ENERGY & ENVIRONMENT AWARDS

Skills for a greener world

EEA Level 3 End-point Assessment for Gas Network Craftsperson
(Network maintenance craftsperson: electrical and instrumentation; Network maintenance craftsperson: pressure management; Network pipelines maintenance craftsperson; Emergency response craftsperson)

Supporting Documents

QAN 610/6017/3
ST0205 V1.1 V1.2 V1.3

Supporting Documents for

EEA Level 3 End-point Assessment for (All pathways) Gas Network Craftsperson

QAN 610/6017/3

Updates to the supporting documents

Since the first publication of Energy & Environment Awards GNC Supporting Documents (All Pathways) the following updates have been made.

Version	Date first published	Section updated	Page(s)
v7.0	August 2025	Rebranded	All
v6.0	November 2024	Appendix B: Gateway Eligibility Form	6
v5.0	June 2024	Appendix C: Practical knowledge and skills assessment	9 - 92
v4.0	May 2024	Practical Tasks – GNC Network Pipelines Maintenance Craftsperson Route 2	145 - 155
v3.0	August 2023	Rebranded and new templates	All
v2.0	February 2022	New templates	All
v1.0	2017	First published	All

Appendix A: Glossary

Amplification – provides more detail on how individual knowledge, skills or behaviours statements should be interpreted. Where the KSB statements, themselves are deemed self-explanatory, no amplification is provided. Assessment may include questions on anything identified in the amplification

Behaviours (as part of KSBs) – specific mindsets, attitudes or approaches identified as part of the apprenticeship standard that must be evidenced during end-point assessment

Elements – are the knowledge, skills and behaviours and what is needed to competently undertake the duties required for an occupational standard

Gateway - the stage of the apprenticeship where the apprentice, employer and training provider determine whether the apprentice is ready to undertake end-point assessment

Guidance – is only provided where it is required to support interpretation of the KSB statements

Knowledge (as part of KSBs) – specific information, technical detail, and 'know-how' identified as part of the apprenticeship standard that must be evidenced during end-point assessment

Pathways – a specialist route within an apprenticeship standard that builds on the occupational competence for a new entrant to the occupation

Skills (as part of KSBs) – the practical application of knowledge identified as part of the apprenticeship standard that must be evidenced during end-point assessment

Standard – An occupational standard is a description of an occupation. It contains occupational profile, and describes KSBs needed for someone to be competent in the occupation's duties. Occupational standards are developed by employers for occupations that meet the Institute for Apprenticeships and Technical Education current occupation criteria

Topic - is a collection of elements grouped into a theme e.g. Health and Safety

Appendix B: Gateway Eligibility Form

(Standard Version: ST0205 version 1.2; Assessment Plan Version: ST0205/AP03)

Apprentice's name:	Apprentice's job title:
Name of Employer:	Name of Training provider:
Employer representatives present:	Training provider representatives present:
Apprenticeship start date:	Apprenticeship on-programme end date:
Gateway meeting date:	
Has the apprentice taken any part of the end-point assessment for this apprenticeship standard with any other End Point Assessment Organisation?	Y / N
If "Yes" please give details:	

Apprentice's details

Eligibility requirements:

The apprentice must confirm their achievement of the following:

Note: For apprentices aged 19+, if maths and/or English have been attempted but not achieved evidence of the attempt should be submitted.

Eligibility requirement	Achieved by the apprentice? Y/N	Evidence (Scans of certificates MUST be included)
Achieved Level 2 English or higher		
Achieved Level 2 Maths or higher		
If required an education, health and care plan or a legacy statement the apprenticeships English and mathematics minimum requirement is Entry Level 3 and British Sign Language qualification are an alternative to English qualifications for whom this is their primary language		
Compiled and submitted a competent logbook of evidence that meets the specification requirements, on which the technical interview will be based		

Gateway Eligibility Declaration

1. The apprentice, the employer and the training provider must sign this form to confirm that they understand and agree to the following:
2. The apprentice has completed the required on-programme elements of the apprenticeship and is ready for end-point assessment with Energy & Environment Awards.
3. Energy & Environment Awards has been informed about any reasonable adjustment and/or special considerations requests.
4. The apprentice will only submit their own work as part of end-point assessment.
5. All parties agree that end-point assessment evidence may be recorded and stored by Energy & Environment Awards for quality assurance purposes.
6. The apprentice has been on-programme for a minimum duration of 365 days.
7. The apprentice has achieved English and maths Level 2 or higher as detailed in this document.
8. If required an education, health and care plan or a legacy statement the apprenticeships English and mathematics minimum requirement is Entry Level 3 and British Sign Language qualification are an alternative to English qualifications for whom this is their primary language
9. The apprentice has compiled and submitted a competent logbook of evidence, on which the technical interview will be based.
10. The apprentice, if successful, gives permission for Energy & Environment Awards to request the apprenticeship. certificate from the ESFA who issue the certificate on behalf of the Secretary of State.
11. The apprentice has been directed to Energy & Environment Awards Appeals Policy and Complaints Policy.
12. The employer/training provider has given Energy & Environment Awards at least three months' notice of requesting this EPA for this apprentice.
13. If the Gateway Eligibility Report is not completed in full, meeting all requirements, and submitted to Energy & Environment Awards, the end-point assessment cannot take place.

Signed on behalf of the employer (print name):	Signature:	Date:
Signed on behalf of the training provider (print name):	Signature:	Date:
Apprentice's name (print):	Signature:	Date:
Energy & Environment Awards use only:		
Energy & Environment Awards Sign off:		
Comments/actions:		

Appendix C: Practice Knowledge and Skills Assessment

Level: 3
Gas Network Craftsperson
Pathway: Electrical and Instrumentation
Paper Code: Practice paper

This examination consists of 50 multiple-choice questions.

The Pass mark is 35 correct answers.
The Distinction mark is 45 correct answers.

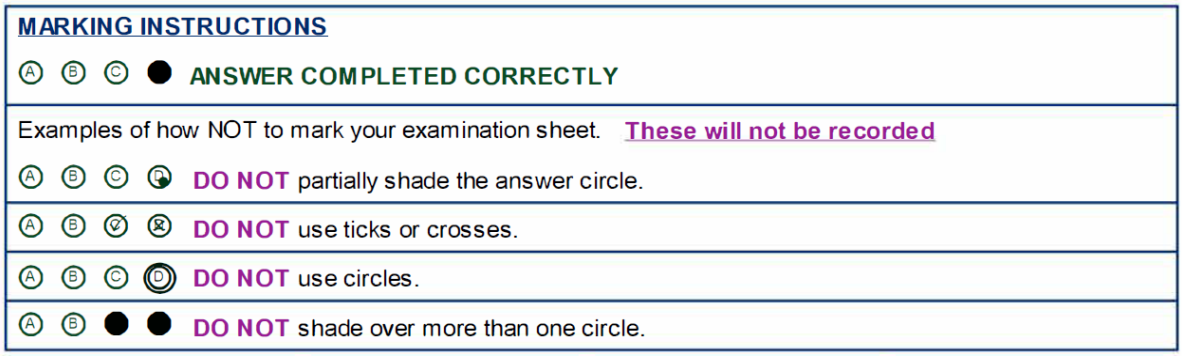
The duration of this examination is 75 minutes.
You must use a **pencil** to complete the answer sheet - pens must NOT be used.
When completed, please leave the examination answer sheet and question paper on the desk.

For this paper:

- the use of a scientific calculator (non-programmable) is permitted
- access to the internet or intranet is NOT allowed

For each question, fill in ONE answer ONLY.
If you make a mistake, ensure you erase it thoroughly.

You must mark your choice of answer by shading in ONE answer circle only. Please mark each choice like this:



You may use this page for rough work. This page must not be removed.

Question 1	
Which ONE of the following activities relates the Gas Safety (Management) Regulations 1996 (GSMR)?	
Possible answers	
a)	The transportation of natural gas to the public
b)	The supply of natural gas to consumers
c)	The control of hazards associated with gas products
d)	The setting of parameters for charging customers for the supply of gas

Question 2	
Which Regulation states the requirements for Flow Weighted Average Calorific Value (FWACV)?	
Possible answers	
a)	Pressure Systems Safety Regulations 2000 (PSSR)
b)	Pipelines Safety Regulations 1996 (PSR)
c)	Gas Safety (Management) Regulations 1996 (GSMR)
d)	Provision and Use of Work Equipment Regulations 1998 (PUWER)

Question 3	
Which instrumentation cables should meet which British Standard?	
Possible answers	
a)	BS 2391
b)	BS 5308
c)	BS 7671
d)	BS 9322

Question 4	
An operative is using a piece of equipment which leaks oil onto the ground. What are the next actions the operative should take?	
Possible answers	
a)	Contain the oil leak, clean it up and report it
b)	Repair the oil leak and report the spill
c)	Wash away the oil into a nearby drain
d)	Wipe up the oil and dispose as general waste

Question 5		
What does this symbol mean?		
Possible answers		
a)	Hearing protection is available	
b)	Hearing protection must be worn	
c)	Hearing protection is advised	
d)	Hearing protection is not required	

Question 6		
According to the Control of Substances Hazardous to Health Regulations 2002 (COSHH), what does this symbol mean?		
Possible answers		
a)	Harmful substance	
b)	Oxidising substance	
c)	Toxic substance	
d)	Flammable substance	

Question 7	
What is the first principle of safe manual handling?	
Possible answers	
a)	Dismantle the load
b)	Avoid the need for lifting if possible
c)	Use more than one person for the lift
d)	Ensure the lifting activity does not put others at risk

Question 8	
Prior to using any tool or equipment, what must the operator check and confirm?	
Possible answers	
a)	It is intrinsically safe
b)	It is suitable for the task
c)	It has all appropriate certification labels
d)	It is supplied by a recognised hire company

Question 9	
According to the Control of Noise at Work Regulations 2005, ear protection must be worn when the upper exposure action value is above:	
Possible answers	
a)	75 db (A)
b)	80 db (A)
c)	85 db (A)
d)	90 db (A)

Question 10	
When would the use of leaning ladders be considered a suitable option to carry out work at height?	
Possible answers	
a)	Where the work area cannot be reached from a fixed scaffold
b)	Where the work activity is low risk and short duration
c)	Where it is the most cost-effective solution
d)	Where work will take less than one hour to complete

Question 11	
What does **N/O** and **N/C** mean on site equipment and or drawings?	
Possible answers	
a)	Nearly Open, Nearly Closed
b)	Not Operating, Not Compliant
c)	Normally Open, Normally Closed
d)	Normal Operation, Normal Compliance

Question 12	
A three-term controller employs **PID** in order to apply accurate and responsive correction to a control function. What does **PID** stand for?	
Possible answers	
a)	Power, immediate, direct
b)	Pipeline, invertor, downstream
c)	Proportional, integral, derivative
d)	Pneumatic, intermediate, damping

Question 13	
How is capacitance calculated?	
Possible answers	
a)	Voltage plus Charge
b)	Voltage divided by Charge
c)	Charge multiplied by Voltage
d)	Charge divided by Voltage

Question 14	
Which statement describes the Joule-Thomson effect?	
Possible answers	
a)	Gas cools when it expands rapidly
b)	Gas cools when its pressure is increased
c)	Gas freezes on the inlet to a regulator
d)	Gas freezes when it flows into above-ground pipework

Question 15	
When installing a replacement pressure instrument, what should be referred to for the correct installation method?	
Possible answers	
a)	Site logbook
b)	Site drawings
c)	Gas Safe website
d)	Manufacturer's instructions

Question 16	
Where a pressure transmitter has a span of 16 mA and the permitted tolerance is 0.3% of the span, what does the tolerance equate to in mA?	
Possible answers	
a)	0.048 mA
b)	0.053 mA
c)	0.48 mA
d)	0.53 mA

Question 17	
According to a risk assessment, what is meant by the term ‘hazard’?	
Possible answers	
a)	The likelihood to cause harm
b)	The outcome and severity of an accident
c)	Anything that could cause equipment to fail
d)	Anything that has the potential to cause harm

Question 18	
The purpose of a risk assessment is to:	
Possible answers	
a)	ensure tasks are done in the correct order
b)	ensure work can be carried out in reasonable safety
c)	protect the employer and employee from prosecution
d)	fully meet the requirements of the Construction (Design and Management) Regulations 2015

Question 19	
What is a Permit to Work?	
Possible answers	
a)	A way of recording work undertaken on site
b)	A method to control works in potentially hazardous areas
c)	A document to record that a job has been completed safely
d)	Proof of the competence of individuals to undertake work on site

Question 20	
Where work encroaches on to a road or footway, what must be installed on the site to protect both the workers and members of the public?	
Possible answers	
a)	Traffic lights
b)	Warning signs
c)	Electrical safety measures
d)	Signing, lighting and guarding

Question 21	
Who is responsible for implementing Permit to Work requirements on an Above Ground Installation (AGI) site?	
Possible answers	
a)	A local manager
b)	A competent person
c)	An authorising engineer
d)	A manager in system control

Question 22	
On-site, who is responsible for ensuring compliance requirements of a Permit to Work?	
Possible answers	
a)	The authorising engineer who issued the permit to work
b)	The competent person to whom the permit to work was issued
c)	The manager responsible for the site where the permit to work was issued
d)	The team working on the site where the permit to work was issued

Question 23	
What is the priority action to take on site where gas is escaping?	
Possible answers	
a)	Risk assessment
b)	Secure the escape
c)	Set up an exclusion zone
d)	Safeguard life and property

Question 24	
Which ONE of the following electrical protection concepts represents ‘increased safety’?	
Possible answers	
a)	Ex ia
b)	Ex e
c)	Ex d
d)	Ex n

Question 25	
Where the voltage of a circuit is 230 V and the current is 11.5 A, what is the resistance of the load?	
Possible answers	
a)	10 Ω
b)	15 Ω
c)	20 Ω
d)	23 Ω

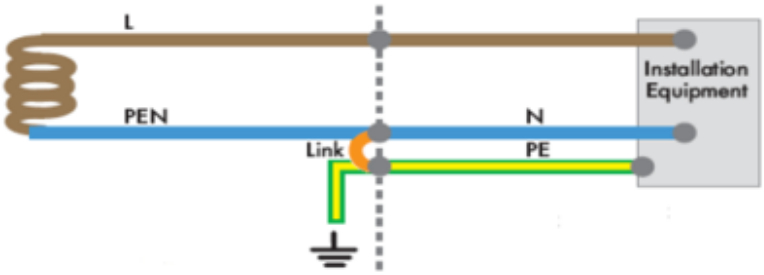
Question 26	
When working on an Above Ground Installation (AGI), which action must be undertaken every day?	
Possible answers	
a)	Log on and off site
b)	Request a Permit to Work
c)	Contact the responsible manager
d)	Contact the authorising engineer

Question 27	
After an electrical circuit is isolated, in which sequence is the voltage indicator and proving unit used?	
Possible answers	
a)	Test-Prove-Prove
b)	Test-Prove-Test
c)	Prove-Test-Test
d)	Prove-Test-Prove

Question 28	
What is the minimum permitted distance between adjacent intrinsically safe circuits?	
Possible answers	
a)	3 mm
b)	4 mm
c)	5 mm
d)	6 mm

Question 29	
What should an operative refer to in order to check that the earth loop impedance values fall within an acceptable value?	
Possible answers	
a)	BS7671:2018
b)	Work instructions
c)	Circuit drawings
d)	The test kit manual

Question 30	
If power of a load is 3000 W and voltage is 230 V, what is the resistance?	
Possible answers	
a)	20.33 Ω
b)	17.63 Ω
c)	13.04 Ω
d)	10.05 Ω

Question 31	
Which earthing arrangement is this?  	
Possible answers	
a)	IT
b)	TT
c)	TN-S
d)	TN-C-S

Question 32	
According to the sequence of tests for initial verification of a circuit, which test must be completed first?	
Possible answers	
a)	Insulation resistance
b)	Prospective fault current
c)	Residual-current device tests
d)	Continuity of protective conductors

Question 33	
When testing analogue inputs on telemetry systems, input signals should be tested at points equivalent to 0, 25, 50, 75 and 100% for:	
Possible answers	
a)	rising only
b)	rising and falling
c)	falling only
d)	rising twice

Question 34	
A piece of equipment has the following markings on the case:  What does this mean?	
Possible answers	
a)	It is approved under the Personal Protective Equipment 2002 Regulations
b)	It is certified under Appareils destinés à être utilisés en ATmosphères Explosives (ATEX)
c)	It meets the requirements of Reporting of Injuries, Diseases and Dangerous Occurrence Regulations 2013
d)	It meets the requirements of the Provision and Use of Work Equipment Regulations 1998

Question 35	
Safety is put at risk from fire, explosion, and corrosion of metal. Identify the Regulation that places a duty on employers and the self-employed to protect people from these risks.	
Possible answers	
a)	Pipelines Safety Regulations 1996
b)	Gas Safety (Management) Regulations 1996
c)	Pressure Systems Safety Regulations 2000
d)	Dangerous Substances and Explosive Atmospheres Regulations 2002

Question 36	
The Regulations that are commonly referred to by the initials 'WEEE' is the:	
Possible answers	
a)	Work Environmental & Ethical Enactment Regulations
b)	Workforce Entry & Egress Equipment Regulations
c)	Waste Ethics & Environmental Emergency Regulations
d)	Waste Electrical & Electronic Equipment Regulations

Question 37	
Which Regulation from the Electricity at Work Regulations 1989 outlines working on or near live conductors?	
Possible answers	
a)	Regulation 1
b)	Regulation 11
c)	Regulation 12
d)	Regulation 14

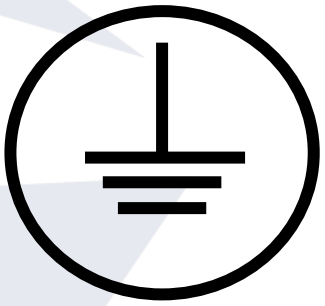
Question 38	
What are the most up to date colours used for electrical single-phase wiring?	
Possible answers	
a)	Red (live), black (neutral), green & yellow (protective earth)
b)	Brown (live), blue (neutral), green & yellow (protective earth)
c)	Brown (live), blue (neutral), green (protective earth)
d)	Red (live), blue (neutral), green & yellow (protective earth)

Question 39	
What is BS7671 more widely known as?	
Possible answers	**Answer**
a)	15th Edition – IET wiring regulations
b)	16th Edition – IET wiring regulations
c)	17th Edition – IET wiring regulations
d)	18th Edition – IET wiring regulations

Question 40	
In which hazardous area zone could an operative install equipment that is marked with ‘Ex n’?	
Possible answers	
a)	Zone 0
b)	Zone 1
c)	Zone 2
d)	Zone 3

Question 41	
What does the sign below mean if displayed at the entrance to an operational site?	
Possible answers	
a)	Warning - Explosive gas
b)	Warning - Explosive atmosphere
c)	DSEAR regulations apply
d)	ATEX certified equipment only

Question 42	
Which ONE of the following is a type of earthing?	
Possible answers	
a)	Cathodic protection
b)	Circuit Protective Conductor
c)	Double insulation
d)	Impressed current

Question 43	
What type of electrical equipment would this symbol be found on?	
Possible answers	
a)	Class I
b)	Class II
c)	Class III
d)	Class IV

Question 44	
When removing an orifice plate there is an accidental equipment failure that results in the loss of more than 500kg of natural gas through leakage to atmosphere. According to which Regulations must this be reported?	
Possible answers	
a)	Dangerous Substances and Explosive Atmospheres Regulations 2002
b)	Reporting of Injuries, Diseases and Dangerous Occurrence Regulations 2013
c)	Control of Major Accident Hazards Regulations 2015
d)	Provision and Use of Work Equipment Regulations 1998

Question 45	
During an electrical isolation procedure, what is the correct sequence to follow when checking with a voltage indicator?	
Possible answers	
a)	Earth to Neutral, Earth to Live, Neutral to Live
b)	Live to Earth, Neutral to Earth, Live to Neutral
c)	Live to Earth, Neutral to Earth, Neutral to Live
d)	Earth to Earth, Neutral to Neutral, Live to Live

Question 46	
Which type of valve should be adjusted before testing a pressure switch?	
Possible answers	
a)	Equaliser valve
b)	Isolation valve
c)	Output valve
d)	Stream valve

Question 47	
A BS88 fuse can be used for which purpose?	
Possible answers	
a)	Emergency switching
b)	Functional switching
c)	Two-way switching
d)	Means of isolation

Question 48	
How often should an orifice plate be removed and inspected?	
Possible answers	
a)	Annually
b)	Every two years
c)	Every 6 months
d)	Every month

Question 49	
What action should be taken when coming into contact with asbestos at work?	
Possible answers	
a)	Work cautiously on an identified asbestos gas main
b)	Gently handle gaskets which may contain asbestos
c)	Carefully drill walls with a textured coating which may contain asbestos
d)	Take precautions when materials are found which may contain asbestos

Question 50	
Which ONE of the following is a duty under the Gas Safety Management Regulations 1996 (GSMR)?	
Possible answers	
a)	To design and safely operate pipelines
b)	To protect people from fire and explosion
c)	To minimise the risk of a gas supply emergency
d)	To prevent major accidents involving dangerous substances

End of Questions

Electrical and Instrumentation Answers

Question	Answer	Question	Answer
1	A	**26**	A
2	C	**27**	D
3	B	**28**	D
4	A	**29**	A
5	B	**30**	B
6	C	**31**	D
7	B	**32**	D
8	B	**33**	B
9	C	**34**	B
10	B	**35**	D
11	C	**36**	D
12	C	**37**	D
13	D	**38**	B
14	A	**39**	D
15	D	**40**	C
16	A	**41**	B
17	D	**42**	B
18	B	**43**	A
19	B	**44**	B
20	D	**45**	A
21	B	**46**	A
22	B	**47**	D
23	D	**48**	A
24	B	**49**	D
25	C	**50**	C

Level: 3
Gas Network Craftsperson
Pathway: Pressure Management
Paper Code: Practice paper

This examination consists of 50 multiple-choice questions.

The Pass mark is 35 correct answers.
The Distinction mark is 45 correct answers.

