust contractor selection processes, site induction, risk assessment and method statement, permit to work system, supervision (for example discuss concerns, order work to cease immediately, inform employing organisation, report to enforcing authority, dismiss from site, safeguard work area)



Appendix 1 Sources of general information

The following documents contain essential information for centres delivering City & Guilds qualifications. They should be referred to in conjunction with this handbook. To download the documents and to find other useful documents, go to the **Centres and Training Providers homepage** on **www.cityandguilds.com**.

Centre Manual - Supporting Customer Excellence contains detailed information about the processes which must be followed and requirements which must be met for a centre to achieve 'approved centre' status, or to offer a particular qualification, as well as updates and good practice exemplars for City & Guilds assessment and policy issues. Specifically, the document includes sections on:

- The centre and qualification approval process
- Assessment, internal quality assurance and examination roles at the centre
- Registration and certification of candidates
- Non-compliance
- Complaints and appeals
- Equal opportunities
- Data protection
- Management systems
- Maintaining records
- Assessment
- Internal quality assurance
- External quality assurance.

Our Quality Assurance Requirements encompasses all of the relevant requirements of key regulatory documents such as:

- Regulatory Arrangements for the Qualifications and Credit Framework (2008)
- SQA Awarding Body Criteria (2007)
- NVQ Code of Practice (2006)

and sets out the criteria that centres should adhere to pre and post centre and qualification approval.

Access to Assessment & Qualifications provides full details of the arrangements that may be made to facilitate access to assessments and qualifications for candidates who are eligible for adjustments in assessment.

The **centre homepage** section of the City & Guilds website also contains useful information on such things as:

- **Walled Garden:** how to register and certificate candidates on line
- **Qualifications and Credit Framework (QCF):** general guidance about the QCF and how qualifications will change, as well as information on the IT systems needed and FAQs
- **Events:** dates and information on the latest Centre events
- **Online assessment:** how to register for e-assessments.

Centre Guide – Delivering International Qualifications contains detailed information about the processes which must be followed and requirements which must be met for a centre to achieve ‘approved centre’ status, or to offer a particular qualification. Specifically, the document includes sections on:

- The centre and qualification approval process and forms
- Assessment, verification and examination roles at the centre
- Registration and certification of candidates
- Non-compliance
- Complaints and appeals
- Equal opportunities
- Data protection
- Frequently asked questions.

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Useful contacts

UK learners General qualification information	T: +44 (0)844 543 0033 E: learnersupport@cityandguilds.com
International learners General qualification information	T: +44 (0)844 543 0033 F: +44 (0)20 7294 2413 E: intcg@cityandguilds.com
Centres Exam entries, Certificates, Registrations/enrolment, Invoices, Missing or late exam materials, Nominal roll reports, Results	T: +44 (0)844 543 0000 F: +44 (0)20 7294 2413 E: centresupport@cityandguilds.com
Single subject qualifications Exam entries, Results, Certification, Missing or late exam materials, Incorrect exam papers, Forms request (BB, results entry), Exam date and time change	T: +44 (0)844 543 0000 F: +44 (0)20 7294 2413 F: +44 (0)20 7294 2404 (BB forms) E: singlesubjects@cityandguilds.com
International awards Results, Entries, Enrolments, Invoices, Missing or late exam materials, Nominal roll reports	T: +44 (0)844 543 0000 F: +44 (0)20 7294 2413 E: intops@cityandguilds.com
Walled Garden Re-issue of password or username, Technical problems, Entries, Results, e-assessment, Navigation, User/menu option, Problems	T: +44 (0)844 543 0000 F: +44 (0)20 7294 2413 E: walledgarden@cityandguilds.com
Employer Employer solutions, Mapping, Accreditation, Development Skills, Consultancy	T: +44 (0)121 503 8993 E: business@cityandguilds.com
Publications Logbooks, Centre documents, Forms, Free literature	T: +44 (0)844 543 0000 F: +44 (0)20 7294 2413

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City & Guilds

1 Giltspur Street

London EC1A 9DD

T +44 (0)844 543 0000

F +44 (0)20 7294 2413

www.cityandguilds.com