The duration of this examination is 75 minutes.
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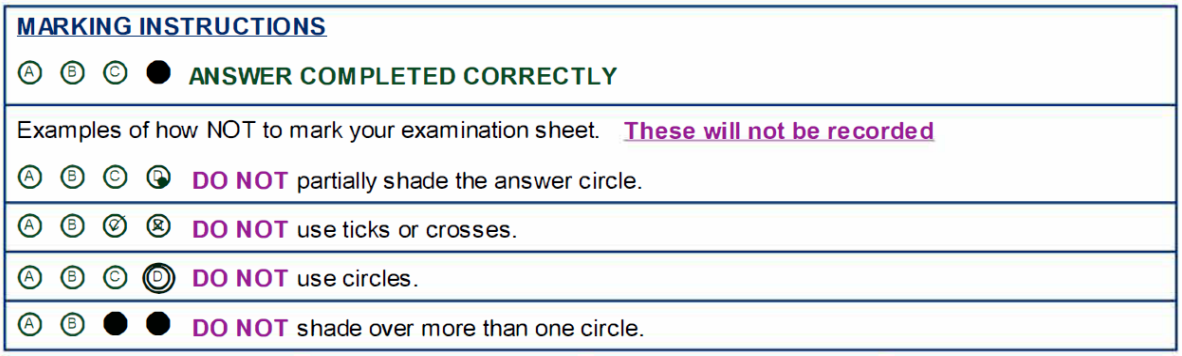

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Question 1	
Which ONE of the following duties is placed upon gas transporters under the Gas Safety (Management) Regulations 1996?	
Possible answers	
a)	To protect people from fire and explosion
b)	To prevent major accidents involving dangerous substances
c)	To minimise the risk of a gas supply emergency
d)	To design and safely operate pipelines

Question 2	
Which regulation states the requirements for Flow Weighted Average Calorific Value (FWACV)?	
Possible answers	
a)	Pressure Systems Safety Regulations 2000 (PSSR)
b)	Pipelines Safety Regulations 1998 (PSR)
c)	Gas Safety (Management) Regulations 1996 (GSMR)
d)	Provision and Use of Work Equipment Regulations 1998 (PUWER)

Question 3	
What action should be taken when coming into contact with asbestos at work?	
Possible answers	
a)	Work cautiously if asbestos has been damaged
b)	Gently handle gaskets which may contain asbestos
c)	Carefully drill materials which may contain asbestos
d)	Consider options to avoid disturbing the asbestos

Question 4	
What colour band is the dry powder fire extinguisher?	
Possible answers	
a)	Blue
b)	Red
c)	Black
d)	Cream

Question 5	
How can an operative identify whether a chemical is hazardous?	
Possible answers	
a)	From the name or trade name
b)	From the shape and colour of the container
c)	From a symbol on the container label and the material data sheet
d)	From the way it looks and smells when it is emptied from the container

Question 6	
Which regulations apply to the identification and assessment of hazardous areas?	
Possible answers	
a)	IGEM/SR/25
b)	Pressure Systems Safety Regulations 2000 (PSSR)
c)	Appareils destinés à être utilisés en ATmosphères EXplosives (ATEX)
d)	The Dangerous Substances and Explosive Atmosphere Regulations 2002 (DSEAR)

Question 7	
What do the Dangerous Substances and Explosive Atmospheres Regulations 2002 (DSEAR) regulations apply to?	
Possible answers	
a)	Toxic substances
b)	High value substances
c)	Flammable substances
d)	Inert substances

Question 8	
Under normal operation of an auxiliary-controlled set-up, which ONE of the following pressures will be the same as the pressure acting under the main diaphragm of the standby stream active regulator?	
Possible answers	
a)	Inlet pressure
b)	Atmospheric pressure
c)	Outlet pressure setting
d)	'J' regulator pressure setting

Question 9	
What is the recommended filtration gauge of equipment operating at 2 bar?	
Possible answers	
a)	50 microns
b)	100 microns
c)	200 microns
d)	250 microns

Question 10	
Gas expands when it passes across an orifice plate. What affect does this have on the temperature of the gas?	
Possible answers	
a)	The temperature of the gas increases
b)	The temperature of the gas decreases
c)	The temperature of the gas remains the same
d)	The temperature of the gas fluctuates

Question 11	
Identify the calculation that represents Boyles law? (P = pressure, V = volume, T = temperature)	
Possible answers	
a)	$P_1V_1 = P_2V_2$
b)	$P_1T_1 = P_2T_2$
c)	$V_1T_1 = V_2T_2$
d)	$P_1V_1T_1 = P_2V_2T_2$

Question 12	
What is the cause of rust on steel pipework?	
Possible answers	
a)	Carbon particles reacting with iron particles
b)	Iron particles exposed to sunlight
c)	Iron particles exposed to oxygen and moisture
d)	Carbon particles exposed to oxygen and sunlight

Question 13	
If the temperature of a gas in a vessel remains constant and the pressure is doubled, what affect does this have on its volume?	
Possible answers	
a)	It remains the same
b)	It is halved
c)	It is doubled
d)	It is trebled

Question 14	
When undertaking a risk assessment, how is a risk score calculated?	
Possible answers	
a)	Hazard × risk
b)	Severity × likelihood
c)	Outcome × likelihood
d)	Hazard × severity

Question 15	
What is the gas concentration level at which a building must be evacuated?	
Possible answers	
a)	5% of the lower explosive limit (LEL) or above
b)	20% of the lower explosive limit (LEL) or above
c)	5% gas in air (GIA)
d)	20% gas in air (GIA)

Question 16	
A piece of equipment leaks oil on to the ground. What is the correct action for an operative to take?	
Possible answers	
a)	Wipe up the spill with a clean rag
b)	Remove the equipment from site
c)	Wash away the spill into the nearest drain
d)	Contain the leak, clean up the spill, and report it

Question 17	
What is the purpose of a risk assessment?	
Possible answers	
a)	Improve site safety
b)	Improve business financial performance
c)	Provide information about accidents and ill health
d)	Obtain information needed for insurance claims

Question 18	
For what purpose is Cathodic Protection (CP) used?	
Possible answers	
a)	Condition monitoring
b)	Corrosion control
c)	Voltage insulation
d)	Earthing

Question 19	
An operative has undertaken work on a plastic-coated steel pipeline. What must be applied to the pipe before work is completed?	
Possible answers	
a)	Paint
b)	Sacrificial anodes
c)	Corrosion protection
d)	A wind and water line wrap

Question 20	
What is the purpose of a magnetic pig?	
Possible answers	
a)	To identify obstacles in the pipeline
b)	To remove ferrous debris from a pipeline
c)	To record the contours of the pipeline
d)	To record material loss due to corrosion

Question 21	
Which ONE of the following factors will determine how quickly an action needs to be taken for the repair of corrosion of pipework on a gas installation?	
Possible answers	
a)	The surface area of corrosion on pipework
b)	The degree of corrosion through the pipe wall
c)	The cost of the work required to remove the corrosion
d)	The significance of the corrosion on the pipework within the installation

Question 22	
Plant detection equipment will:	
Possible answers	
a)	reliably pinpoint the location of pipes and cables
b)	locate the position of all underground pipework and ducts
c)	confirm the identify of exposed plant
d)	indicate the presence of most metallic pipes and cables

Question 23	
For work in or on excavations, when should plant avoidance equipment be used?	
Possible answers	
a)	When the presence of cables is suspected
b)	Before the surface of the ground is broken
c)	When there are visible signs of plant in the ground
d)	Upon arrival on site

Question 24	
An operative is working on pressure control equipment adjacent to the highway and the work encroaches on to a footway. What must be installed to protect workers and members of the public?	
Possible answers	
a)	500 mm cones
b)	Traffic lights
c)	Warning notices
d)	Signing, lighting and guarding

Question 25	
For work on site, what is the absolute minimum width of footway that must be provided for pedestrians?	
Possible answers	
a)	1.0 m
b)	1.2 m
c)	1.4 m
d)	1.5 m

Question 26	
An operative notices a luminous yellow flame at the burner of a water bath heater. What does this indicate?	
Possible answers	
a)	Stoichiometric combustion
b)	Incomplete combustion
c)	Turbulent combustion
d)	Complete combustion

Question 27	
An operative is working on a profile-controlled installation. What type of regulator would take control if the profiler failed safe?	
Possible Answers	
a)	Slam shut
b)	Low limit pilot
c)	High limit pilot
d)	Differential pressure pilot

Question 28	
An operative is performing a lock-up test on an axial flow regulator and finds that it is passing gas. How should the operative carry out the test to check if it is the pilot that is passing gas?	
Possible answers	
a)	Close the dump line to the pilot, and the pressure should stop increasing
b)	Close the dump line to the pilot and the pressure should start decreasing
c)	Close the dump line to the pilot and the pressure should stop decreasing
d)	Close the dump line to the pilot and the pressure should still increase

Question 29	
An operative is checking the set point of a slam shut. The pressure should be set at 65 millibars (mbar). The first fire occurs at 125 mbar, the second fire is at 110 mbar. The operative removes the adjuster cap from the slam shut and then the third fire is at 63 mbar. What is the likely fault with the slam shut?	
Possible answers	
a)	The valve stem is sticking
b)	Corrosion of the valve stem
c)	A faulty adjuster
d)	A blocked breather

Question 30	
Who must be notified before operating any valve on a pressure reduction installation?	
Possible answers	
a)	Other colleagues on site
b)	The manager responsible for the site
c)	The system controller
d)	The authorising engineer

Question 31	
What is the generic term used for equipment which is used for the automatic transmission of data from site?	
Possible answers	
a)	Instrumentation
b)	Telemetry
c)	Telecommunications
d)	Information technology

Question 32	
What is an actuator used for?	
Possible answers	
a)	The automated operation of a valve
b)	The control of gas through a vent stack
c)	The monitoring of pipeline pressure
d)	The communication of data from site

Question 33	
Identify the activity that would require a Permit to Work.	
Possible answers	
a)	Investigating a gas escape
b)	Testing instrumentation
c)	Working on the highway
d)	Working in a deep excavation

Question 34	
Who has responsibility for issuing a Permit to Work (PtW) on site?	
Possible answers	
a)	Network Controller
b)	Competent Person
c)	Senior Manager
d)	Authorising Engineer

Question 35	
What is the name given to the suite of procedures used to manage work activities impacting on gas flows through a pressure reduction installation?	
Possible answers	
a)	VS02
b)	IGE/TD/1
c)	Safe Control of Operations
d)	Gas Safety (Management) Regulations 1996

Question 36	
Following a VS02 inspection, when should ‘category B’ repairs be reported?	
Possible answers	
a)	Immediately
b)	Within 28 days
c)	Before the next inspection
d)	As scheduled by the operative’s planner

Question 37	
Which procedure is applied for the monitoring of corrosion on gas pipework and equipment?	
Possible answers	
a)	VS02
b)	EM/71
c)	IGE/TD/10
d)	IGE/TD/13

Question 38	
A requirement of the Pressure Systems Safety Regulations 2000 (PSSR) is that pipelines should routinely be checked for:	
Possible answers	
a)	leakage
b)	over pressurisation
c)	corrosion or defects
d)	inadequate support

Question 39	
When should a ‘category B’ fault repair be completed following a Pressure Systems Safety Regulations 2000 (PSSR) inspection?	
Possible answers	
a)	Immediately
b)	Within 14 days
c)	Within 12 months
d)	As per the routine maintenance schedule

Question 40	
Which ONE of the following options is a true statement about corrosion on a pressure reduction installation?	
Possible answers	
a)	All identified corrosion needs to be repaired
b)	All corrosion can lead to a gas escape
c)	All corrosion is easily visible
d)	All corrosion needs to be monitored

Question 41	
When natural gas is escaping, how will it disperse from the source of the leak?	
Possible answers	
a)	It will rise upwards
b)	It will travel horizontally
c)	It will fall towards the ground
d)	It will remain in the area it leaked from

Question 42	
When cutting a pipeline, a temporary continuity bond is used to prevent sparking caused by which method of corrosion-prevention?	
Possible answers	
a)	Wrapping
b)	Painting
c)	Insulation joints
d)	Cathodic protection

Question 43	
On a water-bath heater where both the burner and ignition system are enclosed in an insulated box, what is the name of the device used to prevent gas igniting outside the burner box?	
Possible answers	
a)	Flame arrester
b)	Flame absorber
c)	Flame filter
d)	Flame canceller

Question 44	
A ‘non-critical’ valve is any valve that:	
Possible answers	
a)	can be fully operated without affecting the supply in the network
b)	affects the flow of gas in the network when operated
c)	can be up to half-closed without affecting the supply in the network
d)	has a device preventing its operation

Question 45	
What is meant by the term ‘double block and bleed’ in relation to a valve?	
Possible answers	
a)	A valve having two greasing points which can be vented for maintenance purposes
b)	A valve from which network pressures can be reduced during emergency situations
c)	An arrangement of two-valves with a bypass to ensure continuity of supply
d)	Two valve components which each stop the flow of gas, with the cavity between them vented to atmosphere

Question 46	
Which ONE of the following actions is part of the procedure for commissioning a service governor to a domestic property?	
Possible answers	
a)	Check that the customer’s internal installation is sound
b)	Undertake a functional test of the regulator
c)	Pressure test the service from the main to the governor
d)	Confirm that records of the meter installation are correct

Question 47	
Which ONE of the following safety configurations is required for a gas installation with an inlet pressure of 1.75 bar?	
Possible answers	
a)	1 control device
b)	1 control device and 1 safety device
c)	1 control device and 2 safety devices
d)	2 control devices and 1 safety device

Question 48	
The Safety at Street Works and Road Works code of practice (the 'Red Book') makes specific reference to works that will last for less than 60 minutes. Mobile and short-duration static works should only be carried out when:	
Possible answers	
a)	traffic flows will not be disrupted
b)	pedestrian access can be safely disrupted
c)	given site-specific permission by the Local Authority
d)	there is good visibility during periods of low risk

Question 49	
According to the 'Red Book' (Safety at Street Works and Road Works), vehicles used on Street Works activities should have:	
Possible answers	
a)	equipment for detecting buried apparatus
b)	high visibility rear chevron markings and an amber flashing light
c)	a clearly displayed company logo
d)	a complete set of signs, barriers and lamps

Question 50	
An operative is working on pressure control equipment housed in a kiosk. Why should the doors of a kiosk be left open?	
Possible answers	
a)	To allow others to see that work is in progress
b)	To provide a fast exit route in the event of an emergency
c)	To maximise the light available within the kiosk
d)	To facilitate communication with other team members

End of Questions

Pressure Management Answers

Question	Answer	Question	Answer
1	C	**26**	B
2	C	**27**	D
3	D	**28**	A
4	A	**29**	D
5	C	**30**	C
6	D	**31**	B
7	C	**32**	A
8	D	**33**	D
9	C	**34**	D
10	B	**35**	C
11	A	**36**	B
12	C	**37**	A
13	B	**38**	C
14	B	**39**	C
15	B	**40**	D
16	D	**41**	A
17	A	**42**	D
18	B	**43**	A
19	C	**44**	A
20	B	**45**	D
21	B	**46**	B
22	D	**47**	B
23	B	**48**	D
24	D	**49**	B
25	A	**50**	B

Level: 3
Gas Network Craftsperson
Pathway: Pipelines Maintenance
Paper Code: Practice paper

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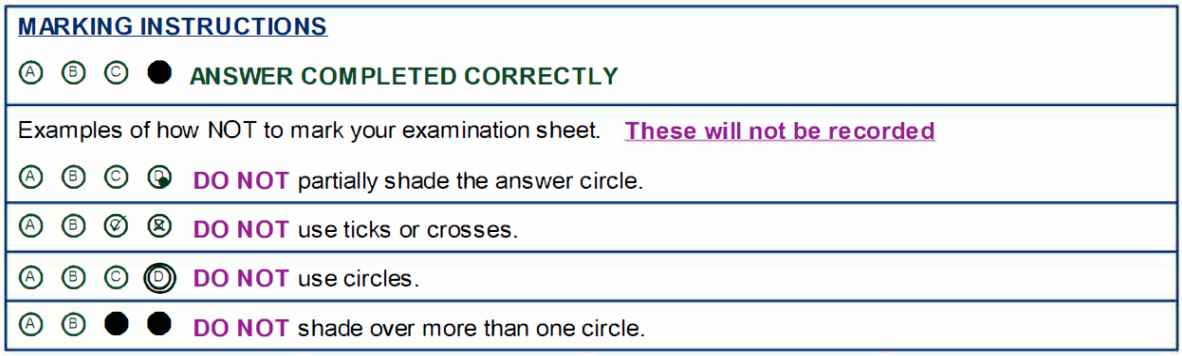

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Question 1	
According to the GSMR (Gas Safety (Management) Regulations 1996), where would an operative locate the emergency control valve?	
Possible answers	
a)	At the end of a service pipe
b)	At the inlet to a meter
c)	At least 250 mm above ground level
d)	Within 1 m of a service pipe entering a property

Question 2	
What is the usual operating pressure of a low-pressure gas installation?	
Possible answers	
a)	19 mbar ± 2 mbar
b)	20 mbar ± 2 mbar
c)	21 mbar ± 2 mbar
d)	23 mbar ± 2 mbar

Question 3	
Which ONE of the following statements is correct about health and safety?	
Possible answers	
a)	An individual's behaviour is a major contributory factor to accidents
b)	Hazardous substances are the most common causes of injury
c)	Personal protective equipment (PPE) will protect individuals from any level of harm
d)	The only potential harm from electricity is burns

Question 4	
What action should be taken when coming into contact with asbestos at work?	
Possible answers	
a)	Work cautiously on an identified asbestos gas main
b)	Gently handle gaskets which may contain asbestos
c)	Carefully drill walls with a textured coating which may contain asbestos
d)	Take precautions when materials are found which may contain asbestos

Question 5	
What colour and shape are the hazard markings used for the Control of Substances Hazardous to Health (COSHH)?	
Possible answers	
a)	Diamond - Orange and Black
b)	Square - Orange and Black
c)	Diamond - Red Border
d)	Round - Red Border

Question 6	
The Provision and Use of Work Equipment Regulations (PUWER) includes a requirement for which ONE of the following topics?	
Possible answers	
a)	The retention of inspection and maintenance records
b)	Instructions for the regular replacement of equipment
c)	Controls to prevent employees using equipment in an unsafe manner
d)	Arrangements for users to carry out the annual maintenance of equipment

Question 7	
An operative is using a piece of equipment and it leaks oil on to the ground. What must the operative do?	
Possible answers	
a)	Wash the oil leak away
b)	Stop the oil leak and wipe it up
c)	Immediately report the oil leak
d)	Contain the oil leak, clean it up and report it

Question 8	
Prior to using electrical equipment, what are users required to do?	
Possible answers	
a)	Review test certificates for the equipment
b)	Visually check the condition of the equipment
c)	Carry out an electrical safety test on the equipment
d)	Refer to manufacturer's instructions for the equipment

Question 9	
An operative is working near noisy plant or equipment. If the operative doubles their distance from the plant/equipment, what is the effect of the noise exposure on the operative?	
Possible answers	
a)	The noise exposure halves
b)	The noise exposure doubles
c)	The noise exposure minimises
d)	There is no difference in the noise exposure

Question 10	
Which ONE of the following regulations places a responsibility on an organisation for the notification of safety-related incidents?	
Possible answers	
a)	Gas Safety (Management) Regulations 1996
b)	Gas Safety (Installations and Use) Regulations 1998
c)	Provision and Use of Work Equipment Regulations 1998
d)	Reporting of Injuries, Diseases and Dangerous Occurrences Regulations 2013

Question 11	
What colour band is the dry powder fire extinguisher?	
Possible answers	
a)	Blue
b)	Red
c)	Black
d)	Cream

Question 12	
A common unit of electric current is the:	
Possible answers	
a)	Ampere
b)	Ohm
c)	Volt
d)	Bar

Question 13	
The burner on a gas cooker has a yellow burner flame, which indicates:	
Possible answers	
a)	Stoichiometric combustion
b)	Incomplete combustion
c)	Zero combustion
d)	Complete combustion

Question 14	
The required accuracy of a water-filled manometer is:	
Possible answers	
a)	0.1 mbar
b)	0.2 mbar
c)	0.25 mbar
d)	0.5 mbar

Question 15	
The purpose of a main equipotential bonding is:	
Possible answers	
a)	it improves the efficiency of electrical installations within the property
b)	it reduces household costs through minimising wasted energy
c)	it improves the safety of installations
d)	it prevents pipework from corroding

Question 16	
A regulator is preventing the flow of gas downstream. What is this condition known as?	
Possible answers	
a)	Lock up
b)	Lock in
c)	Lock stop
d)	Lock down

Question 17	
What is achieved by undertaking a risk assessment on-site?	
Possible answers	
a)	Danger is eliminated on-site
b)	Hazards are removed on-site
c)	A site is made safe
d)	Site safety is improved

Question 18	
Which ONE of the following actions is lowest in the hierarchy of risk control?	
Possible answers	
a)	Control
b)	Eliminate
c)	Isolate
d)	Reduce

Question 19	
A risk assessment should consider the:	
Possible answers	
a)	outcome and frequency
b)	severity and likelihood
c)	difficulty and effect
d)	cost and efficiency

Question 20	
When should plant-avoidance equipment be used?	
Possible answers	
a)	After barholing the area
b)	Before breaking the surface of the ground
c)	Only when there are visible signs off plant in the ground
d)	Upon completion of works on site

Question 21	
An example of a control measure is:	
Possible answers	
a)	Undertaking a risk assessment
b)	Getting someone else to do the job
c)	Deferring the job to a later date
d)	Re-designing the job

Question 22	
Which ONE of the following agreements with the landowner contains the rights of access to carry out maintenance and refurbishment work?	
Possible answers	
a)	Rights of access agreements
b)	Wayleaves or easements
c)	Pipeline Safety Regulations 1996 (PSR)
d)	Gas Safety (Management) Regulations 1996 (GSMR)

Question 23	
Prior to commencement of any excavation work, what activity must be completed on site?	
Possible answers	
a)	A hazard assessment below ground
b)	A visual inspection below ground
c)	Site protection through the use of fencing
d)	Location and identification of any below-ground apparatus

Question 24	
Where an operative's work encroaches on to a road or footway, what must be installed on the site to protect both the workers and members of the public?	
Possible answers	
a)	Signs, cones and barriers
b)	Traffic control systems
c)	Suitable signing, lighting and guarding system
d)	Safety measures in line with codes of practice

Question 25	
What is the diameter of the bag-off tube which is used on a mains diameter measuring 14 -18 inches?	
Possible answers	
a)	3 inches
b)	4 inches
c)	5 inches
d)	6 inches

Question 26	
What is the maximum differential pressure for both primary and secondary 18 inches E20a bags?	
Possible answers	
a)	75 mbar
b)	125 mbar
c)	150 mbar
d)	175 mbar

Question 27	
What is the typical low alarm level for methane on a personal atmosphere monitor?	
Possible answers	
a)	20 parts per million (ppm)
b)	2% LEL of the lower explosive limit (LEL)
c)	20% LEL of the lower explosive limit (LEL)
d)	50% LEL of the lower explosive limit (LEL)

Question 28		
What does the following displayed sign mean?		
Possible answers		
a)	ATEX certified equipment only	
b)	DSEAR regulations apply	
c)	Warning – explosive gas	
d)	Warning – explosive atmosphere	

Question 29	
What type of pipeline techniques are aerial, vantage point, and line walk?	
Possible answers	
a)	Pressure Systems Safety regulations (PSSR) inspection
b)	Risk prioritisation survey
c)	Pipeline-safety inspection
d)	Route survey

Question 30	
What could be the consequence of selecting and applying a squeeze-off standard dimensional ratio (SDR) stop that is too small for the diameter of pipe being squeezed off?	
Possible answers	
a)	The squeeze-off would not seal properly
b)	Excessive stress on the pipeline that could lead to failure
c)	A longer re-rounding period would be required
d)	There will be minimal effect unless SDR 17.6 was selected

Question 31	
Identify the activity that would require a Permit to Work.	
Possible answers	
a)	Investigating a gas escape
b)	Testing instrumentation
c)	Working on the highway
d)	Working in a deep excavation

Question 32	
Why is it important to brace the cap and gland assembly during CCTV surveys?	
Possible answers	
a)	To prevent the cap moving
b)	The prevent the cap from staying on
c)	To prevent the survey from being delayed
d)	To prevent the cap coming off and releasing gas

Question 33	
For what purpose is Cathodic Protection (CP) used?	
Possible answers	
a)	Condition monitoring
b)	Corrosion control
c)	Voltage insulation
d)	Earthing

Question 34	
An operative has undertaken work on a plastic-coated steel pipeline. What must be applied to the pipe before work is completed?	
Possible answers	
a)	Paint
b)	Sacrificial anodes
c)	Corrosion protection
d)	A wind and water line wrap

Question 35	
Which ONE of the following would indicate that the sealant packings on a small-bore drill are **NOT** sealing?	
Possible answers	
a)	An increase in gas pressure in the drill housing
b)	Gas would leak out from the body of the drill
c)	There would be no noticeable effect
d)	There would be greater resistance encountered due to the pressure

Question 36	
What is the minimum distance that a 2-inch THREAD-O-RING™ (TOR) equalisation point can be installed from the stopple tee?	
Possible answers	
a)	1 x the nominal diameter
b)	2 x the nominal diameter
c)	3 x the nominal diameter
d)	4 x the nominal diameter

Question 37	
An operative is working on pressure control equipment adjacent to the highway and the work encroaches on to a footway. What must be installed to protect workers and members of the public?	
Possible answers	
a)	500 mm cones
b)	Traffic lights
c)	Warning notices
d)	Signing, lighting and guarding

Question 38	
For persons working on gas pipelines, when do the Construction (Design and Management) Regulations 2015 apply?	
Possible answers	
a)	At all times
b)	When notification is required to the HSE
c)	When projects are more than 50 days in length
d)	Where projects exceed 300 person-days

Question 39	
Select the correct telephone number for Emergency Services.	
Possible answers	
a)	111
b)	999
c)	Either 111 or 999
d)	0800 111999

Question 40	
Which organisation has a duty to coordinate the undertaking of street works?	
Possible answers	
a)	The police
b)	Local authorities
c)	The Department of Transport
d)	Utility companies are required to coordinate amongst themselves

Question 41	
A requirement of the Pressure Systems Safety Regulations 2000 (PSSR) is that pipelines should routinely be checked for:	
Possible answers	
a)	Leakage
b)	Over pressurisation
c)	Corrosion of defects
d)	Inadequate support

Question 42	
When should a ‘category B’ fault repair be completed following a Pressure Systems Safety Regulations 2000 (PSSR) inspection?	
Possible answers	
a)	Immediately
b)	Within 14 days
c)	Within 12 months
d)	As per the routine maintenance schedule

Question 43	
Which ONE of the following options is a true statement about corrosion on a pressure reduction installation?	
Possible answers	
a)	All identified corrosion needs to be repaired
b)	All corrosion can lead to a gas escape
c)	All corrosion is easily visible
d)	All corrosion needs to be monitored

Question 44	
What should be confirmed when visually inspecting a gas appliance?	
Possible answers	
a)	The appliance is clean, and dirt is not visible
b)	The flame picture is blue, vibrant, and stable
c)	The customer has a record of the appliance being maintained
d)	The customer has a carbon monoxide alarm installed close to the appliance

Question 45	
An existing 35 mm diameter downstream installation has appliances connected, has an E6 ultrasonic meter installed and there is no reported smell of gas. What is the maximum permissible drop in pressure over a 2 minute period?	
Possible answers	
a)	0 mbar
b)	1 mbar
c)	4 mbar
d)	8 mbar

Question 46	
Vehicles stopping on the public highway for works purposes should have:	
Possible answers	
a)	flashing amber lights
b)	roof-mounted flashing amber lights
c)	chevron markings covering the entire rear of the vehicle
d)	rear chevron markings and roof-mounted flashing amber lights

Question 47	
The “Red Book” (Safety at Street Works and Road Works) states that the basic safety zone is made up of:	
Possible answers	
a)	the longways clearance and the sideways clearance
b)	the area covered by the lead-in taper through to the exit taper
c)	the work area and the space given for safe passage of pedestrians
d)	the lead-in taper, the longways clearance, the sideways clearance, the exit taper

Question 48	
Which ONE of the following safety configurations is required for a gas installation with an inlet pressure of 1.75 bar?	
Possible answers	
a)	1 control device
b)	1 control device and 1 safety device
c)	1 control device and 2 safety devices
d)	2 control devices and 1 safety device

Question 49	
When natural gas is escaping, how will it disperse from the source of the leak?	
Possible answers	
a)	It will rise upwards
b)	It will travel horizontally
c)	It will fall towards the ground
d)	It will remain in the area it leaked from

Question 50	
Which regulation states the requirements for Flow Weighted Average Calorific Value (FWACV)?	
Possible answers	
a)	Pressure Systems Safety Regulations 2000 (PSSR)
b)	Pipelines Safety Regulations 1998 (PSR)
c)	Gas Safety (Management) Regulations 1996 (GSMR)
d)	Provision and Use of Work Equipment Regulations 1998 (PUWER)

End of Questions

Pipelines Maintenance Answers

Question	Answer	Question	Answer
1	A	**26**	D
2	C	**27**	C
3	A	**28**	D
4	D	**29**	D
5	C	**30**	B
6	A	**31**	D
7	D	**32**	D
8	B	**33**	B
9	A	**34**	C
10	D	**35**	B
11	A	**36**	B
12	A	**37**	D
13	B	**38**	A
14	D	**39**	B
15	C	**40**	B
16	A	**41**	A
17	D	**42**	C
18	A	**43**	D
19	B	**44**	B
20	B	**45**	C
21	D	**46**	D
22	B	**47**	D
23	D	**48**	B
24	C	**49**	A
25	B	**50**	C

Level: 3
Gas Network Craftsperson
Pathway: Emergency Response
Paper Code: Practice paper

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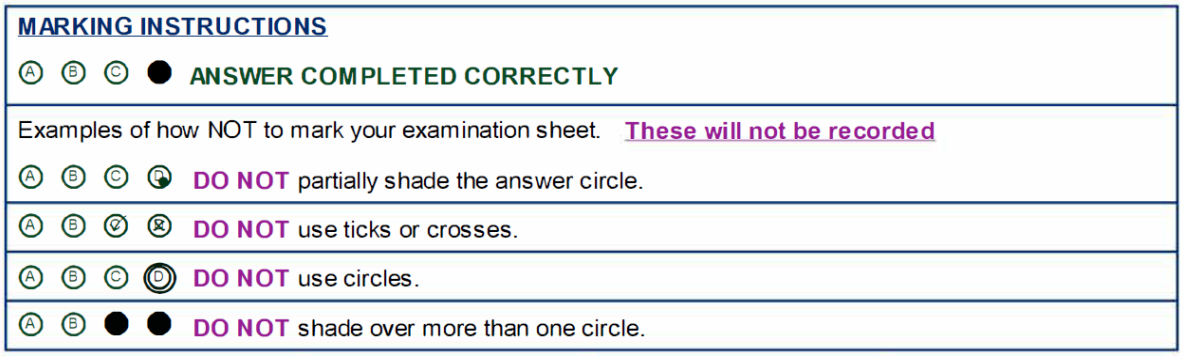

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Question 1	
According to the GSMR (Gas Safety (Management) Regulations 1996), where would an operative locate the emergency control valve?	
Possible answers	
a)	At the end of a service pipe
b)	At the inlet to a meter
c)	At least 250 mm above ground level
d)	Within 1 m of a service pipe entering a property

Question 2	
What is the usual operating pressure of a low-pressure gas installation?	
Possible answers	
a)	19 mbar ± 2 mbar
b)	20 mbar ± 2 mbar
c)	21 mbar ± 2 mbar
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Which ONE of the following statements is correct about health and safety?	
Possible answers	
a)	An individual's behaviour is a major contributory factor to accidents
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What action should be taken when coming into contact with asbestos at work?	
Possible answers	
a)	Work cautiously on an identified asbestos gas main
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What colour and shape are the hazard markings used for the Control of Substances Hazardous to Health (COSHH)?	
Possible answers	
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b)	Square - Orange and Black
c)	Diamond - Red Border
d)	Round - Red Border

Question 6	
The Provision and Use of Work Equipment Regulations (PUWER) includes a requirement for which ONE of the following topics?	
Possible answers	
a)	The retention of inspection and maintenance records
b)	Instructions for the regular replacement of equipment
c)	Controls to prevent employees using equipment in an unsafe manner
d)	Arrangements for users to carry out the annual maintenance of equipment

Question 7	
An operative is using a piece of equipment and it leaks oil on to the ground. What must the operative do?	
Possible answers	
a)	Wash the oil leak away
b)	Stop the oil leak and wipe it up
c)	Immediately report the oil leak
d)	Contain the oil leak, clean it up and report it

Question 8	
Prior to using electrical equipment, what are users required to do?	
Possible answers	
a)	Review test certificates for the equipment
b)	Visually check the condition of the equipment
c)	Carry out an electrical safety test on the equipment
d)	Refer to manufacturer's instructions for the equipment

Question 9	
An operative is working double the distance from a noisy plant or equipment, what is the effect of the noise exposure on the operative?	
Possible answers	
a)	The noise exposure halves
b)	The noise exposure doubles
c)	The noise exposure minimises
d)	There is no difference in the noise exposure

Question 10	
Which ONE of the following regulations places a responsibility on an organisation for the notification of safety-related incidents?	
Possible answers	
a)	Gas Safety (Management) Regulations 1996
b)	Gas Safety (Installations and Use) Regulations 1998
c)	Provision and Use of Work Equipment Regulations 1998
d)	Reporting of Injuries, Diseases and Dangerous Occurrences Regulations 2013

Question 11	
What colour band is the dry powder fire extinguisher?	
Possible answers	
a)	Blue
b)	Red
c)	Black
d)	Cream

Question 12	
A common unit of electric current is the:	
Possible answers	
a)	Ampere
b)	Ohm
c)	Volt
d)	Bar

Question 13	
The burner on a gas cooker has a yellow burner flame, which indicates:	
Possible answers	
a)	Stoichiometric combustion
b)	Incomplete combustion
c)	Zero combustion
d)	Complete combustion

Question 14	
The required accuracy of a water-filled manometer is:	
Possible answers	
a)	0.1 mbar
b)	0.2 mbar
c)	0.25 mbar
d)	0.5 mbar

Question 15	
The purpose of a main equipotential bonding is:	
Possible answers	
a)	it improves the efficiency of electrical installations within the property
b)	it reduces household costs through minimising wasted energy
c)	it improves the safety of installations
d)	it prevents pipework from corroding

Question 16	
A regulator is preventing the flow of gas downstream. What is this condition known as?	
Possible answers	
a)	Lock up
b)	Lock in
c)	Lock stop
d)	Lock down

Question 17	
What is achieved by undertaking a risk assessment on-site?	
Possible answers	
a)	Danger is eliminated on-site
b)	Hazards are removed on-site
c)	A site is made safe
d)	Site safety is improved

Question 18	
Which ONE of the following actions is lowest in the hierarchy of risk control?	
Possible answers	
a)	Control
b)	Eliminate
c)	Isolate
d)	Reduce

Question 19	
A risk assessment should consider the:	
Possible answers	
a)	outcome and frequency
b)	severity and likelihood
c)	difficulty and effect
d)	cost and efficiency

Question 20	
When undertaking a risk assessment, how is a risk score calculated?	
Possible answers	
a)	Hazard × risk
b)	Severity × likelihood
c)	Outcome × likelihood
d)	Hazard × severity

Question 21	
An example of a control measure is:	
Possible answers	
a)	Undertaking a risk assessment
b)	Getting someone else to do the job
c)	Deferring the job to a later date
d)	Re-designing the job

Question 22	
When should plant-avoidance equipment be used?	
Possible answers	
a)	After barholing the area
b)	Before breaking the surface of the ground
c)	Only when there are visible signs off plant in the ground
d)	Upon completion of works on site

Question 23	
Plant detection equipment should only be used when:	
Possible answers	
a)	it is less than 5 years old
b)	it is within its ‘calibration due’ date
c)	It is known that there is buried plant in the vicinity
d)	working in the public highway

Question 24	
When can CAT (Cable Avoidance Tool) and Genny (Signal Generator) equipment be used in an environment with gas readings above 20% of the lower explosive limit (LEL)?	
Possible answers	
a)	They can never be used
b)	With the permission of a manager
c)	When there is movement of air
d)	When gas readings are falling

Question 25	
Select the correct telephone number for Emergency Services?	
Possible answers	
a)	111
b)	999
c)	Either 111 or 999
d)	0800 111999

Question 26	
Which organisation has a duty to coordinate the undertaking of street works?	
Possible answers	
a)	The police
b)	Local authorities
c)	The Department of Transport
d)	Utility companies amongst themselves

Question 27	
What is the typical low alarm level for methane on a personal atmosphere monitor?	
Possible answers	
a)	20 parts per million (ppm)
b)	2% LEL of the lower explosive limit (LEL)
c)	20% LEL of the lower explosive limit (LEL)
d)	50% LEL of the lower explosive limit (LEL)

Question 28	
The correct order of priority actions when dealing with a reported gas escape is:	
Possible answers	
a)	Safeguard life Safeguard property Locate and secure the escape Carry out final site investigation Report status of work
b)	Locate and secure the escape Safeguard life Safeguard property Report status of work Carry out final site investigation
c)	Safeguard life Safeguard property Locate and secure the escape Report status of work Carry out final site investigation
d)	Report status of work Locate and secure the escape Safeguard life Safeguard property Carry out final site investigation

Question 29	
An operative is responding to a public reported escape. Where should the external survey be undertaken?	
Possible answers	
a)	Either side of the reported location
b)	Either side and opposite of the reported location
c)	In front of the property where the escape was reported
d)	At both ends of the street

Question 30	
It is permissible to turn on the gas supply following a gas escape on an internal installation when:	
Possible answers	
a)	the operative is instructed to do so by a manager
b)	gas readings have fallen to below 2% of the (LEL) lower explosive limit
c)	requested to do so by the customer
d)	the cause of the escape has been repaired

Question 31	
A gas escape has been brought under control by turning off the emergency control valve (ECV). What other action should be taken to remove any build-up of gas?	
Possible answers	
a)	Open doors and windows
b)	Turn on extractor fans
c)	Open the taps on gas alliance
d)	Close all doors and windows

Question 32	
A gas escape is reported outside of a property. Upon arrival on site, what should the first action be?	
Possible answers	
a)	Carry out a full external site investigation
b)	Find and secure the gas escape
c)	Turn off all visible gas supplies
d)	Attempt to access the property where the escape was reported

Question 33	
The GSMR (Gas Safety (Management) Regulations 1996) permits a gas conveyor to defer the repair of a gas escape based upon a risk-based prioritisation system, provided that:	
Possible answers	
a)	the training of the individuals who deferred the gas escape was sufficient to ensure that they were aware of the prioritisation system
b)	the governance of the individuals who deferred the gas escape was sufficient to ensure that they applied the prioritisation system correctly
c)	the competence assurance of the individuals who deferred the gas escape was sufficient to ensure that they were aware of the prioritisation system
d)	the training, competence assurance and governance of the individuals who deferred the gas escape was sufficient to ensure that they applied the prioritisation system correctly

Question 34	
A gas conveyor can decide **not** to prevent a gas escape within the required timescale under the Gas Safety (Management) Regulations. What is this known as?	
Possible answers	
a)	A delayed repair to gas escape
b)	A deferred repair to a gas escape
c)	A postponed repair to a gas escape
d)	A deviation to the repair of a gas escape

Question 35	
According to gas pipework installations, which ONE of the following statements applies to union joints and connections?	
Possible answers	
a)	They must be steel-faced
b)	They must be made using a washer
c)	They must be ground-faced or compression
d)	They must be brass-faced or compression

Question 36	
What colour is the ‘O’ ring, inside the copper pressed joints, that indicate the joint is suitable for gas?	
Possible answers	
a)	Black or blue
b)	Blue or green
c)	Red or blue
d)	Yellow or tan

Question 37	
What should be confirmed when visually inspecting a gas appliance?	
Possible answers	
a)	The appliance is clean, and dirt is not visible
b)	The flame picture is blue, vibrant, and stable
c)	The customer has a record of the appliance being maintained
d)	The customer has a carbon monoxide alarm installed close to the appliance

Question 38	
An existing 35 mm diameter downstream installation has appliances connected, has an E6 ultrasonic meter installed and there is no reported smell of gas. What is the maximum permissible drop in pressure over a 2 minute period?	
Possible answers	
a)	0 mbar
b)	1 mbar
c)	4 mbar
d)	8 mbar

Question 39	
What type of gas appliance may be fitted in a bathroom?	
Possible answers	
a)	Enclosed
b)	Flueless
c)	Open flued
d)	Room sealed

Question 40	
How would an operative determine that a relief valve on a medium-pressure (MP) regulator has opened?	
Possible answers	
a)	By using a manometer
b)	By listening to the relief tube
c)	By immersing the relief tube in water
d)	By checking for a pressure drop on the gauge

Question 41	
Cooking appliances, hotplates, grills, and ovens should not be fitted in bedrooms, but can be fitted in bed-sitting rooms. What must the volume of the bed-sitting room be?	
Possible answers	
a)	Minimum 11 m^3
b)	More than 11 m^3
c)	Minimum 20 m^3
d)	At least 20 m^3

Question 42	
Select the option that accurately reflects the common symptoms of carbon monoxide poisoning.	
Possible answers	
a)	Headache, nausea, shivering
b)	Headache, dizziness, nausea
c)	Dizziness, unsteady, aching
d)	Nausea, sweating, tiredness

Question 43	
Exposure to carbon monoxide may be particularly dangerous for:	
Possible answers	
a)	children and older adults
b)	children and teenagers
c)	people who are unfit
d)	people who have open wounds

Question 44	
Vehicles stopping on the public highway for works purposes should have:	
Possible answers	
a)	flashing amber lights
b)	roof-mounted flashing amber lights
c)	chevron markings covering the entire rear of the vehicle
d)	rear chevron markings and roof-mounted flashing amber lights

Question 45	
What is an acceptable method to prevent signing, lighting, and guarding equipment from being blown over or out of position by wind or passing vehicles?	
Possible answers	
a)	Road pins
b)	Barrels filled with concrete
c)	Excavated material and spoil
d)	Sacks containing granular material

Question 46	
What is the stated aim of the New Road and Street Works Act?	
Possible answers	
a)	To give local authorities the power to ensure that road works are properly protected and reinstated upon completion
b)	To balance the need for street works with the right of road users to expect minimum disruption
c)	To protect the public and workforce from danger when street works are undertaken
d)	To ensure that utility companies liaise to minimise disruption to road users and to minimise damage to utility apparatus

Question 47	
The “Red Book” (Safety at Street Works and Road Works) states that the basic safety zone is made up of:	
Possible answers	
a)	the longways clearance and the sideways clearance
b)	the area covered by the lead-in taper through to the exit taper
c)	the work area and the space given for safe passage of pedestrians
d)	the lead-in taper, the longways clearance, the sideways clearance, the exit taper

Question 48	
Greater controls are necessary when barholing in the vicinity of:	
Possible answers	
a)	Exposed cables
b)	High voltage cables
c)	Low voltage cables
d)	Streetlamp cables

Question 49	
Which form of injury is most likely if a cable is pierced by a sharp object such as a barhole tool?	
Possible answers	
a)	Burns
b)	Paralysis
c)	Electric shock
d)	Hearing damage

Question 50	
Plant detection equipment has limitations. It will:	
Possible answers	
a)	not detect plastic pipes
b)	always give accurate indications
c)	only work if the batteries are new
d)	not work beyond the ‘calibration due’ date

End of Questions

Emergency Response Answers

Question	Answer	Question	Answer
1	A	**26**	B
2	C	**27**	C
3	A	**28**	A
4	D	**29**	B
5	C	**30**	D
6	A	**31**	A
7	D	**32**	D
8	B	**33**	D
9	A	**34**	B
10	D	**35**	C
11	A	**36**	D
12	A	**37**	B
13	B	**38**	C
14	D	**39**	D
15	C	**40**	C
16	A	**41**	D
17	D	**42**	B
18	A	**43**	A
19	B	**44**	D
20	B	**45**	D
21	D	**46**	B
22	B	**47**	D
23	B	**48**	B
24	C	**49**	A
25	B	**50**	A

Energy & Environment Awards Knowledge and Skills Assessment Example answer Sheet

SAMPLE ANSWER SHEET

ENERGY & ENVIRONMENT AWARDS

Candidate ID ..... Attempt .....

Last Name .....

First Name .....

Exam Date ..... Paper .....

Centre Name .....

Centre Number .....

MARKING INSTRUCTIONS

Answers should be completed using a HB pencil.

A B C ● **ANSWER COMPLETED CORRECTLY**

Examples of how NOT to mark your examination sheet. These will not be recorded

A B C ◔ **DO NOT** partially shade the answer circle.

A B ✓ ✗ **DO NOT** use ticks or crosses.

A B C ○ **DO NOT** use circles.

A B ● ● **DO NOT** shade over more than one circle.

1 A B C D	21 A B C D	41 A B C D
2 A B C D	22 A B C D	42 A B C D
3 A B C D	23 A B C D	43 A B C D
4 A B C D	24 A B C D	44 A B C D
5 A B C D	25 A B C D	45 A B C D
6 A B C D	26 A B C D	46 A B C D
7 A B C D	27 A B C D	47 A B C D
8 A B C D	28 A B C D	48 A B C D
9 A B C D	29 A B C D	49 A B C D
10 A B C D	30 A B C D	50 A B C D
11 A B C D	31 A B C D	
12 A B C D	32 A B C D	
13 A B C D	33 A B C D	
14 A B C D	34 A B C D	
15 A B C D	35 A B C D	
16 A B C D	36 A B C D	
17 A B C D	37 A B C D	
18 A B C D	38 A B C D	
19 A B C D	39 A B C D	
20 A B C D	40 A B C D	

Appendix D - Level 3 Gas Network Craftsperson Practical Observation and Planning Form

Instructions

This form has two purposes:

1. To help you plan a practice Practical Observation for your apprentices
2. To inform Energy & Environment Awards of the proposed task(s) for the live assessment

The apprentice is assessed in either the workplace or a simulated environment that reflects the real working environment appropriate to the task(s) and risk involved, with the exception of not necessarily being connected to a live gas network.

The time allocated per pathway is no longer than:

- Network maintenance craftsperson (electrical & instrumentation) – 9 hours +/-10%
- Network maintenance craftsperson (pressure management) – 12 hours +/-10%
- Network pipelines maintenance craftsperson – 12 hours +/-10%
- Emergency response craftsperson - 12 hours +/-10%

The time is typically split across a maximum of three days. The actual time allowed will be based on the comparable time an industry competent worker would take to achieve successful task(s) completion

Equipment and resources needed for the assessment must be in good and safe working condition.

The activities should be designed to assess a broad range of the skills, knowledge and behaviours developed over the period of the apprenticeship. However, as a minimum the practical observation must cover the activities and KSBs listed in the Planning Form below.

Energy & Environment Awards offers a service to review the employer/training provider's Practical Observation task brief.
Task variations: If you have more than one apprentice being assessed, use the "Practical Task variations" section of the form to indicate what the task variations that will be put in place so that apprentices are not asked to complete identical tasks.

Complete the ‘Level 3 Gas Network Craftsperson Planning Form’ and submit it to the Service Delivery team via enquiries@energyenvironmentawards.co.uk, for **review 1 month before the start** of the end-point assessment.

Level 3 Gas Network Craftsperson Engineer Practical Observation Planning Form

Employer name and site address:	
Training provider (if applicable)	
Standard:	**Gas Network Craftsperson**
Pathways: (Select a pathway)	**Electrical and Instrumentation ☐** **Pressure Management ☐** **Pipelines Maintenance ☐** **Emergency Response ☐**
Level	**3**
Location of practical	
Summary of activity: Please provide a brief summary of the overall task/s to be completed during the assessment period	
Contact Details: Employer/training provider representative, email address and contact number overseeing the setup of the competency test (documents and site).	
Date submitted to Energy & Environment Awards	

Estimated total duration of practical task(s) must be carried out over a maximum work time as shown below for each pathway, these could be delivered over a maximum of three days due to the safety critical nature of the activities:

- Network maintenance craftsperson (electrical & instrumentation) – 9 hours +/-10%
- Network maintenance craftsperson (pressure management) – 12 hours +/-10%
- Network pipelines maintenance craftsperson – 12 hours +/-10%
- Emergency response craftsperson - 12 hours +/-10%

Please state time for the selected pathway practical task(s) below:

_____

Practical Observation Checklist

This checklist will assist the employer and/or training provider with planning the activity. Please confirm all required elements are covered:

Core skills to be covered in the task	Covered on activity
Please use the space below to provide a summary of the planned practical observation activities for each criteria.	
Explain how the apprentice will meet: **S1** Undertake and document risk assessments in accordance with company procedures	☐
Explain how the apprentice will meet: **S2:** Comply with workplace health, safety and environmental practices and regulations, maintaining a safe and secure working environment	☐

Core skills to be covered in the task	Covered on activity
Explain how the apprentice will meet: **S3:** Follow engineering instructions and company procedures to complete tasks safely and on-time	☐
Explain how the apprentice will meet: **S4**: Undertake inspection and examination of network assets in order to maintain the safe and compliant operation of the network to ensure the integrity, safety and security of supply	☐
Explain how the apprentice will meet: **S5:** Maintain and/or install gas engineering assets, components and associated equipment	☐
Explain how the apprentice will meet: **S6:** Install, test, purge and commission gas network assets	☐
Explain how the apprentice will meet: **S7:** Operate powered tools, such as drills, angle grinders, brush cutters and shot blasting equipment as required for network maintenance operations	☐
Explain how the apprentice will meet: **S8:** Use approved gas detection equipment to ensure safe environment	☐

Core skills to be covered in the task	Covered on activity
Explain how the apprentice will meet: **S9:** Use Personal Protective Equipment (PPE) and safety equipment in accordance with manufacturer's instructions and employer policy	☐
Explain how the apprentice will meet: **S10:** Obtain and analyse asset condition and performance information to facilitate decision making	☐
Explain how the apprentice will meet: **S11:** Identify, organise and use resources effectively to complete tasks, with consideration for cost, quality, safety, security and environmental impact	☐
Explain how the apprentice will meet: **S13:** Accurately record job information, complete job reports and process	☐

Core Behaviours to be covered in the task	Covered on activity
Please use the space below to provide a summary of the planned practical observation activities for each criteria.	
Explain how the apprentice will meet: **B1** Display a self-disciplined, self-motivated approach	☐

Core Behaviours to be covered in the task	Covered on activity
Explain how the apprentice will meet: **B3** Demonstrate and apply a safety first approach	☐
Explain how the apprentice will meet: **B4** Accept accountability when undertaking individual and team tasks	☐
Explain how the apprentice will meet: **B5:** Follow instructions from appropriate supervision, and makes decisions when required	☐
Explain how the apprentice will meet: **B6:** Quality-focussed and professional in work and in personal standards	☐
Explain how the apprentice will meet: **B8:** Accepts responsibility for work undertaken	☐

PLUS Select the Pathway Specialist Role Skills to be covered in the task	

Pathway: Network Maintenance Craftsperson - Electrical and Instrumentation task	Covered on activity
Electrical and Instrumentation Apprentice will be observed undertaking:	
Please use the space below to provide a summary of the planned practical observation activities for each criteria.	
Explain how the apprentice will meet: **NMCEi1:** Apply electrical theories and principles and use equipment to carry out diagnostic fault finding procedures	☐
Explain how the apprentice will meet: **NMCEi2:** Inspect, maintain, repair, overhaul test and calibrate instrumentation and control equipment and circuits in accordance with company procedures	☐
Explain how the apprentice will meet: **NMCEi4:** Carry out cable testing across a range of voltages to ensure safety and suitability for use	☐
Explain how the apprentice will meet: **NMCEi5:** Install, maintain and dismantle instruments, controllers, probes, attachments, cabling, meters and display units	☐
Explain how the apprentice will meet: **NMCEi9:** Repair, maintain, configure and calibrate field instrumentation, communication devices and associated equipment used in system and process control	☐

Pathway: Network Maintenance Craftsperson - Electrical and Instrumentation task	Covered on activity
Explain how the apprentice will meet: **NMCEi12:** Carry out isolation procedures to ensure process or system stability and the safety of personnel when carrying out operations	☐
Explain how the apprentice will meet: **NMCEi15:** Apply electrical knowledge and skills to install, maintain and dismantle a wide range of plant, machinery and components	☐

Pathway: Network Maintenance Craftsperson – Pressure Management task	Covered on activity
Pressure Management Apprentice will be observed undertaking:	
Please use the space below to provide a summary of the planned practical observation activities for each criteria.	
Explain how the apprentice will meet: **NMCPM1:** Apply mechanical theories and principles for example thermo dynamics and laminar flow theories, in order to carry out diagnostic fault finding procedures	☐
Explain how the apprentice will meet: **NMCPM2:** Carry out remote pressure monitoring & control on the gas network	☐
Explain how the apprentice will meet: **NMCPM3:** Inspect and monitor mechanical systems and equipment in order to ensure safety and suitability for service	☐

Pathway: Network Maintenance Craftsperson – Pressure Management task	Covered on activity
Explain how the apprentice will meet: **NMCPM5:** Maintain, dismantle and repair mechanical equipment and components	☐
Explain how the apprentice will meet: **NMCPM7:** Assist in installing mechanical systems and equipment	☐
Explain how the apprentice will meet: **NMCPM8:** Install, maintain and dismantle a wide range of complex plant, machinery and components including pressure regulators, safety devices, system protection devices and monitoring equipment	☐
Explain how the apprentice will meet: **NMCPM10:** Interpret plans and drawings to install, position or re-locate mechanical equipment and components	☐
Explain how the apprentice will meet: **NMCPM11:** Test, service and repair mechanical equipment as part of planned preventative maintenance and/or reactive maintenance programmes	☐
Explain how the apprentice will meet: **NMCPM12:** Install mechanical components including regulators, filters, valves, compressor equipment	☐

Pathway: Network Maintenance Craftsperson – Pressure Management task	Covered on activity
Explain how the apprentice will meet: **NMCPM26** The safety processes to be followed when planning to access pressure control equipment	☐

Pathway: Network Pipelines Maintenance Craftsperson – Specialist Role Skills to be covered in the task:	Covered on activity
Pipelines Maintenance Apprentice will be observed undertaking:	
Please use the space below to provide a summary of the planned practical observation activities for each criteria.	
Explain how the apprentice will meet: **NPMC1** Apply non-destructive testing theories and principles in order to carry out diagnostic fault finding procedures	☐
How will the apprentice meet: **NPMC2** Apply the theories and principles of integrity testing, purging commissioning and de-commission of gas pipelines and associated equipment and components	☐
How will the apprentice meet: **NPMC3** Inspect, monitor, maintain, dismantle, install and repair pipeline systems and equipment for example, flow regulators, safety devices, system protection devices, measurement devices and monitoring equipment	☐

Pathway: Network Pipelines Maintenance Craftsperson – Specialist Role Skills to be covered in the task:	Covered on activity
How will the apprentice meet: **NPMC4** Remove, repair and replace components of gas transportation pipelines and associated equipment	☐
How will the apprentice meet: **NPMC6** Take action to prevent third parties causing damage to gas transportation pipeline assets and equipment i.e., tracing, marking, monitoring third party activities and responding to encroachments	☐
How will the apprentice meet: **NPMC9** Interpret plans and drawings to install, position or re-locate pipeline equipment and components	☐
How will the apprentice meet: **NPMC10** Test, service and repair pipeline equipment as part of planned preventative maintenance and/or reactive maintenance programmes	☐
How will the apprentice meet: **NPMC11** Operate specialised tools and equipment for pipeline maintenance operations for example, in line inspection tools, damage assessment, intelligent pigging, valve repairs, flow stopping and under pressure drilling	☐

Pathway: Emergency Response Craftsperson – Specialist Role Skills to be covered in the task:	Covered on activity
Emergency Response Apprentice will be observed undertaking:	
Please use the space below to provide a summary of the planned practical observation activities for each criteria.	
How will the apprentice meet: **NERC1** Respond to public reported upstream gas emergencies, including damage to or failure of gas mains and services that supply a consumer's premise	☐
How will the apprentice meet: **NERC2** Respond to public reported downstream gas emergencies, including reported gas escapes inside customers properties and reports of carbon monoxide	☐
How will the apprentice meet: **NERC3** Carry out site investigations in relation to gas emergencies, in line with company procedures	☐
How will the apprentice meet: **NERC4** Use gas detection equipment to identify gas concentrations	☐

Pathway: Emergency Response Craftsperson – Specialist Role Skills to be covered in the task:	Covered on activity
How will the apprentice meet: **NERC5** Interpret gas readings to determine the safety of the site	☐
How will the apprentice meet: **NERC6** Apply evacuation procedures where required	☐
How will the apprentice meet: **NERC7** Apply the industry unsafe situations procedures	☐
How will the apprentice meet: **NERC8** Install and exchange gas meters and pressure regulators	☐
How will the apprentice meet: **NERC9** Install domestic pipework	☐

Pathway: Emergency Response Craftsperson – Specialist Role Skills to be covered in the task:	Covered on activity
How will the apprentice meet: **NERC10** Tightness test, purge, commission and decommission domestic gas pipework	☐
How will the apprentice meet: **NERC11** Tightness test, purge, commission and decommission non-domestic gas pipework	☐
How will the apprentice meet: **NERC18** Understand how to identify gas appliances and installations that are not compliant with industry standards and may be deemed as unsafe	☐
How will the apprentice meet: **NERC19** Understand how to comply with the requirements of the Gas Industry Unsafe Situations Procedure, including RIDDOR reporting requirements	☐

Pathway: Emergency Response Craftsperson – Specialist Role Skills to be covered in the task:	Covered on activity
How will the apprentice meet: **NERC24** Understand when to liaise with emergency services and other statutory authorities as necessary	☐

Practical Task Variations - Describe how you can vary this task/s to ensure that the assessment does not become predictable. **Variation 1:** **Variation 2:** **Variation 3:**
Specific requirements (for example: authorisations/access arrangements/PPE):

Remember:

- The specific detail of the tasks to be undertaken should be **kept confidential from the apprentices**

Practical Task: Include relevant photographs to illustrate task(s)

Energy & Environment Awards Office use only

Date received	
Date signed off	

Appendix E: Practice Practical Tasks

End-point Assessment
Gas Network Craftsperson
Electrical and Instrumentation

Practical Tasks

Fault Diagnosis on Electrical and Instrumentation Equipment

Level 3

Practical Task Specification

This specification has been developed as part of the Gas Network Craftsperson Standard - Electrical and Instrumentation Pathway. The specification details the apprentice's required skills, knowledge, and behaviours on all the key aspects of the Gas Network Craftsperson - Electrical and Instrumentation activity.

The practical task should allow the apprentice to demonstrate the competence required to follow work instructions and specifications in order to diagnose faults and test electrical and instrumentation systems.

The practical task specification is the minimum core technical standard of these requirements, but this does not preclude employers from enhancing the skills and knowledge of the learner through additional or company specific assessment.

The practical task will enable an apprentice to demonstrate knowledge, skills, and behaviours which would be demonstrated by a competent network maintenance electrical and instrumentation craftsperson.

What does this practical task specification look like?

The apprentice must demonstrate their achievement of all practical task outcomes. This will be evidenced through the practical task observation, conducted in either the workplace or a simulated environment that reflect the real working environment appropriate to the task(s) and risk involved, with the exception of not necessarily being connected to a live gas network.

The practical task must be conducted under the supervision of an employer technical expert from the apprentice's employer. The employer technical expert will provide written instructions and brief the apprentice at the beginning of the task at per Energy & Environment Awards guidelines and is not allowed to discuss the task with the apprentice before, during or after the practical task.

The employer technical expert will write a factual account (facts, true details and provide exact examples observed on the day for the apprentice) of the practical task using Energy & Environment Awards documentation as per Energy & Environment Awards guidelines, therefore verifying whether the task was completed appropriately.

The practical task is administered by the employer, they will be trained by Energy & Environment Awards and for the purposes of end-point assessment the employer technical experts are accountable to Energy & Environment Awards. Further details in relation to the requirements of the employer technical expert are provided in this document see below section titled 'Technical Expert Requirements'.

Evidence of the apprentice's observation must be recorded on the assessment templates provided by Energy & Environment Awards and the completed documentation must be sent to Energy & Environment Awards Service Delivery team.

What does the practical task include?

Gas network craftsperson - electrical and instrumentation apprentices will be expected to:

- Work safely at all times
- Use company and / or manufacturers' drawings and maintenance documentation
- Adhere to procedures or systems in place for risk assessment, COSHH, personal protective equipment (PPE) and other relevant safety regulations
- Where appropriate, ensure the insertion, or program override, of any relevant system trip defeats (such as fire extinguishant, emergency shutdown)
- Provide and maintain safe access and working arrangements for the fault finding / maintenance area
- Where appropriate, use electrostatic discharge (ESD) precautions
- Carry out the fault diagnostic activities, using appropriate procedures
- Collect equipment fault diagnostic evidence from 'live' and isolated circuits
- Disconnect or isolate components to confirm the diagnosis
- Identify the fault and complete the appropriate corrective action
- Dispose of waste items in a safe and environmentally acceptable manner and leave the work area in a safe condition23

Realistic Working Environments (RWE) Centre Requirements

Centres are responsible for ensuring that the RWE practical tasks are suitably controlled to ensure that the factual account decision are valid and reliable, and that work carried out and submitted by the apprentice is prepared and produced by them independently, without assistance from others, and free of plagiarism.

The practical tasks must be designed following the guidance and requirements given in this document. The employer technical expert checklist must be adhered to and cannot be altered without prior written consent from Energy & Environment Awards.

Centres may deliver any number of the practical tasks together in combined assessment of their own design, but this must be in with the prior agreement with Energy & Environment Awards.

Where the combined option is used the performance and knowledge criteria for the practical task must be satisfied and the respective employer technical expert checklists must be completed.

The necessary operational procedures should be made available to the apprentice throughout the practical task process.

Practical Task Centre Requirements

The practical tasks requirements are in the following areas:

TTIEPA1 Fault diagnosis on instrumentation equipment
TTEEPA1 Fault diagnosis on electrical equipment

The practical task must be conducted under the supervision of a technical expert from the apprentice's employer. The employer technical expert will write a factual account of the practical task using Energy & Environment Awards documentation, therefore verifying whether the task was completed appropriately. The practical task is administered by the employer technical expert. The employer technical expert must be approved and trained by Energy & Environment Awards. The employer technical expert must be independent of the apprentice; please refer to the Gas Network Craftsperson Assessment Plan page 9 and Section 5 of the Specification for further details.

The practical task area must be designed to allow the apprentice to demonstrate the skills as prescribed in the performance criteria. Evidence for the practical aspects should be observed in the realistic working environment. The equipment used must be connected to the electrical supply and must include controls and cabling that is non-serviceable, allowing the apprentice to diagnose the faults and make repairs. A technical drawing of the proposed task must be made available to the apprentice.

The practical task area must allow or be designed to provide variability and must include a fault that can be rectified by adjustment or maintenance and another fault, which will require a component or cabling to be changed. On the employer expert technical checklist, the employer technical expert must describe the fault set that required adjustment or maintenance and the fault set that required a component or cable to be replaced. The practical task rig must therefore be capable of accommodating a number of differing faults to be set by the employer technical expert. The faults set must be recorded on the employer technical expert checklist.

Centres may create workbooks that will allow the apprentice to demonstrate their underpinning knowledge.

The equipment used for this practical task must be for the practical task purposes only and the apprentice must not have had prior access to this.

Each practical task must consist of three practical task components for fault diagnosis on instrumentation equipment and three practical task components for fault diagnosis on electrical equipment. Each practical task component being drawn from three different equipment categories as detailed in the 'scope' section of the practical task document.

The practical tasks must be carried over a maximum work time of 9 hours +/- 10% and the delivery time period must not exceed a maximum of three days due to the safety critical nature of the activities.

There may be breaks during the practical task to allow the apprentice to move from one location to another and breaks in line with working time regulations which must all be supervised. The employer technical expert must supervise the apprentice on a one-to one basis to maintain quality and rigour.

The area where the practical task is taking place must be designed to ensure the employer technical expert has full sight of the apprentices at all times during the practical task.

Apprentice Requirements

The apprentice must successfully complete all of the following:

- Ensure all health and safety requirements are observed throughout the practical task
- Complete a site specific risk assessment
- Select method statements appropriate for the activity
- Use company specific procedures
- Complete any documentation regarding, isolation, testing, commissioning and decommissioning of the apparatus
- Remove and replace a faulty component or cabling
- Complete all testing and commissioning requirements following the repair
- Reinstate the repaired system back to operational condition

Grading

Will take place during Session 1 of the technical interview, underpinned by the logbook. Session 1 will only focus on the practical task (post gateway evidence). The employer technical expert will complete a factual account of the practical task and submit the outcomes to Energy & Environment Awards for the independent assessor to review. The factual account of the task will be used to inform questioning in Session 1 of the interview. It must not be referenced in Session 2.

The independent assessor who conducts the interviews will combine the result of Session 1 (practical task – post gateway) and Session 2 (on-programme – post gateway) to determine the overall technical interview grade. A fail in either of the two sessions will result in the technical interview fail grade being awarded. The technical interview pass and distinction grading combinations are shown in table 5 of the Assessment Plan on page 19 and in Section 5 of the GNC Electrical and Instrumentation Specification.

Assessment Duration

The following are indicative durations for the completion of each practical task area:

TTIEPA1	Fault diagnosis on instrumentation equipment	4.5 hours
TTEEPA1	Fault diagnosis on electrical equipment	4.5 hours

Technical Expert Requirements

Apprentices carrying out the practical tasks will be observed by an Energy & Environment Awards approved employer technical expert. The employer technical expert:

- must be nominated by the apprentice's employer
- must demonstrate competence in gas network operations as conducted by the apprentice's employer, for example experience of working in the gas networks sector at level 3 or above
- must have completed a minimum of 2 days continuing professional development (CPD) relevant to gas networks in the last year
- may hold or be working towards a recognised assessor award, but must have received training from Energy & Environment Awards in terms of administering the practical task
- must complete a statement for submission with the apprentice's report as advised by Energy & Environment Awards
- must supervise the practical task
- must provide written instructions and brief the apprentice at the beginning of the task as per Energy & Environment Awards training but must not discuss the task with the apprentice before, during or after the practical task
- must complete a factual account of the practical task using Energy & Environment Awards approved documentation and as per Energy & Environment Awards's guidelines verifying whether the task was completed appropriately
- must provide technical information at the technical interview upon request
- must not have had any involvement with the apprentice's on-programme learning or training and must not guide the apprentice in anyway

Employer Technical Expert Checklist TTIEPA1 Fault diagnosis and repair of instrumentation equipment			
Apprentice Full Name:	Apprentice No:		
Date:	Employer Technical Expert Full Name:		
Job Number / Instrumentation type:			
Fault -			
Scope *(include work to be observed and add additional rows if required)*			

General *(include work to be observed and add additional rows if required)*	Achieved		Employer technical expert factual commentary. I saw the apprentice do the following:
	Yes	No	

Preparation *(include work to be observed and add additional rows if required)*	Achieved		Employer technical expert factual commentary. I saw the apprentice do the following:
	Yes	No	

Fault Diagnosis *(include work to be observed and add additional rows if required)*	Achieved		Employer technical expert factual commentary. I saw the apprentice do the following:
	Yes	No	

Repair and replacement of components *(include work to be observed and add additional rows if required)*	Achieved		Employer technical expert factual commentary. I saw the apprentice do the following:
	Yes	No	

In the box below the employer technical expert should:

1. Provide overall comments (breadth and depth), evidence and justification for the factual account (facts, true details and exact examples observed on the day for the apprentice) of this observation. This must include comments on the apprentice's knowledge, skills or performance and should relate to specific activities or elements.
2. If the apprentice has failed, identify the areas which were lacking and need improvement.
3. Capture and feedback from the apprentice where they feel they would like to make a comment.

Employer Technical Expert Signature:	

Employer Technical Expert Checklist TTEEPA1 Fault diagnosis on electrical equipment			
Apprentice Full Name:	Apprentice No:		
Date:	Employer Technical Expert Full Name:		
Job Number / Instrumentation type:			
Fault -			
Scope *(include work to be observed and add additional rows if required)*			
General *(include work to be observed and add additional rows if required)*	Achieved		Employer technical expert factual commentary. I saw the apprentice do the following:
	Yes	No	
Preparation *(include work to be observed and add additional rows if required)*	Achieved		Employer technical expert factual commentary. I saw the apprentice do the following:
	Yes	No	
Fault Diagnosis *(include work to be observed and add additional rows if required)*	Achieved		Employer technical expert factual commentary. I saw the apprentice do the following:
	Yes	No	
Repair and replacement of components *(include work to be observed and add additional rows if required)*	Achieved		Employer technical expert factual commentary. I saw the apprentice do the following:
	Yes	No	

In the box below the employer technical expert should:

1. Provide overall comments (breadth and depth), evidence and justification for the factual account (facts, true details and exact examples observed on the day for the apprentice) of this observation. This must include comments on the apprentice's knowledge, skills or performance and should relate to specific activities or elements.
2. If the apprentice has failed, identify the areas which were lacking and need improvement.
3. Capture and feedback from the apprentice where they feel they would like to make a comment.

Employer Technical Expert Signature:	

Summative Assessment Report		
Apprentice Full Name:		
Employer Technical Expert Full Name:		
Assessment Code	Assessment Description	Achieved
TTIEPA1	Fault diagnosis on instrumentation equipment	Yes / No
TTEEPA1	Fault diagnosis on electrical equipment	Yes / No
Assessment Code	Record any overall factual information (facts, true details and exact examples observed on the day for the apprentice) on the assessment outcome, this must be completed by the employer technical expert and must be specific to the apprentice.	
TTIEPA1		
TTEEPA1		

Full Name and Signatures		
By signing below, I confirm that the information provided is correct and is a true reflection of the performance by apprentice:		
Employer Technical Expert Full Name and Signature (Practice Practical Task):	Full Name: Signature:	Date:
Employer Technical Expert Full Name and Signature. (Practice Practical Task):	Full Name: Signature:	Date:
By signing below, I confirm that the information provided is correct and is a true reflection of the performance by the apprentice recorded by the employer technical expert:		
Independent Assessor Full Name and Signature.	Full Name:	Date:

(Technical interview - Session 1- Practice Practical Task):	Signature:	
QA Full Name and Signature.	Full Name:	Date:
	Signature:	

End-point Assessment
Gas Network Craftsperson
Network Maintenance Craftsperson
Pressure Management

Practical Tasks Factual Record

Level 3

Practical Task Specification

This specification has been developed as part of the Gas Network Craftsperson (GNC) Standard - Pressure Management Pathway. The specification details the apprentice's required skills, knowledge and behaviours on all the key aspects of the GNC Pressure Management activity.

This end-point assessment should allow the apprentice to demonstrate the competence required to follow work instructions and specifications in order to complete:

- The installation of a below 7 bar single stream regulator system, including all auxiliary controls and pipework
- Testing and commissioning of the installed single stream regulator system
- Completing functional checks on both below 7 bar and above 7 bar twin stream regulator installations
- The fault diagnosis and repair of a pressure control system, including component exchange

The practical task specification is the minimum core technical standard of these requirements, but this does not preclude employers from enhancing the skills and knowledge of the learner through additional or company specific training.

The practical task will enable an apprentice to demonstrate knowledge, skills, and behaviours which would be demonstrated by a competent Pressure Management Craftsperson.

Successful completion of this practical task should provide evidence that the apprentice has the required knowledge, understanding and performance skills.

What does this practical task specification look like?

To achieve the practical task the apprentice must demonstrate their achievement of all practical task outcomes. This practical task will be evidenced through practical task observation, these being delivered in the workplace under simulated conditions or alternatively in a realistic workplace environment. Evidence of the apprentice's achievement must be included in their work log or their portfolio.

What does the practical task include?

Gas Network Craftsperson – Pressure Management apprentices will be expected to demonstrate:

- Installing steel and stainless steel pipework and components:
  - Making screwed joints
  - Making flanged joints
  - Making compression joints
- Testing and commissioning of installed apparatus
- Fault diagnosis
- Safe isolation of components whilst maintaining supply
- Testing and commissioning of replacement components

Gas Network Craftsperson – Pressure Management apprentices will also be expected to successfully complete functional checks on a twin stream regulator, to include:

- Inlet valves
- Filters
- Slam shuts
- Monitor regulators
- Active regulators
- Creep reliefs
- Non-return valves
- Outlet valves

Realistic Working Environments (RWE) Centre Requirements

Centres are responsible for ensuring that the RWE practical tasks are suitably controlled to ensure that the factual account decisions are valid and reliable, and that work carried out and submitted by the apprentice is prepared and produced by them independently, without assistance from others, and free of plagiarism.

The practical tasks must be designed following the guidance and requirements given in this document. The employer technical expert checklist must be adhered to and cannot be altered without prior written consent from Energy & Environment Awards.

In the interest of safety, the systems used for practical task purposes should be supplied with air.

The necessary operational procedures should be made available to the apprentice throughout the practical task process

Centres may deliver any number of practical tasks together in combined assessment of their own design, but this must be in with the prior agreement with Energy & Environment Awards.

Where the combined option is used the performance and knowledge criteria for the practical task must be satisfied and the respective employer technical checklists must be completed.
The necessary operational procedures should be made available to the apprentice throughout the practical task process.

Practical Task Centre Requirements

The practical task requirements are in the following areas:

PMIEPA Installation and commissioning of a single stream regulator system
PMREPA Fault diagnosis and repair of a regulator system
PMA7EPA Functional checks on a twin stream regulator – above 7 bar
PMB7EPA Functional checks on a twin stream regulator – below 7 bar

The practical task must be conducted under the supervision of a technical expert from the apprentice's employer. The technical expert will write a factual account (facts, true details and exact examples observed on the day for the apprentice) of the practical task using Energy & Environment Awards documentation, therefore verifying whether the task was completed appropriately. The practical task is administered by the employer. The employer technical expert must be approved and trained by Energy & Environment Awards. The employer technical expert must be independent of the apprentice; please refer to the Gas Network Craftsperson Assessment Plan page 9 and Section 5 of the Specification for further details.

Installation and commissioning of a single stream regulator system

The practical task area must be designed to allow the apprentice to demonstrate the skills as prescribed in the performance criteria. Evidence for the practical aspects should be observed in the realistic working environment. The equipment used must be connected to the electrical supply and must include controls and cabling that is non-serviceable, allowing the apprentice to diagnose the faults and make repairs. A technical drawing of the proposed task must be made available to the apprentice.

Fault diagnosis and repair of a regulator system

The practical task for fault diagnosis and repair of a regulator system must be designed to allow variability and must include a fault which can be rectified by adjustment and another fault which will require a component to be changed, whilst maintaining supply. On the employer technical expert checklist, the employer

technical expert must describe the fault set that required adjustment and the fault set that required component change. The practical assessment rig must therefore be capable of accommodating a number of differing faults to be set by the assessor. The faults set must be recorded on the assessor checklist to demonstrate variability of the task from apprentice to apprentice.

Functional checks on a twin stream regulator above and below 7bar

This practical task must be designed to allow functional checks on the following components:

- Inlet valves
- Filters
- Slam shuts
- Monitor regulators
- Active regulators
- Creep reliefs
- Non-return valves
- Outlet valves

General requirements

Centres may create workbooks that will allow the apprentice to demonstrate their underpinning knowledge on method statements, testing and commissioning requirements etc. The same examples must not have been utilised as part of the apprentices training.

The equipment used for this practical task **must** be for practical task purposes only and the apprentice must not have had prior access to this.

Practical Task Duration

The following are indicative durations for the completion of each practical task area:

- PMIEPA Installation and commissioning of a single stream regulator system 4 hours
- PMREPA Fault diagnosis and repair of a regulator system 2 hours
- PMA7EPA Functional checks on a twin stream regulator – above 7 bar 1.5 hours
- PMB7EPA Functional checks on a twin stream regulator – below 7 bar 1.5 hours

Apprentice Requirements

To achieve a pass in the practical tasks the apprentice **must** complete all of the following:

- Ensure all health and safety requirements are observed throughout the assessment
- Complete a site specific risk assessment
- Select method statements appropriate for the activity
- Use company specific procedures
- Complete any calculations regarding testing, commissioning and decommissioning of the apparatus
- Construct the single stream regulator system including associated pipework
- Make joints using, screwed, flanged and compression techniques
- Pressure test and commission the installed equipment
- Complete functional checks on a twin stream regulator
- Carry out fault diagnosis on a twin stream pressure control system
- Remove and replace a faulty component whilst maintaining supply
- Complete all testing and commissioning requirements following the repair
- Reinstate the repaired system back to operational condition

Grading

Grading will take place during Session 1 of the technical interview, underpinned by the logbook. Session 1 will only focus on the practical task (post gateway evidence). The employer technical expert will complete a factual account of the practical task and submit the outcomes to Energy & Environment Awards for the independent assessor to review. The factual account of the task will be used to inform questioning in Session 1 of the interview. It must not be referenced in Session 2.

The independent assessor who conducts the interviews will combine the result of Session 1 (practical task – post gateway) and Session 2 (on-programme – post gateway) to determine the overall technical interview grade. A fail in either of the two sessions will result in the technical interview fail grade being awarded. The technical interview pass and distinction grading combinations are shown in table 5 of the Assessment Plan on page 19 and in Section 5 of the GNC Pressure Management Specification.

Technical Expert Requirements

Apprentices carrying out the practical tasks will be observed by an Energy & Environment Awards approved employer technical expert. The employer technical expert:

- must be nominated by the apprentice's employer
- must demonstrate competence in gas network operations as conducted by the apprentice's employer, for example experience of working in the gas networks sector at level 3 or above
- must have completed a minimum of 2 days continuing professional development (CPD) relevant to gas networks in the last year
- may hold or be working towards a recognised assessor award, but must have received training from Energy & Environment Awards in terms of administering the practical task
- must complete a statement for submission with the apprentice's report as advised by Energy & Environment Awards
- must supervise the practical task
- must provide written instructions and brief the apprentice at the beginning of the task as per Energy & Environment Awards training but must not discuss the task with the apprentice before, during or after the practical task
- must complete a factual account of the practical task using Energy & Environment Awards approved documentation and as per Energy & Environment Awards's guidelines verifying whether the task was completed appropriately
- must provide technical information at the technical interview upon request
- must not have had any involvement with the apprentice's on-programme learning or training and must not guide the apprentice in anyway

Employer Technical Expert Checklist PMIEPA Installation and commissioning of a single stream regulator system			
Apprentice Full Name:			Apprentice No:
Date:			Employer Technical Expert Full Name:
General *(include work to be observed and add additional rows below if required)*	Achieved		Employer technical expert factual commentary. I saw the apprentice do the following:
	Yes	No	
Preparation *(include work to be observed and add additional rows if required)*	Achieved		Employer technical expert factual commentary. I saw the apprentice do the following:
	Yes	No	
System Installation *(include work to be observed and add additional rows if required)*	Achieved		Employer technical expert factual commentary. I saw the apprentice do the following:
	Yes	No	
In the box below the technical expert assessor should: **4. Provide overall comments (breadth and depth), evidence and justification for the factual account of this observation. This may include comments on the apprentice's knowledge, skills or performance and should relate to specific activities or elements.** **5. If the apprentice has failed, identify the areas which were lacking and need improvement.** **6. Capture feedback from the apprentice where they feel they would like to make a comment.**			
Employer Technical Expert Signature:			

Employer Technical Expert Checklist PMREPA Fault diagnosis and repair of regulator system			
Apprentice Full Name:			Apprentice No:
Date:			Employer Technical Expert Full Name:
Faults Applied *(include work to be observed and add additional rows if required)*			
General *(include work to be observed and add additional rows if required)*	Achieved		Employer technical expert factual commentary. I saw the apprentice do the following:
	Yes	No	
Fault Diagnosis and Repair	Achieved		Employer technical expert factual commentary. I saw the apprentice do the following:
	Yes	No	

In the box below the technical expert assessor should:

1. **Provide overall comments (breadth and depth), evidence and justification for the factual account of this observation. This may include comments on the apprentice's knowledge, skills or performance and should relate to specific activities or elements.**
2. **If the apprentice has failed, identify the areas which were lacking and need improvement.**
3. **Capture and feedback from the apprentice where they feel they would like to make a comment.**

Employer Technical Expert Signature:	

Employer Technical Expert Checklist PMA7EPA Functional checks on above 7 bar, twin stream regulator			
Apprentice Full Name:			Apprentice No:
Date:			Employer Technical Expert Full Name:
General *(include work to be observed and add additional rows if required)*	Achieved		Employer technical expert factual commentary. I saw the apprentice do the following:
	Yes	No	
Preparation *(include work to be observed and add additional rows if required)*	Achieved		Employer technical expert factual commentary. I saw the apprentice do the following:
	Yes	No	
Functional Checks *(include work to be observed and add additional rows if required)*	Achieved		Employer technical expert factual commentary. I saw the apprentice do the following:
	Yes	No	
Completion *(include work to be observed and add additional rows if required)*	Achieved		Employer technical expert factual commentary. I saw the apprentice do the following:
	Yes	No	
In the box below the technical expert assessor should: **1. Provide overall comments (breadth and depth), evidence and justification for the factual account of this observation. This may include comments on the apprentice's knowledge, skills or performance and should relate to specific activities or elements.** **2. If the apprentice has failed, identify the areas which were lacking and need improvement.** **3. Capture and feedback from the apprentice where they feel they would like to make a comment.**			
Employer Technical Expert Signature:			

Employer Technical Expert Checklist PMB7EPA Functional checks on a below 7 bar, twin stream regulator			
Apprentice Full Name:			Apprentice No:
Date:			Employer Technical Expert Full Name:
General *(include work to be observed and add additional rows if required)*	Achieved		Employer technical expert factual commentary. I saw the apprentice do the following:
	Yes	No	
Preparation *(include work to be observed and add additional rows if required)*	Achieved		Employer technical expert factual commentary. I saw the apprentice do the following:
	Yes	No	
Functional Checks *(include work to be observed and add additional rows if required)*	Achieved		Employer technical expert factual commentary. I saw the apprentice do the following:
	Yes	No	
Completion *(include work to be observed and add additional rows if required)*	Achieved		Employer technical expert factual commentary. I saw the apprentice do the following:
	Yes	No	
In the box below the technical expert assessor should: **1. Provide overall comments (breadth and depth), evidence and justification for the factual account of this observation. This may include comments on the apprentice's knowledge, skills or performance and should relate to specific activities or elements.** **2. If the apprentice has failed, identify the areas which were lacking and need improvement.** **3. Capture and feedback from the apprentice where they feel they would like to make a comment.**			
Employer Technical Expert Signature:			

Summative Assessment Report		
Apprentice Full Name:		
Employer Technical Expert Full Name:		
Assessment Code	Assessment Description	Achieved
PMIEPA		Yes / No
PMREPA		Yes / No
PMA7EPA		Yes / No
PMB7EPA		Yes / No
Assessment Code	Record any overall factual information (facts, true details and exact examples observed on the day for the apprentice) on the assessment outcome, this must be completed by the employer technical expert and must be specific to the apprentice.	
PMIEPA		
PMREPA		
PMA7EPA		
PMB7EPA		

Full Name and Signatures		
By signing below, I confirm that the information provided is correct and is a true reflection of the performance by apprentice:		
Employer Technical Expert Full Name and Signature (Practice Practical Task):	Full Name:	Date:
	Signature:	
Employer Technical Expert Full Name and Signature. (Practice Practical Task):	Full Name:	Date:
	Signature:	
By signing below, I confirm that the information provided is correct and is a true reflection of the performance by the apprentice recorded by the employer technical expert:		
Independent Assessor	Full Name:	Date:

Full Name and Signature. (Technical interview - Session 1- Practice Practical Task):	Signature:	
QA Full Name and Signature.	Full Name:	Date:
	Signature:	

End-point Assessment
Gas Network Craftsperson
Network Pipelines Maintenance Craftsperson

Practical Tasks – Route 1

Level 3

Practical Task Specification

This specification has been developed as part of the Gas Network Craftsperson (GNC) Standard – Pipelines Maintenance Pathway. The practical task specification details the apprentice's required skills, knowledge and behaviours on all key aspects of the Gas Network Pipelines Maintenance Craftsperson activity specifically for those employed by National Grid Pipeline Maintenance Centre (PMC) at Ambergate.

This end-point assessment will be separated in to two distinct routes to meet the differing nature of activities undertaken by the separate geographic divisions of pipelines maintenance craftsperson (PMC). The practical tasks for the first route is called Gas Network Craftsperson, Pipeline Maintenance – PMC Ambergate. The practical tasks for the first route is called Gas Network Craftsperson, Pipeline Maintenance – PMC Ambergate.

Completion of either route will allow the apprentice to demonstrate meeting the specification of the Gas Network craftsperson – Pipeline Maintenance Craftsperson Assessment Plan criteria and afford the apprentice the opportunity to undertake practical tasks that are relevant to their day to day work activities. This end-point assessment will allow the apprentice to demonstrate the competence required to follow work instructions and specifications.

Route 1 – PMC Ambergate

Route 1 is designed for PMC apprentices operating on higher pressure systems usually at Ambergate.

The practical task is for a 6" Stopple operation on a 6" Steel pipeline. This will include the competence required to comply with all health and safety requirements, to follow work instructions and specifications in order to complete the following tasks:

- Setting up hot tap equipment with a 6" drill and 6" Stopple machine
- Installation of isolation valves on to pipeline fittings
- Non-destructive testing - Leak detection methods
- 2" hot tap connection
- 6" pipe end preparation and cutting using a Clyde cutter
- Setting up a butt weld
- Setting a 2" completion plug and flange completion

The practical task specification is the minimum core technical standard of these requirements, but this does not preclude employers from enhancing the skills and knowledge of the learner through additional or company specific training.

The practical task will enable an apprentice to demonstrate knowledge, skills, and behaviours which would be demonstrated by a competent Pipelines Maintenance Craftsperson.

Successful completion of this practical task should provide evidence that the apprentice has the required knowledge, understanding and performance skills.

What does this practical task specification look like?

To achieve the practical task the apprentice must demonstrate their achievement of all practical task outcomes. This practical task will be evidenced through practical task observation, these being delivered in the workplace under simulated conditions or alternatively in a realistic workplace environment. Evidence of the apprentice's achievement must be included in their work log or their portfolio.

What does the practical task include?

Gas Network Pipelines Maintenance apprentices will be expected to demonstrate the following:

Route 1: Ambergate – 6" Stopple Operation

This should consist of test rig comprising of 6" diameter steel pipe in three separate section for the following activities:

1. 2" threaded O ring fitting for leak testing, drilling 2" hot tap and threaded O ring plug setting.
2. Setting up hot tap and stopple equipment.
3. Cold cutting, end prep and setting up the Butt weld.

The apprentice will be required to set up the following activities for the pipeline this will include:

- Setting up the 2" drilling and carrying out a leak test.
- Calculating tapping distance and drilling the 2" hot tap
- Installation of a vent on the 2" valve for venting operations
- Lead in the installation of the stopple machine.
- On successful isolation depressurise via the vent and purge the pipeline.

- Once the pipeline is decommissioned, set up the Clyde cutter to cold cut the pipeline, completing the cut with an end preparation ready for setting up for a butt weld
- Carry out the 2” TOR plug setting
- Installing a 2”, 4”and 6” flange using the correct completion techniques

A task brief(s) should be designed by the employer or training provider which should include scenarios for the purpose of assessing the practical skills of the apprentices.

While it is not permitted to brief the apprentice as to the specific task they will be given during the live practical task, for practice purposes it is permitted to set up tasks of similar complexity and duration and ask the apprentice to carry them out under live assessment conditions. To make the practice more realistic, a tutor or supervisor should adopt the role of an assessor and use the appropriate grading criteria from Section 5 to ‘assess’ the apprentice.

Important Note: In the live EPA the employer technical expert will not be assessing the apprentice, but will be supervising the apprentice, asking questions, and writing up a factual account of the practical task to verify the task was completed appropriately.

Realistic Working Environments (RWE) Centre Requirements

Centres are responsible for ensuring that the RWE practical tasks are suitably controlled to ensure that the factual account decisions are valid and reliable, and that work carried out and submitted by the apprentice is prepared and produced by them independently, without assistance from others, and free of plagiarism.

The practical tasks must be designed following the guidance and requirements given in this document. The employer technical expert checklist must be adhered to and cannot be altered without prior written consent from Energy & Environment Awards.

In the interest of safety, the systems used for practical task purposes should be pressurised with compressed air and not fuel gas.
The necessary operational procedures should be made available to the apprentice throughout the practical task process

Centres may deliver any number of practical tasks together in combined assessment of their own design, but this must be in with the prior agreement with Energy & Environment Awards.

Where the combined option is used the performance and knowledge criteria for the practical task must be satisfied and the respective employer technical checklists must be completed.

The necessary operational procedures should be made available to the apprentice throughout the practical task process.

Practical Task Centre Requirements

The practical task must be conducted under the supervision of a technical expert from the apprentice's employer. The technical expert will write a factual account (facts, true details and exact examples observed on the day for the apprentice) of the practical task using Energy & Environment Awards documentation, therefore verifying whether the task was completed appropriately. The practical task is administered by the employer. The employer technical expert must be approved and trained by Energy & Environment Awards. The employer technical expert must be independent of the apprentice; please refer to the Gas Network Craftsperson Assessment Plan page 9 and Section 5 of the Specification for further details.

The practical task area must be designed to allow the apprentice to demonstrate the skills as prescribed in the performance criteria. All appropriate legislative requirements must be met. Evidence for the practical aspects must be observed in the realistic working environment. The pressure equipment used in the assessment should be pressurised with air to a minimum pressure of 100mbar or the minimum pressure for satisfactory operation of the equipment being used. All equipment used must be fully functional, the apprentice is allowed assistance in assembling and mounting the equipment on to the pipeline. **Technical expert must supervise the apprentice on a one-to-one basis to maintain quality and rigour**. To allow a variability of the task sufficient equipment should be made available to the apprentice to allow the apprentice a choice for the correct selection of materials. A technical drawing of the proposed task should be made available to the apprentice and the apprentice must have access to company work procedures specific to the task.

Energy & Environment Awards reserve the right to inspect assessment centres to ensure they comply with requirements.

General requirements

Centres may create workbooks that will allow the apprentice to demonstrate their underpinning knowledge on method statements, testing and commissioning requirements etc. The same examples must not have been utilised as part of the apprentices training.

The equipment used for this practical task **must** be for practical task purposes only and the apprentice must not have had prior access to this.

Practical Task Duration

The following are indicative durations for the completion of each practical task area:

- 12 hours which can be increased or decreased by 10%, to allow the apprentice to
  complete a task or complete an answer to a question
- The apprentice is allowed to take breaks in line with working time regulations which will allow the apprentice to move to another location to the next. During the break the technical expert must stop and start the clock and continue to supervise the apprentice one a one to one basis

Apprentice Requirements

To achieve must successfully complete all of the following:

- Ensure all health and safety requirements are observed throughout the assessment
- Complete a site specific risk assessment
- Select method statements appropriate for the activity
- Use company specific procedures or manufactures instructions
- Complete any calculations and/or measurements regarding positioning, testing, commissioning and decommissioning of the flow stopping apparatus
- Pressure test and commission the equipment
- Complete functional checks on the equipment prior to use
- Complete all testing and commissioning requirements
- Reinstate the system back to operational condition following application of the flow stopping technique

Provisional Grading

Provisional grading will take place during Session 1 of the technical interview, underpinned by the logbook. Session 1 will only focus on the practical task (post gateway evidence). The employer technical expert will complete a factual account of the practical task and submit the outcomes to Energy & Environment Awards for the independent assessor to review. The factual account of the task will be used to inform questioning in Session 1 of the interview. It must not be referenced in Session 2.

The independent assessor who conducts the interviews will combine the result of Session 1 (practical task – post gateway) and Session 2 (on-programme – post gateway) to determine the overall technical interview grade. A fail in either of the two sessions will result in the technical interview fail grade being awarded. The technical interview pass and distinction grading combinations are shown in table 5 of the Assessment Plan on page 19 and in Section 5 of the GNC Pipelines Maintenance Specification.

Technical Expert Requirements

Apprentices carrying out the practical tasks will be observed by an Energy & Environment Awards approved technical expert. The technical expert:

- must be nominated by the apprentice's employer
- must demonstrate competence in gas network operations as conducted by the apprentice's employer, for example experience of working in the gas networks sector at level 3 or above
- must have completed a minimum of 2 days continuing professional development (CPD) relevant to gas networks in the last year
- may hold or be working towards a recognised assessor award, but must have received training from Energy & Environment Awards in terms of administering the practical task
- must complete a statement for submission with the apprentice's report as advised by Energy & Environment Awards
- must supervise the practical task
- must provide written instructions and brief the apprentice at the beginning of the task as per Energy & Environment Awards training but must not discuss the task with the apprentice before, during or after the practical task
- must complete a factual account of the practical task using Energy & Environment Awards approved documentation and as per Energy &

Environment Awards's guidelines verifying whether the task was completed appropriately

- must provide technical information at the technical interview upon request
- must not have had any involvement with the apprentice's on-programme learning or training and must not guide the apprentice in anyway

Employer Technical Expert Checklist Pipelines Maintenance Craftsperson – Route 1 – Ambergate: 6” Stopple Operation			
Apprentice Full Name:		Apprentice No:	
Date:		Employer Technical Expert Full Name:	
General *(include work to be observed and add additional rows if required)*	Achieved		Employer technical expert factual commentary. I saw the apprentice do the following:
	Yes	No	
Selection and Preparation *(include work to be observed and add additional rows if required)*	Achieved		Employer technical expert factual commentary. I saw the apprentice do the following:
	Yes	No	
Preparation for drilling *(include work to be observed and add additional rows if required)*	Achieved		Employer technical expert factual commentary. I saw the apprentice do the following:
	Yes	No	
Under Pressure Drilling *(include work to be observed and add additional rows if required)*	Achieved		Employer technical expert factual commentary. I saw the apprentice do the following:
	Yes	No	
Stopple Operation *(include work to be observed and add additional rows if required)*	Achieved		Employer technical expert factual commentary. I saw the apprentice do the following:
	Yes	No	
Cutting and joint preparation *(include work to be observed and add additional rows if required)*	Achieved		Employer technical expert factual commentary. I saw the apprentice do the following:
	Yes	No	

2" TOR Plug Setting *(include work to be observed and add additional rows if required)*	Achieved		Employer technical expert factual commentary. I saw the apprentice do the following:
	Yes	No	

Summative Assessment Report – Route 1 - Ambergate		
Apprentice Full Name:		
Employer Technical Expert Full Name:		
Assessment	**Assessment Description**	**Achieved**
Route 1: Ambergate – Operating on higher pressure systems	General	Yes / No
Route 1: Ambergate – Operating on higher pressure systems	Selection and preparation	Yes / No
Route 1: Ambergate – Operating on higher pressure systems	Preparing for Drilling	Yes / No
Route 1: Ambergate – Operating on higher pressure systems	Under Pressure Drilling	Yes / No
Route 1: Ambergate – Operating on higher pressure systems	Stopple Operation	Yes / No
Route 1: Ambergate – Operating on	Cutting and joint preparation	Yes / No

higher pressure systems		
Route 1: Ambergate – Operating on higher pressure systems	2” TOR Plug Setting	Yes / No
Assessment Description	Record any overall factual information (facts, true details and exact examples observed on the day for the apprentice) on the assessment outcome, this must be completed by the employer technical expert and must be specific to the apprentice.	
General		
Selection and preparation		
Preparing for Drilling		
Under preparation drilling		
Stopple Operation		
Cutting and Joint Operation		
2” TOR Plug Setting		

In the box below the employer technical expert must:

1. Explain the reasons if the apprentice did not achieve the tasks, identify the areas which were lacking and need improvement.
2. Capture and feedback from the apprentice where they feel they would like to make a comment.

Full Name and Signatures		
By signing below, I confirm that the information provided is correct and is a true reflection of the performance by apprentice:		
Employer Technical Expert Full Name and Signature	Full Name:	Date:

(Practice Practical Task):	Signature:	
Employer Technical Expert Full Name and Signature.(Practice Practical Task):	Full Name: Signature:	Date:
By signing below, I confirm that the information provided is correct and is a true reflection of the performance by the apprentice recorded by the employer technical expert:		
Independent Assessor Full Name and Signature. (Technical interview - Session 1- Practice Practical Task):	Full Name: Signature:	Date:
QA Full Name and Signature.	Full Name: Signature:	Date:

End-point Assessment
Gas Network Craftsperson
Network Pipelines Maintenance Craftsperson

Practical Tasks – Route 2

Level 3

Practical Task Specification

This specification has been developed as part of the Gas Network Craftsperson (GNC) Standard – Pipelines Maintenance Pathway. The practical task specification details the apprentice's required skills, knowledge and behaviours on all key aspects of the Gas Network Pipelines Maintenance Craftsperson activity specifically for those employed by National Grid Pipeline Maintenance Centre (PMC) at their satellite depots.

This end-point assessment will be separated in to two distinct routes to meet the differing nature of activities undertaken by the separate geographic divisions of pipelines maintenance craftsperson (PMC). The practical tasks for the first route is called Gas Network Craftsperson, Pipeline Maintenance – PMC Ambergate. The practical tasks for the second route is called Gas Network Craftsperson, Pipeline Maintenance – PMC Satellite.

Completion of either route will allow the apprentice to demonstrate meeting the specification of the Gas Network craftsperson – Pipeline Maintenance Craftsperson Assessment Plan criteria and afford the apprentice the opportunity to undertake practical tasks that are relevant to their day-to-day work activities. This end-point assessment will allow the apprentice to demonstrate the competence required to follow work instructions and specifications.

Route 2 – PMC Satellite Depots

Route 2 is designed for PMC apprentices operating on low, medium and intermediate pressure systems who are based at locations throughout the UK.

There are two specific practical tasks to complete.

The first is a small bore (2" BSP) under pressure drilling, tapping and completion plugging operation on a 300mm (12") steel pipeline operating between 1.6 - 2 barg pressure.

The second will be to deliver a **Single Position** ALH Series 3 Bagstop isolation on a steel pipeline (between 14"/350mm – 18"/450mm operating at low pressure (nominally below 75mbar for UK Gas pressure regimes) between 30-40 mbarg. This will include the competence required to comply with all health and safety requirements, to follow work instructions and specifications in order to complete the following tasks:

- Small bore under pressure drilling (2" BSP) and completion plugging of a 12" steel main operating at Medium pressure (between 1.6 – 2 barg)

- Setting up and delivering a single position ALH Series 3 Bagstop isolation on a steel pipeline between 14”/350mm – 18”/450mm operating at Low pressure (nominally between 30-40 mbarg).
- Setting up, commissioning, verifying, decommissioning, monitoring all required gauges, vents, bypasses and other required ancillary equipment
- Removal of and re-assembly/reinstall a pipeline asset within the isolation (spool, blank flange, tee etc)
- Function testing, pressure testing, commissioning and decommissioning as appropriate

The practical task specification is the minimum core technical standard of these requirements, but this does not preclude employers from enhancing the skills and knowledge of the learner through additional or company specific training.

The practical task will enable an apprentice to demonstrate knowledge, skills, and behaviours which would be demonstrated by a competent Pipelines Maintenance Craftsperson.

Successful completion of this practical task should provide evidence that the apprentice has the required knowledge, understanding and performance skills.

What does this practical task specification look like?

To achieve the practical task the apprentice must demonstrate their achievement of all practical task outcomes. This practical task will be evidenced through practical task observation, these being delivered in the workplace under simulated conditions or alternatively in a realistic workplace environment. Evidence of the apprentice’s achievement must be included in their work log or their portfolio.

What does the practical task include?

Gas Network Pipelines Maintenance apprentices will be expected to demonstrate the following:

Route 2: Satellite – Low, Medium or Intermediate Pressure Flow Stopping Operations:

This should consist of 2 test rigs both comprising a steel pipe of a suitable diameter:

- The first rig shall be used for the 2” BSP small bore drilling, tapping and completion plugging activity. This can be reused on multiple occasions through the repositioning of the drilling position and equipment.

- The second rig will comprise a steel pipe of a suitable diameter (between

14”/350mm and 18”/450mm). This rig will be pre-drilled for connection of the pressure points, by-pass connection and ALH Bagstop bases. This rig must be designed to allow the removal and replacement of a minimum of one 4” Non Tap Completion Plug. All other bases may be pre-installed to facilitate the Bagstop isolation.

- The small bore drilling and tapping rig shall be pressurised to between 1.6barg – 2 barg with compressed air and will be under no flow conditions.

- The ALH Bagstop rig shall be pressurised to a nominal pressure between 30-40 mbarg (must not fall below 20 or exceed 75mbar) and if possible, with a flow not exceeding 1 m/s. However, it is recognised that owing to the small internal (and decreasing with each bag inserted) pipe volume these pressures and flow rates will fluctuate so a static/zero flow rate will be deemed acceptable. Pipe pressures will require monitoring by the Technical Assessor.

The test rigs **must** be capable of facilitating the following activities:

1. Flow stopping using bag stop techniques on the steel pipe
2. Under pressure drilling on a steel pipe

The apprentice will be required to set up and operate all the equipment, they may be assisted by another person, but this cannot be another apprentice. The set up and operation of the drilling and flow stopping equipment will be as follows:

- Setting up for the drilling of a metallic main

- Complete all under pressure drillings and check for leakage

- Install a 2” EMID completion plug to allow removal of the drilling saddle/base assembly

- Set up gauges, bypass assembly to pre-drilled points and commission

- Set up all ALH Bagstop flow stopping equipment to pre- drilled points

- Complete flow stop activities using bag stop techniques on the metallic pipeline

- Remove a pipeline asset from the isolated pipeline and replace/reinstall

- Test replaced pipeline asset before isolation (Bagstop) removal and confirm all joints are leak tight with leak detection fluid

- Remove all flow stopping equipment

- Decommission and remove the by-pass
- Confirm all joints are gas tight with leakage detection fluid

A task brief(s) should be designed by the employer or training provider which should include scenarios for the purpose of assessing the practical skills of the apprentices.

While it is not permitted to brief the apprentice as to the specific task they will be given during the live practical task, for practice purposes it is permitted to set up tasks of similar complexity and duration and ask the apprentice to carry them out under live assessment conditions. To make the practice more realistic, a tutor or supervisor should adopt the role of an assessor and use the appropriate grading criteria from Section 5 to 'assess' the apprentice.

Important Note: In the live EPA the employer technical expert will not be assessing the apprentice, but will be supervising the apprentice, asking questions, and writing up a factual account of the practical task to verify the task was completed appropriately.

Realistic Working Environments (RWE) Centre Requirements

Centres are responsible for ensuring that the RWE practical tasks are suitably controlled to ensure that the factual account decisions are valid and reliable, and that work carried out and submitted by the apprentice is prepared and produced by them independently, without assistance from others, and free of plagiarism.

The practical tasks must be designed following the guidance and requirements given in this document. The employer technical expert checklist must be adhered to and cannot be altered without prior written consent from Energy & Environment Awards.

In the interest of safety, the systems used for practical task purposes should be pressurised with compressed air and not fuel gas.

The necessary operational procedures should be made available to the apprentice throughout the practical task process

Centres may deliver any number of practical tasks together in combined assessment of their own design, but this must be in with the prior agreement with Energy & Environment Awards.

Where the combined option is used the performance and knowledge criteria for the practical task must be satisfied and the respective employer technical checklists must be completed.

The necessary operational procedures should be made available to the apprentice throughout the practical task process.

Practical Task Centre Requirements

The practical task must be conducted under the supervision of a technical expert from the apprentice's employer. The technical expert will write a factual account (facts, true details and exact examples observed on the day for the apprentice) of the practical task using Energy & Environment Awards documentation, therefore verifying whether the task was completed appropriately. The practical task is administered by the employer. The employer technical expert must be approved and trained by Energy & Environment Awards. The employer technical expert must be independent of the apprentice; please refer to the Gas Network Craftsperson Assessment Plan page 9 and Section 5 of the Specification for further details.

The practical task area must be designed to allow the apprentice to demonstrate the skills as prescribed in the performance criteria. All appropriate legislative requirements must be met. Evidence for the practical aspects must be observed in the realistic working environment. The pressure equipment used in the assessment should be pressurised with air to a minimum pressure of 1.6 barg (drilling/tapping) and 30 mbarg (Bagstop) isolations or the minimum pressure for satisfactory operation of the equipment being used. All equipment used must be fully functional, the apprentice is allowed assistance in assembling and mounting the equipment on to the pipeline. **Technical expert must supervise the apprentice on a one-to-one basis to maintain quality and rigour**. To allow a variability of the task sufficient equipment should be made available to the apprentice to allow the apprentice a choice for the correct selection of materials. A technical drawing of the proposed task should be made available to the apprentice and the apprentice must have access to company work procedures specific to the task.

Energy & Environment Awards reserve the right to inspect assessment centres to ensure they comply with requirements.

General requirements

Centres may create workbooks that will allow the apprentice to demonstrate their underpinning knowledge on method statements, testing and commissioning

requirements etc. The same examples must not have been utilised as part of the apprentices training.

The equipment used for this practical task **must** be for practical task purposes only and the apprentice must not have had prior access to this.

Practical Task Duration

The following are indicative durations for the completion of each practical task area:

- 12 hours which can be increased or decreased by 10%, to allow the apprentice to complete a task or complete an answer to a question
- The apprentice is allowed to take breaks in line with working time regulations which will allow the apprentice to move to another location to the next. During the break the technical expert must stop and start the clock and continue to supervise the apprentice one a one to one basis

Apprentice Requirements

To achieve must successfully complete all of the following:

- Ensure all health and safety requirements are observed throughout the assessment
- Complete a site specific risk assessment
- Select method statements appropriate for the activity
- Use company specific procedures or manufactures instructions
- Complete any calculations and/or measurements regarding positioning, testing, commissioning and decommissioning of the flow stopping apparatus
- Pressure test and commission the equipment
- Complete functional checks on the equipment prior to use
- Complete all testing and commissioning requirements
- Reinstate the system back to operational condition following application of the flow stopping technique

Provisional Grading

Provisional grading will take place during Session 1 of the technical interview, underpinned by the logbook. Session 1 will only focus on the practical task (post gateway evidence). The employer technical expert will complete a factual account of the practical task and submit the outcomes to Energy & Environment Awards for the independent assessor to review. The factual account of the task will be used to

inform questioning in Session 1 of the interview. It must not be referenced in Session 2.

The independent assessor who conducts the interviews will combine the result of Session 1 (practical task – post gateway) and Session 2 (on-programme – post gateway) to determine the overall technical interview grade. A fail in either of the two sessions will result in the technical interview fail grade being awarded. The technical interview pass and distinction grading combinations are shown in table 5 of the Assessment Plan on page 19 and in Section 5 of the GNC Pipelines Maintenance Specification.

Technical Expert Requirements

Apprentices carrying out the practical tasks will be observed by an Energy & Environment Awards approved technical expert. The technical expert:

- must be nominated by the apprentice's employer
- must demonstrate competence in gas network operations as conducted by the apprentice's employer, for example experience of working in the gas networks sector at level 3 or above
- must have completed a minimum of 2 days continuing professional development (CPD) relevant to gas networks in the last year
- may hold or be working towards a recognised assessor award, but must have received training from Energy & Environment Awards in terms of administering the practical task
- must complete a statement for submission with the apprentice's report as advised by Energy & Environment Awards
- must supervise the practical task
- must provide written instructions and brief the apprentice at the beginning of the task as per Energy & Environment Awards training but must not discuss the task with the apprentice before, during or after the practical task
- must complete a factual account of the practical task using Energy & Environment Awards approved documentation and as per Energy & Environment Awards's guidelines verifying whether the task was completed appropriately
- must provide technical information at the technical interview upon request
- must not have had any involvement with the apprentice's on-programme learning or training and must not guide the apprentice in anyway

Employer Technical Expert Checklist Pipelines Maintenance Craftsperson – Route 2 – Satellite			
Apprentice Full Name:		Apprentice No:	
Date:		Employer Technical Expert Full Name:	
General *(include work to be observed and add additional rows if required)*	Achieved		Employer technical expert factual commentary. I saw the apprentice do the following:
	Yes	No	
Selection and Preparation *(include work to be observed and add additional rows if required)*	Achieved		Employer technical expert factual commentary. I saw the apprentice do the following:
	Yes	No	
Under Pressure Drilling *(include work to be observed and add additional rows if required)*	Achieved		Employer technical expert factual commentary. I saw the apprentice do the following:
	Yes	No	
Flow Stopping - Bag Stop *(include work to be observed and add additional rows if required)*	Achieved		Employer technical expert factual commentary. I saw the apprentice do the following:
	Yes	No	
Recommission the main *(include work to be observed and add additional rows if required)*	Achieved		Employer technical expert factual commentary. I saw the apprentice do the following:
	Yes	No	

Summative Assessment Report – Route 2 - Satellite		
Apprentice Full Name:		
Employer Technical Expert Full Name:		
Assessment	Assessment Description	Achieved
Route 2: Satellite – Operating on Low, Medium and Intermediate Pressure Flow Stopping Operations	General	Yes / No
Route 2: Satellite – Operating on Low, Medium and Intermediate Pressure Flow Stopping Operations	Selection and preparation	Yes / No
Route 2: Satellite – Operating on Low, Medium and Intermediate Pressure Flow Stopping Operations	Small Bore Under Pressure Drilling/Completion Plugging	Yes / No
Route 2: Satellite – Operating on Low, Medium and Intermediate Pressure Flow Stopping Operations	Flow Stopping – Bag Stop	Yes / No
Route 2: Satellite – Operating on Low, Medium and Intermediate Pressure Flow Stopping Operations	Recommission the main	Yes / No
Assessment Description	Record any overall factual information (facts, true details and exact examples observed on the day for the apprentice) on the assessment outcome, this must be completed by the employer technical expert and must be specific to the apprentice.	
General		
Selection and preparation		
Small Bore Under Pressure Drilling/Completion Plugging		

Flow Stopping – Bag Stop	
Recommission the main	

In the box below the employer technical expert must:

1. Explain the reasons if the apprentice did not achieve the tasks, identify the areas which were lacking and need improvement.
2. Capture and feedback from the apprentice where they feel they would like to make a comment.

Full Name and Signatures		
By signing below, I confirm that the information provided is correct and is a true reflection of the performance by apprentice:		
Employer Technical Expert Full Name and Signature (Practice Practical Task):	Full Name: Signature:	Date:
Employer Technical Expert Full Name and Signature.(Practice Practical Task):	Full Name: Signature:	Date:
By signing below, I confirm that the information provided is correct and is a true reflection of the performance by the apprentice recorded by the employer technical expert:		
Independent Assessor Full Name and Signature. (Technical interview - Session 1- Practice Practical Task):	Full Name: Signature:	Date:
QA Full Name and Signature.	Full Name: Signature:	Date:

End-Point Assessment
Gas Network Craftsperson
Emergency response

Practical Task 1 - DMPR

Testing / Commissioning Natural Gas Domestic Medium Pressure Regulators

Task Code DMPR

Level 3

Practical Task Specification

This specification has been developed as part of the Gas Network Craftsperson Standard - Emergency Response Pathway. The specification details the apprentice's required skills, knowledge and behaviours on all relevant matters of gas safety in relation to the installation and commissioning of regulators with medium pressure supply.

The practical task specification is the minimum core gas safety standard of these requirements, but this does not preclude employers from enhancing the skills and knowledge of the learner through additional or company specific training.

Successful completion of this practical task will provide evidence that the apprentice has the required knowledge, understanding and performance skills to install and maintain domestic meter regulators with a medium pressure supply.

What does this practical task specification look like?

Gas emergency response apprentices must be able to:

- Plan and prepare work activities for installing and exchanging gas meters and regulators on low pressure and medium pressure supplies
- Install, exchange, and remove gas meters and regulators on low pressure and medium pressure supplies
- Pre-commission and commission gas meters and regulators on low pressure and medium pressure

What does the practical task include?

This practical task covers the following matters of gas safety requirements:

- REGT 1

The practical task will include:

- Install and test a medium pressure regulator (MIEFV)
- Install and test a medium pressure regulator (Slam shut)

Realistic Working Environments (RWE) Centre Requirements

Centres are responsible for ensuring that the RWE practical tasks are suitably controlled to ensure that the factual account decisions are valid and reliable, and that work carried out and submitted by the apprentice is prepared and produced by them independently, without assistance from others, and free of plagiarism.

The practical task must be designed following the guidance and requirements given in this document. The employer technical expert checklist must be adhered to and cannot be altered without prior written consent from Energy & Environment Awards.

The necessary operational procedures should be made available to the apprentice throughout the practical task process.

Centres may deliver any number of the practical tasks together in combined assessment of their own design, but this must be in with the prior agreement with Energy & Environment Awards.

Where the combined option is used the performance and knowledge criteria for the practical task must be satisfied and the respective employer technical expert checklists must be completed.

The following normative documents **must** be made available to the apprentice throughout the practical task process:

BS6400
Company specific procedures
IGEM/GM/PRS/29
IGEM/GM/PRS/28
IGE/UP/1B
GSIUP version 7

Practical Task Centre Requirements

The practical tasks covering the matters of gas safety requirements are:

DMPR1	Install and test a medium pressure regulator (MIEFV)
DMPR2	Install and test a medium pressure regulator (slam shut)

The practical task must be conducted under the supervision of a technical expert from the apprentice's employer. The technical expert will write a factual account (facts, true details and exact examples observed on the day for the apprentice) of the practical task using Energy & Environment Awards documentation, therefore verifying whether the task was completed appropriately. The practical task is administered by the employer. The employer technical expert must be approved and trained by Energy & Environment Awards. The employer technical expert must be independent of the apprentice; please refer to the Gas Network Craftsperson Assessment Plan page 9 and Section 5 of the Specification for further details.

The practical tasks area must be designed to allow the apprentice to install a medium - low-pressure natural gas regulator and carry out the subsequent commissioning and functional checks. The supply pressure may be simulated through the use of compressed air, this being connected through a simulated gas service pipe. The practical tasks area should include all of the following:

- Selection of different models of domestic MP meter regulators including:
    - A regulator incorporating a pressure relief valve and meter installation excess flow valve
    - A regulator incorporating a slam shut valve
    - Manufacturers' instructions on the selected MP regulators
    - A suitable means of pressurising the regulator to be tested
    - Suitable test and purge apparatus including a purge hose and flame trap
    - A small receptacle to contain water (relief valve test)

The full range of warning labels and advisory notices and appropriate documentation for the recording of details and any defects must be made available to the apprentice. The area used for this exercise must be for the practical tasks purposes only and the apprentice must not have had prior access to this area.

The practical tasks must be carried over a maximum work time of 9 hours +/- 10% and the delivery time period must not exceed a maximum of three days due to the safety critical nature of the activities.

There may be breaks during the practical task to allow the apprentice to move from one location to another and breaks in line with working time regulations which must all be supervised. The employer technical expert must supervise the apprentice on a one-to one basis to maintain quality and rigour.

Apprentice Requirements

The apprentice must successfully complete all of the following:

- Ensure all health and safety requirements are observed throughout the assessment
- Carry out the checks prior to installing the medium pressure regulator
- Install the medium pressure regulator
- Test and commission the medium pressure regulator
- Complete documentation
- Identify and apply the correct labels and notices

Grading

Will take place during Session 1 of the technical interview based on the logbook. Session 1 will only focus on the practical task (post gateway evidence). The employer technical expert will complete a factual account of the practical task and submit the outcomes to Energy & Environment Awards for the independent assessor to review. The factual account of the tasks will be used to inform questioning in Session 1 of the interview. It must not be referenced in Session 2.

The independent assessor who conducts the interviews will combine the result of Session 1 (practical task – post gateway) and Session 2 (on-programme – post gateway) to determine the overall technical interview grade. A fail in either of the two sessions will result in the technical interview fail grade being awarded. The technical interview pass and distinction grading combinations are shown in table 5 of the Assessment Plan on page 19 and in Section 5 of the GNC Emergency Response Specification.

Practical Task Duration

The apprentice has 90 minutes to complete DMPR1.
The apprentice has 90 minutes to complete DMPR2.

Technical Expert Requirements

Apprentices carrying out the practical tasks will be observed by an Energy & Environment Awards approved employer technical expert. The employer technical expert:

- must be nominated by the apprentice's employer
- must demonstrate competence in gas network operations as conducted by the apprentice's employer, for example experience of working in the gas networks sector at level 3 or above
- must have completed a minimum of 2 days continuing professional development (CPD) relevant to gas networks in the last year
- may hold or be working towards a recognised assessor award, but must have received training from Energy & Environment Awards in terms of administering the practical task
- must complete a statement for submission with the apprentice's report as advised by Energy & Environment Awards
- must supervise the practical task
- Must provide written instructions and brief the apprentice at the beginning of the task as per Energy & Environment Awards training but must not discuss the task with the apprentice before, during or after the practical task
- must complete a factual account of the practical task using Energy & Environment Awards approved documentation and as per Energy & Environment Awards's guidelines verifying whether the task was completed appropriately
- must provide technical information at the technical interview upon request
- must not have had any involvement with the apprentice's on-programme learning or training and must not guide the apprentice in anyway

Employer Technical Expert Checklist DMPR1 Install and test a medium pressure regulator (MIEFV)			
Apprentice Full Name:			Apprentice No:
Date:			Employer Technical Expert Full Name:
Pre-installation Checks *(include work to be observed and add additional rows if required)*	Achieved		Employer technical expert factual commentary. I saw the apprentice do the following:
	Yes	No	
Purging and testing pressure control and safety system utilising a pressure relief valve and MIEFV *(include work to be observed and add additional rows if required)*	Achieved		Employer technical expert factual commentary. I saw the apprentice do the following:
	Yes	No	

In the box below the employer technical expert should:

7. Provide overall comments (breadth and depth), evidence and justification for the factual account (facts, true details and exact examples observed on the day for the apprentice) of this observation. This must include comments on the apprentice's knowledge, skills or performance and should relate to specific activities or elements.
8. If the apprentice has failed, identify the areas which were lacking and need improvement.
9. Capture and feedback from the apprentice where they feel they would like to make a comment.

Employer Technical Expert Signature:	

Employer Technical Expert Checklist DMPR1a Commission a medium pressure regulator (MIEFV)			
Apprentice Full Name:		Apprentice No:	
Date:		Employer Technical Expert Full Name:	
Testing operation of MIEFV *(include work to be observed and add additional rows if required)*	Achieved		Employer technical expert factual commentary. I saw the apprentice do the following:
	Yes	No	
Let-by test on ECV *(include work to be observed and add additional rows if required)*	Achieved		Employer technical expert factual commentary. I saw the apprentice do the following:
	Yes	No	
Let-by test on gas regulator *(include work to be observed and add additional rows if required)*	Achieved		Employer technical expert factual commentary. I saw the apprentice do the following:
	Yes	No	

In the box below the employer technical expert should:

1. Provide overall comments (breadth and depth), evidence and justification for the factual account (facts, true details and exact examples observed on the day for the apprentice) of this observation. This must include comments on the apprentice's knowledge, skills or performance and should relate to specific activities or elements.
2. If the apprentice has failed, identify the areas which were lacking and need improvement.
3. Capture and feedback from the apprentice where they feel they would like to make a comment.

Employer Technical Expert Signature:	

Employer Technical Expert Checklist DMPR2 Install and test a medium pressure regulator (slam shut)			
Apprentice Full Name:	Apprentice No:		
Date:	Employer Technical Expert Full Name:		
Pre-installation checks	Achieved		Employer technical expert factual commentary. I saw the apprentice do the following:
	Yes	No	
Purging and testing (P/T) pressure control and safety system utilising a slam shut valve *(include work to be observed and add additional rows if required)*	Achieved		Employer technical expert factual commentary. I saw the apprentice do the following:
	Yes	No	

In the box below the employer technical expert should:

1. Provide overall comments (breadth and depth), evidence and justification for the factual account (facts, true details and exact examples observed on the day for the apprentice) of this observation. This must include comments on the apprentice's knowledge, skills or performance and should relate to specific activities or elements.
2. If the apprentice has failed, identify the areas which were lacking and need improvement.
3. Capture and feedback from the apprentice where they feel they would like to make a comment.

Employer Technical Expert Signature:	

Employer Technical Expert Checklist DMPR2a Commission a medium pressure regulator (slam shut)			
Apprentice Full Name:	Apprentice No:		
Date:	Employer Technical Expert Full Name:		
Testing the operation of the slam shut valve (SSV) *(include work to be observed and add additional rows if required)*	Achieved		Employer technical expert factual commentary. I saw the apprentice do the following:
	Yes	No	

Let-by test on gas regulator slam shut valve *(include work to be observed and add additional rows if required)*	Achieved		Employer technical expert factual commentary. I saw the apprentice do the following:
	Yes	No	
Let-by test on ECV *(include work to be observed and add additional rows if required)*	**Achieved**		**Employer technical expert factual commentary. I saw the apprentice do the following:**
	Yes	No	

In the box below the employer technical expert should:

1. Provide overall comments (breadth and depth), evidence and justification for the factual account (facts, true details and exact examples observed on the day for the apprentice) of this observation. This must include comments on the apprentice's knowledge, skills or performance and should relate to specific activities or elements.
2. If the apprentice has failed, identify the areas which were lacking and need improvement.
3. Capture and feedback from the apprentice where they feel they would like to make a comment.

Employer Technical Expert Signature:	

Summative Assessment Report		
Apprentice Full Name:		
Employer Technical Expert Full Name:		
Assessment Code	Assessment Description	Achieved
DMPR1	Install and test and commission a medium pressure regulator (MIEFV)	Yes / No
DMPR2	Install and test and commission a medium pressure regulator (slam shut)	Yes / No
Assessment Code	Record any overall factual information (facts, true details and exact examples observed on the day for the apprentice) on the assessment outcome, this must be completed by the employer technical expert and must be specific to the apprentice.	
DMPR1		
DMPR2		

Full Name and Signatures		
Employer Technical Expert Full Name and Signature (Practical Task)	Full name: Signature:	Date:
Independent Technical Expert Full Name and Signature (Technical interview - Session1- Practical Task)	Full name: Signature:	Date:
QA Full Name and Signature	Full name: Signature:	Date:

End-point Assessment
Gas Network Craftsperson
Emergency Response
Practical Task 2 – UP1a

Non- Domestic Tightness Testing

Task Code UP1a
Level 3

Practical Task Specification

This specification has been developed as part of the Gas Network Craftsperson Emergency Response Pathway. The specification details the apprentice's required skills, knowledge and behaviour on all relevant matters of gas safety in relation to the strength testing, tightness testing and direct purging to new and existing installations in accordance with IGE/UP/1a.

The practical task specification is the minimum core gas safety standard of these requirements, but this does not preclude employers from enhancing the skills and knowledge of the learner through additional or company specific training.

Successful completion of this practical task will provide evidence that the apprentice has the required knowledge, understanding and performance skills to strength testing, tightness testing and direct purging to new and existing installations in accordance with IGE/UP/1a.

What does this practical task specification look like?

Gas emergency response apprentices will be able to:

- Plan and prepare work activities for strength testing, tightness testing and direct purging - IGE/UP/1a
- Strength testing, tightness testing and direct purging of gas systems and components to industry standards - IGE/UP/1a
- De-commission gas systems and components to industry standards
- Use and communicate data and information to carry out decommissioning, strength testing, tightness testing and direct purging to industry standards

What does the practical task include?

This practical task covers the following matters of gas safety requirements:

- IGE/UP/1a – (TPCP1a)

The practical task must include:

- Carrying out a strength test
- Carrying out a tightness test immediately following strength test
- Carrying out a tightness test – existing installations (gas)
- Direct purge including the commissioning and decommissioning of low pressure natural gas pipework installations

Realistic Working Environments (RWE) Centre Requirements

Centres are responsible for ensuring that the RWE practical tasks are suitably controlled to ensure that the factual account decisions are valid and reliable, and that work carried out and submitted by the apprentice is prepared and produced by them independently, without assistance from others, and free of plagiarism.

The practical task must be designed following the guidance and requirements given in this document. The employer technical expert checklist must be adhered to and cannot be altered without prior written consent from Energy & Environment Awards.

Centres may deliver any number of the practical tasks together in combined assessment of their own design, but this must be in with the prior agreement with Energy & Environment Awards.

Where the combined option is used the performance and knowledge criteria for the practical task must be satisfied and the respective employer technical expert checklists must be completed.

The following normative documents **must** be made available to the apprentice throughout the practical task process:

Building Regulations
BS6891
BS6400
BS7967
BS5440
IGE/UP/1B
IGE/UP/1A
GSIUR
GSIUP version 7
BS7671 / on-site guide to BS767

Practical Task Centre Requirements

The practical tasks covering the matters of gas safety requirements are:

UP1a-1 Carrying out a strength test
UP1a-2 Carrying out a tightness test immediately following strength test
UP1a-3 Carrying out a tightness test – existing installations (gas)
UP1a-4 Direct purge including the commissioning and decommissioning of low pressure natural gas pipework installations

The practical task must be conducted under the supervision of a technical expert from the apprentice's employer. The employer technical expert will write a factual account of the practical task using Energy & Environment Awards documentation, therefore verifying whether the task was completed appropriately. The practical task is administered by the employer. The employer technical expert must be approved and trained by Energy & Environment Awards. The employer technical expert must be independent of the apprentice; please refer to the Gas Network Craftsperson Assessment Plan page 9 and Section 5 of the Specification for further details.

For UP1a-1 and UP1a-2 the practical tasks area must be designed to allow the apprentice to carry out a strength test of pipework. The practical tasks area should include all of the following:

- A length of extension outlet pipework that can be valved off or isolated from the existing installation pipework. This will be treated as 'new' and enable 'strength testing' to be assessed
- Additional section of pipework connected via isolation valves with appliances connected allowing a tightness test between the isolation valve and appliances
- A recorded 'risk assessments or test certificate' on the pipework being tested to confirm that this has been tested and passed the test at a minimum pressure of 150 mbar. This will ensure the integrity of the pipework when the apprentices undertake strength testing at 82.5 mbar
- Documented faults should be evident on the installation to allow the apprentice to identify and correct these prior to 'strength testing'
- Examples of a suitable pipework installations should be provided; Case 4 & Case 5 on page 8 of IGE/UP/1A Edition 2 will suffice
- Suitable method for controlled insertion of dry compressed air or nitrogen into pipework section to be strength tested
- Where nitrogen is used this must be under the control of a risk assessment

- A selection of pressure gauges must be available to enable the apprentice to identify the correct type of gauge to carry out the test
- Recognised strength and tightness testing and purging certificates must be available
- The 'live' gas installation pipework must be protected to prevent gas / air mixtures entering the upstream supply

For UP1a-3 the practical tasks area must be designed to allow the apprentice to tightness test an existing pipework installation including a meter. The practical tasks area should include all of the following:

- A suitable gas meter of capacity 16m^3/hr or above connected to an outlet pipework installation that can be treated as 'existing', where total volume ≤ 1 m³
- The pipework installation must contain pipes of nominal bore >35mm but ≤ 150 mm
- Operating pressure must be ≤ 40 mbar at outlet of primary meter regulator
- There must be the facility to simulate a small controllable gas escape to the 'existing' installation slightly exceeding the permissible drop for size of system to enable detection and ratification
- A selection of pressure gauges to enable identification of the correct type of gauge to deliver readings to appropriate GRMs.
- Suitable strength and tightness testing and purging certificates

For UP1a-4 the practical tasks area must be designed to allow the apprentice to purge, commission and decommission a low pressure gas pipework installation. The practical tasks area should include all of the following:

- A section of pipework of nominal bore >35mm but ≤ 150 mm - this could include a meter of capacity 16m^3/hr or above if deemed necessary.
- A suitably sized vent stack to include volume or flow meter; a full bore control valve; sample point; suitable flame arrestor at termination point and suitable purge hoses in accordance with table 9 of IGE/UP/1A
- Intrinsically safe gas detection instrument for sampling gas at purge point
- A selection of "Warning Notices" and "Warning Tape" to advise and warn of purge requirements
- A selection of pressure gauges to enable identification of the correct type of gauge to deliver readings to appropriate GRMs
- Suitable strength and tightness testing and purging certificates

The full range of warning labels and advisory notices and appropriate documentation for the recording of details and any defects must be made available to the apprentice. The area used for this exercise must be for the practical tasks purposes only and the apprentice must not have had prior access to this area.

The practical tasks must be carried over a maximum work time of 9 hours +/- 10% and the delivery time period must not exceed a maximum of three days due to the safety critical nature of the activities.

There may be breaks during the practical task to allow the apprentice to move from one location to another and breaks in line with working time regulations which must all be supervised. The employer technical expert must supervise the apprentice on a one-to one basis to maintain quality and rigour.

Apprentice Requirements

The apprentice must successfully complete all of the following:

- Ensure all health and safety requirements are observed throughout the practical tasks
- Setting out the requirements for the strength test
- Assess the work location, plan out the pipework routes and the materials that are required
- Confirm the availability of all appropriate technical information required to complete the task
- Carry out visual checks prior to a strength test
- Carry out a strength test
- Complete any documentation required after a strength test
- Setting out the requirements for the tightness directly after a strength test
- Carry out visual checks prior to a tightness test
- Carry out a tightness test
- Complete any documentation required after a tightness test
- Setting out the requirements for the purge
- Carry out visual checks prior to a purging
- Select and display relevant notices and labels
- Set up all the required equipment prior to purging the installation
- Commission the installation - purge from air to gas
- Decommission the installation - purge from gas to air
- Complete any documentation required after the purge

Grading

Will take place during Session 1 of the technical interview based on the logbook. Session 1 will only focus on the practical task (post gateway evidence). The employer technical expert will complete a factual account of the practical task and submit the outcomes to Energy & Environment Awards for the independent assessor to review. The factual account of the tasks will be used to inform questioning in Session 1 of the interview. It must not be referenced in Session 2.

The independent assessor who conducts the interviews will combine the result of Session 1 (practical task – post gateway) and Session 2 (on-programme – post gateway) to determine the overall technical interview grade. A fail in either of the two sessions will result in the technical interview fail grade being awarded. The technical interview pass and distinction grading combinations are shown in table 5 of the Assessment Plan on page 19 and in Section 5 of the GNC Emergency Response Specification.

Assessment Duration

The apprentice has 60 minutes to complete UP1a-1
The apprentice has 120 minutes to complete UP1a-2
The apprentice has 45 minutes to complete UP1a-3
The apprentice has 45 minutes to complete UP1a-4

Technical Expert Requirements

Apprentices carrying out the practical tasks will be observed by an Energy & Environment Awards standardised and approved employer technical expert. The employer technical expert:

- must be nominated by the apprentice's employer
- must demonstrate competence in gas network operations as conducted by the apprentice's employer, for example experience of working in the gas networks sector at level 3 or above
- must have completed a minimum of 2 days continuing professional development (CPD) relevant to gas networks in the last year
- may hold or be working towards a recognised assessor award, but must have received training from Energy & Environment Awards in terms of administering the practical task

- must complete a statement for submission with the apprentice's report as advised by Energy & Environment Awards
- must supervise the practical task
- must provide written instructions and brief the apprentice at the beginning of the task as per Energy & Environment Awards training but must not discuss the task with the apprentice before, during or after the practical task
- must complete a factual account of the practical task using Energy & Environment Awards approved documentation and as per Energy & Environment Awards's guidelines verifying whether the task was completed appropriately
- must provide technical information at the technical interview upon request
- must not have had any involvement with the apprentice's on-programme learning or training and must not guide the apprentice in anyway

Employer Technical Expert Checklist Calculating the volume of a non-domestic installation			
This sheet is to be used by the apprentice to calculate the parameters for a tightness test and record the results in the table below. Reference should be made to the relevant sections of IGE/UP/1a. *(include work to be observed and add additional rows if required below)*			
Pipe Material	Pipe Diameter	Pipe Length	Pipe Volume (m^3)
Total Pipework Volume (A)			
Meter Type		Meter Volume (m^3)-(B)	
Total Installation Volume = (A) + (B) = (m^3)			
Installation Details *(include work to be observed and add additional rows if required)*			
Apprentice Full Name:		Employer Technical Expert Full Name:	
Date:		Date:	
Signature:		Signature:	

Employer Technical Expert Checklist UP1a-1 Carrying out a strength test			
Apprentice Full Name:		Apprentice No:	
Date:		Employer Technical Expert Full Name:	
Setting out the requirements for strength testing *(include work to be observed and add additional rows if required)*	Achieved Yes	No	Employer technical expert factual commentary. I saw the apprentice do the following:
Preparing for strength testing*(include work to be observed and add additional rows if required)*	Achieved Yes	No	Employer technical expert factual commentary. I saw the apprentice do the following:
Carrying out the strength test – new installation and extensions (air or nitrogen) *(include work to be observed and add additional rows if required)*	Achieved Yes	No	Employer technical expert factual commentary. I saw the apprentice do the following:
In the box below the technical expert assessor should: **10. Provide overall comments (breadth and depth), evidence and justification for the factual account of this observation. This may include comments on the apprentice's knowledge, skills or performance and should relate to specific activities or elements.** **11. If the apprentice has failed, identify the areas which were lacking and need improvement.** **12. Capture and feedback from the apprentice where they feel they would like to make a comment.**			
Employer Technical Expert Signature:			

Employer Technical Expert Checklist UP1a-2 Carrying out a tightness test immediately following strength test			
Apprentice Full Name:		Apprentice No:	
Date:		Employer Technical Expert Full Name:	
Checks *(include work to be observed and add additional rows if required)*	Achieved		Employer technical expert factual commentary. I saw the apprentice do the following:
	Yes	No	
In the box below the technical expert assessor should: **1. Provide overall comments (breadth and depth), evidence and justification for the factual account of this observation. This may include comments on the apprentice's knowledge, skills or performance and should relate to specific activities or elements.** **2. If the apprentice has failed, identify the areas which were lacking and need improvement.** **3. Capture and feedback from the apprentice where they feel they would like to make a comment.**			
Employer Technical Expert Signature:			

Employer Technical Expert Checklist UP1a-3 Carrying out a tightness test – existing installations (gas)			
Apprentice Name:		Apprentice No:	
Date:		Employer Technical Expert Full Name:	
Prepare for tightness testing – existing installations (gas) *(include work to be observed and add additional rows if required)*	Achieved		Employer technical expert factual commentary. I saw the apprentice do the following:
	Yes	No	
Carry out TIGHTNESS test – existing installations (gas)	Achieved		Employer technical expert factual commentary. I saw the apprentice do the following:
	Yes	No	
In the box below the technical expert assessor should:			

1. **Provide overall comments (breadth and depth), evidence and justification for the factual account of this observation. This may include comments on the apprentice's knowledge, skills or performance and should relate to specific activities or elements.** 2. **If the apprentice has failed, identify the areas which were lacking and need improvement.** 3. **Capture and feedback from the apprentice where they feel they would like to make a comment.**

Employer Technical Expert Signature:	

Employer Technical Expert Checklist UP1a-4 Direct purge including the commissioning and decommissioning of low pressure natural gas pipework installations			
Apprentice Full Name:	Apprentice No:		
Date:	Employer Technical Expert Full Name:		
Prepare for direct purging *(include work to be observed and add additional rows if required)*	Achieved		Employer technical expert factual commentary. I saw the apprentice do the following:
	Yes	No	

In the box below the technical expert assessor should: 1. **Provide overall comments (breadth and depth), evidence and justification for the factual account of this observation. This may include comments on the apprentice's knowledge, skills or performance and should relate to specific activities or elements.** 2. **If the apprentice has failed, identify the areas which were lacking and need improvement.** 3. **Capture and feedback from the apprentice where they feel they would like to make a comment.**

Employer Technical Expert Signature:	

Employer Technical Expert Checklist UP1a-4 Direct purge including the commissioning and decommissioning of low pressure natural gas pipework installations			
Apprentice Full Name:	Apprentice No:		
Date:	Employer Technical Expert Full Name:		
Direct PURGING - venting to outside - from air to gas i.e., commissioning *(include work to be observed and add additional rows if required)*	Achieved		Employer technical expert factual commentary. I saw the apprentice do the following:
	Yes	No	
Direct PURGING from gas to air – DE-COMMISSIONING *(include work to be observed and add additional rows if required)*	Achieved		Employer technical expert factual commentary. I saw the apprentice do the following:
	Yes	No	
In the box below the technical expert assessor should: **1. Provide overall comments (breadth and depth), evidence and justification for the factual account of this observation. This may include comments on the apprentice's knowledge, skills or performance and should relate to specific activities or elements.** **2. If the apprentice has failed, identify the areas which were lacking and need improvement.** **3. Capture and feedback from the apprentice where they feel they would like to make a comment.**			
Employer Technical Expert Signature:			

Summative Assessment Report		
Apprentice Full Name:		
Employer Technical Expert Full Name:		
Assessment Code	Assessment Description	Achieved
UP1a-1	Carrying out a strength test	Yes / No
UP1a-2	Carrying out a tightness test immediately following strength test	Yes / No
UP1a-3	Carrying out a tightness test – existing installations	Yes / No

UP1a-4	Direct purge including the commissioning and decommissioning of low pressure natural gas pipework installations	Yes / No
Assessment Code	Record any comments on the assessment outcome and detail any questions asked; this must be completed by the employer technical expert and must be specific to the apprentice.	
UP1a-1		
UP1a-2		
UP1a-3		
UP1a-4		

Full Name and Signatures		
Employer Technical Expert Full Name and Signature	Full Name	Date:
	Signature	
Independent Technical Expert Full name and signature (Technical Interview session 1 – practical task)	Full Name:	Date:
	Signature:	
QA Full Name and Signature	Full Name:	Date:
	Signature:	

End-point Assessment
Gas Network Craftsperson
Emergency response
Practical Task 3 - GIUS

Gas Industry Unsafe Situations

Task Code GIUS
Level 3

Practical Task Specification

This specification has been developed as part of the Gas Network Craftsperson Emergency Response Pathway. The specification details the apprentice's required skills, knowledge and behaviour on all relevant matters of gas safety in relation to unsafe situations on domestic gas installations.

The practical task specification is the minimum core gas safety standard of these requirements, but this does not preclude employers from enhancing the skills and knowledge of the learner through additional or company specific training.

Successful completion of this practical task will provide evidence that the apprentice has the required knowledge, understanding and performance skills to inspect and confirm the safety of or make safe domestic gas installations.

What does this specification look like?

Gas emergency response apprentices will be able to:

- Identify unsafe gas appliances and installations
- Apply the correct notices, forms and warning labels to unsafe domestic gas installations
- Take action as appropriate to make identified defects safe

What does the practical task include?

This practical task covers the following matters of gas safety requirements:

- Unsafe situations, emergency notices and warning labels

The practical task will include:

- Identification of unsafe situations
- The correct classification of unsafe situations
- The correct action to make unsafe situations safe

Realistic Working Environments (RWE) Centre Requirements

Centres are responsible for ensuring that the RWE practical tasks are suitably controlled to ensure that the factual account decisions are valid and reliable, and that work carried out and submitted by the apprentice is prepared and produced by them independently, without assistance from others, and free of plagiarism.

The practical task must be designed following the guidance and requirements given in this document. The employer technical expert checklist must be adhered to and cannot be altered without prior written consent from Energy & Environment Awards.

Centres may deliver any number of the practical tasks together in combined assessment of their own design, but this must be in with the prior agreement with Energy & Environment Awards.

Where the combined option is used the performance and knowledge criteria for the practical task must be satisfied and the respective employer technical expert checklists must be completed.

The following normative documents **must** be made available to the apprentice throughout the practical task process:

Building Regulations
BS6891
BS6400
BS7967
BS5440
IGE/UP/1B
GSIUR
GIUSP version 7
BS7671 / on-site guide to BS7671

Practical Task Centre Requirements

The practical tasks covering the matters of gas safety requirements are:

GIUS1	The identification and classification of unsafe situations
GIUS2	The identification of situations which do not meet current standards

The practical task must be conducted under the supervision of a technical expert from the apprentice's employer. The technical expert will write a factual account of the practical task using Energy & Environment Awards documentation, therefore verifying whether the task was completed appropriately. The practical task is

administered by the employer. The employer technical expert must be approved and trained by Energy & Environment Awards. The employer technical expert must be independent of the apprentice; please refer to the Gas Network Craftsperson Assessment Plan page 9 and Section 5 of the Specification for further details.

The practical tasks area must be designed to simulate a realistic working environment that allows the apprentice to identify a minimum of one of each of the following:

- An immediately dangerous (ID) situation
- An at risk (AR) situation
- A situation that does not comply with current standards
- A RIDDOR reportable installation or appliance

Examples may include:

a) RIDDOR reportable ID appliance / installation caused by an alteration to existing premises
b) ID installation include a gas appliance showing signs of spillage
c) AR installation include a flued appliance connected to gas supply without using a permanently fixed pipe
d) ID installation include a meter connected to a gas supply without a regulator
e) AR(R) open flue space heater (≤ 14 kW gross heat input) installed in a sleeping area after January 1996, without an oxygen depletion device
f) AR(R) open flue or flue-less gas appliance in a room containing a bath or shower
g) NCS open flue appliance with undersized permanent ventilation
h) Not to standard installation with undersized pipework, affecting the effective but not safe operation of an appliance
i) ID installation, include one connected to a gas supply with no regulator fitted

Centres may create workbooks containing a written scenarios', drawings, PowerPoint presentations and photographs etc. which will allow apprentices to identify at least one each of ID, AR and RIDDOR reportable (R) installations / appliances. However, the same media must not have been utilised as part of the apprentices training.

The full range of warning labels and advisory notices and appropriate documentation for the recording of defects must be made available to the apprentice. The area used

for this exercise must be for the practical tasks purposes only and the apprentice must not have had prior access to this area.

The practical tasks must be carried over a maximum work time of 9 hours +/- 10% and the delivery time period must not exceed a maximum of three days due to the safety critical nature of the activities.

There may be breaks during the practical task to allow the apprentice to move from one location to another and breaks in line with working time regulations which must all be supervised. The employer technical expert must supervise the apprentice on a one-to one basis to maintain quality and rigour.

Apprentice Requirements

The apprentice must successfully complete all of the following:

- Ensure all health and safety requirements are observed throughout the assessment
- Complete a comprehensive inspection of the scenarios indicated
- Identify and correctly categorise any unsafe situations
- Identify situations that, don't meet current standards but have no safety risk
- Make reference to the GIUSP booklet
- Take appropriate remedial action to make the situation safe
- Select and apply appropriate warning notices and advise the occupier
- Complete appropriate documentation

Grading

Will take place during Session 1 of the technical interview based on the logbook. Session 1 will only focus on the practical task (post gateway evidence). The employer technical expert will complete a factual account of the practical task and submit the outcomes to Energy & Environment Awards for the independent assessor to review. The factual account of the task will be used to inform questioning in Session 1 of the interview. It must not be referenced in Session 2.

The independent assessor who conducts the interviews will combine the result of Session 1 (practical task – post gateway) and Session 2 (on-programme – post gateway) to determine the overall technical interview grade. A fail in either of the two parts will result in the technical interview fail grade being awarded. The technical

interview pass and distinction grading combinations are shown in table 5 of the Assessment Plan on page 19 and in Section 5 of the GNC Emergency Response Specification.

Assessment Duration

The apprentice has 1 hour to complete GIUS1.
The apprentice has 1 hour to complete GIUS2.

Technical Expert Requirements

Apprentices carrying out the practical tasks will be observed by an Energy & Environment Awards standardised and approved employer technical expert. The employer technical expert:

- must be nominated by the apprentice's employer
- must demonstrate competence in gas network operations as conducted by the apprentice's employer, for example experience of working in the gas networks sector at level 3 or above
- must have completed a minimum of 2 days continuing professional development (CPD) relevant to gas networks in the last year
- may hold or be working towards a recognised assessor award, but must have received training from Energy & Environment Awards in terms of administering the practical task
- must complete a statement for submission with the apprentice's report as advised by Energy & Environment Awards
- must supervise the practical task
- must provide written instructions and brief the apprentice at the beginning of the task as per Energy & Environment Awards training but must not discuss the task with the apprentice before, during or after the practical task
- must complete a factual account of the practical task using Energy & Environment Awards approved documentation and as per Energy & Environment Awards's guidelines verifying whether the task was completed appropriately
- must provide technical information at the technical interview upon request
- must not have had any involvement with the apprentice's on-programme learning or training and must not guide the apprentice in anyway

Employer Technical Expert Checklist GIUS1 The identification and classification of unsafe situations GIUS2 The identification of situations which do not meet current standards			
Apprentice Full Name:	Apprentice No:		
Date:	Employer Technical Expert Full Name:		
GIUS1The identification and classification of unsafe situations*(include work to be observed and add additional rows if required)*	Observed Yes	No	Employer technical expert factual commentary. I saw the apprentice do the following:
GIUS2 The identification of situations which do not meet current standards *include work to be observed and add additional rows if required)*	Observed Yes	No	Employer technical expert factual commentary. I saw the apprentice do the following:
In the box below the technical expert assessor should: **13. Provide overall comments (breadth and depth), evidence and justification for the factual account of this observation. This may include comments on the apprentice's knowledge, skills or performance and should relate to specific activities or elements.** **14. If the apprentice has failed, identify the areas which were lacking and need improvement.** **15. Capture and feedback from the apprentice where they feel they would like to make a comment.**			
Employer Technical Expert Signature:			

Summative Assessment Report		
Apprentice Full Name:		
Employer Technical Expert Full Name:		
Assessment Code	Assessment Description	Observed
GIUS1	The identification and classification of unsafe situations	Yes / No
GIUS2	The identification of situations which do not meet current standards	Yes / No
Assessment Code	Record any comments on the assessment outcome, this shall include the unsafe situation the apprentice was assessed on and detail any questions asked; this shall be completed by the employer technical expert and must be specific to the apprentice.	
GIUS1		
GIUS2		

Full Name and Signatures		
Employer Technical Expert Full Name and Signature	Full Name: Signature:	Date:
Independent Technical Expert Full name and signature (Technical Interview session 1 – practical task)	Full Name: Signature:	Date:
QA Full Name and Signature	Full Name: Signature:	Date:

End-point Assessment
Gas Network Craftsperson
Emergency response
Practical Task 4 - TTDI

Tightness Testing Domestic Installations

Task Code TTDI
Level 3

Practical Task Specification

This specification has been developed as part of the Gas Network Craftsperson Emergency Response Pathway. The specification details the apprentice's required skills, knowledge and behaviour on all relevant matters of gas safety in relation to the installation and commissioning of regulators with medium pressure supply.

The practical task specification is the minimum core gas safety standard of these requirements, but this does not preclude employers from enhancing the skills and knowledge of the learner through additional or company specific training.

Successful completion of this practical task will provide evidence that the apprentice has the required knowledge, understanding and performance skills to test and commission domestic gas pipework installations.

What does this specification look like?

Gas emergency response apprentices will be able to:

- Select, install and commission domestic natural gas meters and regulators
- Test for tightness and purge installations in accordance with industry standards and procedures
- Use and communicate data and information to carry out commissioning, tightness testing and direct purging
- Complete the required documentation when installing and commissioning natural gas domestic meters and regulators

What does the practical task include?

This practical task covers the following matters of gas safety requirements:

- Tightness testing and purging. Total IV ≤ 0.035 m³ (LP)
- Tightness testing and purging. Total IV ≤ 0.035 m³ (MP)
- Checking and/or setting meter regulators
- Re-establish existing gas supply and re-light appliances / plant
- Installation of domestic gas meters

The practical task must include:

- The installation of a natural gas meter $\leq 6m^3/hr$
- Tightness testing and purging the low pressure installation
- Completion of a medium pressure tightness test
- Exchange a natural gas meter $\leq 6m^3/hr$

- Confirm the satisfactory standing, working and operating pressures on low pressure natural gas installation

Realistic Working Environments (RWE) Centre Requirements

Centres are responsible for ensuring that the RWE practical tasks are suitably controlled to ensure that the factual account decisions are valid and reliable, and that work carried out and submitted by the apprentice is prepared and produced by them independently, without assistance from others, and free of plagiarism.

The practical task must be designed following the guidance and requirements given in this document. The Technical Expert checklist must be adhered to and cannot be altered without prior written consent from Energy & Environment Awards.

Centres may deliver any number of the practical tasks together in combined assessment of their own design, but this must be in with the prior agreement with Energy & Environment Awards.

Where the combined option is used the performance and knowledge criteria for the practical task must be satisfied and the respective employer technical expert checklists must be completed.

The following normative documents **must** be made available to the apprentice throughout the assessment process:

Building Regulations
BS6891
BS6400
BS7967
BS5440
IGE/UP/1B
GSIUR
GSIUP version 7
BS7671 / on-site guide to BS767

Practical Task Centre Requirements

The assessments covering the matters of gas safety requirements are:

TTDI1 Install a gas meter
TTDI2 Carry out a tightness test and purge the installation
TTDI3 Tightness testing existing natural gas installations for 75mbar <MOP ≤ 2bar without a MIV (IGE/UP/1B Edition 3 Appendix 4 A4.3)
TTDI4 Exchange a natural gas meter ≤ 6m^3/hr
TTDI5 Check standing, working and operating pressures on an installation

The practical task must be conducted under the supervision of a technical expert from the apprentice's employer. The technical expert will write a factual account of the practical task using Energy & Environment Awards documentation, therefore verifying whether the task was completed appropriately. The practical task is administered by the employer. The employer technical expert must be approved and trained by Energy & Environment Awards. The employer technical expert must be independent of the apprentice; please refer to the Gas Network Craftsperson Assessment Plan page 9 and Section 5 of the Specification for further details.

For TTDI1 and TTDI2 the practical tasks area must be designed to allow the apprentice to install a low-pressure natural gas meter and carry out a tightness test and subsequent commissioning of that installation. It is expected these practical tasks should be a continuation of the installation previously installed and air tested under the pipework unit DPWI. The practical tasks area should include all of the following:

- A low pressure installation with the ECV capped off
- A gas meter and appropriate fittings and fixings as required, are to be made available for selection and installation by the apprentice
- The installation should include with a gas cooker installed on a section of pipework, with no gas meter installed
- Labels and notices must not be connected to the installation
- A selection of appropriate and inappropriate labels and notices should be available for use by the apprentice
- Centres are free to arrange assessment bays to suit their requirements providing that the conditions of providing a realistic working environment and safety requirements are met
- The area used for assessment must be for such purposes only and the apprentice must not have previously worked in the same area or bay

- The apprentice must be provided with a diagram of the completed installation design

For TTDI3 the practical tasks area must be designed to allow the apprentice to tightness test a meter installation with a supply pressure of 75mbar - ≤2bar. This supply pressure can be provided through the use of compressed air to replicate the pressure expected when encountering a medium pressure system. The following criteria must be satisfied:

- Provision of a medium pressure regulator connected to a domestic gas meter and installed with a selection of appliances

For TTDI4 the practical tasks area must be designed to allow the apprentice to exchange a low-pressure natural gas meter. The practical tasks area must be developed using the following equipment and criteria:

- A low pressure installation connected to a primary metric domestic gas meter and installed with appliances connected
- A primary imperial domestic gas meter (not labelled) allowing the learner to exchange the meter
- A simulated gas service pipe of minimum diameter ¾", terminating with a capped ECV fitted in either the horizontal or vertical plane and turned on
- A gas supply of pressure ≤ 75 mbar
- There must be no marking or labels on the gas service or ECV
- All materials to facilitate the installation must be supplied e.g. regulator, pipe, flexible connection, meter bracket, fittings to enable the installation of the meter and associated components

For TTDI5 the practical tasks area must be developed to allow the apprentice to check and adjust as necessary, the standing, working and operating pressures on domestic gas installations. The practical tasks must be developed using the following equipment and criteria:

- A natural gas low-pressure installation including pipework with a domestic gas meter and regulator fitted
- A selection of appliances installed and connected to the gas installation
- A regulator set at an incorrect pressure that will require resetting
- A selection of regulator seals and equipment

The full range of warning labels and advisory notices and appropriate documentation for the recording of details and any defects must be made available to the apprentice. The area used for this exercise must be for the practical tasks purposes only and the apprentice must not have had prior access to this area.

The practical tasks must be carried over a maximum work time of 9 hours +/- 10% and the delivery time period must not exceed a maximum of three days due to the safety critical nature of the activities.

There may be breaks during the practical task to allow the apprentice to move from one location to another and breaks in line with working time regulations which must all be supervised. The employer technical expert must supervise the apprentice on a one-to one basis to maintain quality and rigour.

Apprentice Requirements

The apprentice must successfully complete all of the following:

- Ensure all health and safety requirements are observed throughout the assessment
- Specify, install and commission natural gas domestic meters and regulators
- Identify and complete the documentation required when installing and commissioning natural gas domestic meters and regulators
- Test for tightness and purge installations in accordance with industry standards and procedures
- Tightness testing and direct purging of gas systems and components
- Use and communicate data and information to carry out commissioning, tightness testing and direct purging
- Exchange a gas meter
- Correctly use a suitable temporary continuity bond
- Select and applying the correct labels and notices
- Confirm the meter regulator operating pressure
- Adjust the meter regulator operating pressure
- Re-seal the meter regulator following any adjustment
- Disconnect a meter and seal the meter, service and outlet connections

Grading

Will take place during Session 1 of the technical interview, underpinned by the logbook. Session 1 will only focus on the practical task (post gateway evidence). The employer technical expert will complete a factual account of the practical task and

submit the outcomes to Energy & Environment Awards for the independent assessor to review. The factual account of the task will be used to inform questioning in Session 1 of the interview. It must not be referenced in Session 2.

The independent assessor who conducts the interviews will combine the result of Session 1 (practical task – post gateway) and Session 2 (on-programme – post gateway) to determine the overall technical interview grade. A fail in either of the two parts will result in the technical interview fail grade being awarded. The technical interview pass and distinction grading combinations are shown in table 5 of the Assessment Plan on page 19 and in Section 5 of the GNC Emergency Response Specification

Assessment Duration

The apprentice has 30 minutes to complete TTDI1
The apprentice has 30 minutes to complete TTDI2
The apprentice has 30 minutes to complete TTDI3
The apprentice has 30 minutes to complete TTDI4
The apprentice has 30 minutes to complete TTDI5

Technical Expert Requirements

Apprentices carrying out the practical tasks will be observed by an Energy & Environment Awards standardised and approved employer technical expert. The employer technical expert:

- must be nominated by the apprentice's employer
- must demonstrate competence in gas network operations as conducted by the apprentice's employer, for example experience of working in the gas networks sector at level 3 or above
- must have completed a minimum of 2 days continuing professional development (CPD) relevant to gas networks in the last year
- may hold or be working towards a recognised assessor award, but must have received training from Energy & Environment Awards in terms of administering the practical task
- must complete a statement for submission with the apprentice's report as advised by Energy & Environment Awards

- must supervise the practical task
- must provide written instructions and brief the apprentice at the beginning of the task as per Energy & Environment Awards training but must not discuss the task with the apprentice before, during or after the practical task
- must complete a factual account of the practical task using Energy & Environment Awards approved documentation and as per Energy & Environment Awards's guidelines verifying whether the task was completed appropriately
- must provide technical information at the technical interview upon request
- must not have had any involvement with the apprentice's on-programme learning or training and must not guide the apprentice in anyway

Employer Technical Expert Checklist TTDI1 Install a gas meter			
Apprentice Full Name:	Apprentice No:		
Date:	Employer Technical Expert Full Name:		
TTDI1 Install a gas meter*(include work to be observed and add additional rows if required)*	Achieved		Employer technical expert factual commentary. I saw the apprentice do the following:
	Yes	No	

In the box below the technical expert assessor should:

1. **Provide overall comments (breadth and depth), evidence and justification for the factual account of this observation. This may include comments on the apprentice's knowledge, skills or performance and should relate to specific activities or elements.**
2. **If the apprentice has failed, identify the areas which were lacking and need improvement.**
3. **Capture and feedback from the apprentice where they feel they would like to make a comment.**

Employer Technical Expert Signature:	

Employer Technical Expert Checklist TTDI2 Carry out a tightness test and purge the installation			
Apprentice Full Name:	Apprentice No:		
Date:	Employer Technical Expert Full Name:		
TTDI2 Carry out a tightness test and purge the installation *(include work to be observed and add additional rows if required)*	Achieved		Employer technical expert factual commentary. I saw the apprentice do the following:
	Yes	No	

In the box below the technical expert assessor should:

1. **Provide overall comments (breadth and depth), evidence and justification for the factual account of this observation. This may include comments on the apprentice's knowledge, skills or performance and should relate to specific activities or elements.**
2. **If the apprentice has failed, identify the areas which were lacking and need improvement.**
3. **Capture and feedback from the apprentice where they feel they would like to make a comment.**

Employer Technical Expert Signature:	

Employer Technical Expert Checklist TTDI2 Carry out a tightness test and purge the installation *(include work to be observed and add additional rows if required)*			
Pipe Material	Pipe Diameter	Pipe Length	Pipe Volume (m^3)
Total Pipework Volume (A)			
Meter Type		Meter Volume (m^3)-(B)	
Total Installation Volume = (A) + (B) = (m^3)			
Installation Details*(include work to be observed and add additional rows if required)*			
Apprentice Full Name:		Employer Technical Expert Full Name:	
Date:		Date:	
Signature:		Signature:	

Employer Technical Expert Checklist TTDI3 Tightness testing existing natural gas installations for 75mbar <MOP ≤ 2bar without a MIV			
Apprentice Full Name:	Apprentice No:		
Date:	Employer Technical Expert Full Name:		
TTDI3 Tightness testing existing natural gas installations for 75mbar <MOP ≤ 2bar without a MIV *(include work to be observed and add additional rows if required)*	Achieved		Employer technical expert factual commentary. I saw the apprentice do the following:
	Yes	No	
In the box below the technical expert assessor should: **1. Provide overall comments (breadth and depth), evidence and justification for the factual account of this observation. This may include comments on the apprentice's knowledge, skills or performance and should relate to specific activities or elements.** **2. If the apprentice has failed, identify the areas which were lacking and need improvement.** **3. Capture and feedback from the apprentice where they feel they would like to make a comment.**			
Employer Technical Expert Signature:			

Employer Technical Expert Checklist TTDI4 Exchange a natural gas meter ≤ 6m³/hr			
Apprentice Full Name:	Apprentice No:		
Date:	Employer Technical Expert Full Name:		
TTDI4 Exchange a natural gas meter ≤ 6m³/hr *(include work to be observed and add additional rows if required)*	Achieved		Employer technical expert factual commentary. I saw the apprentice do the following:
	Yes	No	

In the box below the technical expert assessor should:

1. **Provide overall comments (breadth and depth), evidence and justification for the factual account of this observation. This may include comments on the apprentice's knowledge, skills or performance and should relate to specific activities or elements.**
2. **If the apprentice has failed, identify the areas which were lacking and need improvement.**
3. **Capture and feedback from the apprentice where they feel they would like to make a comment.**

Employer Technical Expert Signature:	

Employer Technical Expert Checklist TTDI5 Check standing, working and operating pressures on an installation			
Apprentice Full Name:	Apprentice No:		
Date:	Employer Technical Expert Full Name:		
TTDI5 Check standing, working and operating pressures on an installation *(include work to be observed and add additional rows if required)*	Achieved		Employer technical expert factual commentary. I saw the apprentice do the following:
	Yes	No	

In the box below the technical expert assessor should:

4. **Provide overall comments (breadth and depth), evidence and justification for the factual account of this observation. This may include comments on the apprentice's knowledge, skills or performance and should relate to specific activities or elements.**
5. **If the apprentice has failed, identify the areas which were lacking and need improvement.**
6. **Capture and feedback from the apprentice where they feel they would like to make a comment.**

Employer Technical Expert Signature:	

Summative Assessment Report		
Apprentice Full Name:		
Employer Technical Expert Full Name:		
Assessment Code	Assessment Description	Achieved
TTDI1	Install a gas meter	Yes / No
TTDI2	Carry out a tightness test and purge the installation	Yes / No
TTDI3	Tightness testing existing natural gas installations for 75mbar <MOP ≤ 2bar without a MIV	Yes / No
TTDI4	Exchange a natural gas meter ≤ 6m^3/hr	Yes / No
TTDI5	Check standing, working and operating pressures on an installation	Yes / No
Assessment Code	Record any comments on the assessment outcome and detail any questions asked; this shall be completed by the employer technical expert and must be specific to the apprentice.	
TTDI1		
TTDI2		
TTDI3		
TTDI4		
TTDI5		

Full Name and Signatures		
Employer Technical Expert's Full Name and Signature	Full name: Signature:	Date:
Independent Technical Expert Full name and signature (Technical Interview session 1 – practical task)	Full Name: Signature:	Date:
QA Full Name and Signature	Full Name: Signature:	Date:

End-point Assessment
Gas Network Craftsperson
Emergency response
Practical Task 5 - DPWI

Domestic Pipework Installations

Task Code DPWI
Level 3

Practical Task Specification

This specification has been developed as part of the Gas Network Craftsperson Emergency Response Pathway. The specification details the apprentice's required skills, knowledge and behaviour on all relevant matters of gas safety in relation to pipework installation.

The practical task specification is the minimum core gas safety standard of these requirements, but this does not preclude employers from enhancing the skills and knowledge of the learner through additional or company specific training.

Successful completion of this practical task will provide evidence that the apprentice has the required knowledge, understanding and performance skills to install, test, and maintain domestic gas pipework installations.

What does this practical task specification look like?

Gas emergency response apprentices will be able to:

- Design gas systems for installing gas pipework
- Plan and prepare work activities for installing domestic gas pipework to one of the following: space heaters, gas cookers, tumble dryers or leisure appliances
- Install a small domestic gas installation
- Replace, exchange, and remove gas pipework to industry standards
- Identify and apply the correct notices, forms and labels as required for domestic gas installation

What does the practical task include?

This practical task covers the following matters of gas safety requirements:

- The installation of pipework and fittings of diameters 6mm to 35mm
- The tightness testing and purging of low-pressure, natural gas installations of volumes ≤ 0.035 m^3

The practical task will include:

- The installation of appliance points
- Satisfactory completion of tightness test using air

- The correct identification of installation defects

Realistic Working Environments (RWE) Centre Requirements

Centres are responsible for ensuring that the RWE practical tasks are suitably controlled to ensure that factual account decisions are valid and reliable, and that work carried out and submitted by the apprentice is prepared and produced by them independently, without assistance from others, and free of plagiarism.

The practical task must be designed following the guidance and requirements given in this document. The Technical Expert checklist must be adhered to and cannot be altered without prior written consent from Energy & Environment Awards.

Centres may deliver any number of the matters of gas safety assessments together in combined assessment of their own design, but this must be in with the prior agreement with Energy & Environment Awards.

Where the combined option is used the performance and knowledge criteria for the practical task must be satisfied and the respective employer technical expert checklists must be completed.

The following normative documents should be made available to the apprentice throughout the assessment process:

Building Regulations
BS6891
BS6400
BS7967
BS5440
IGE/UP/1B
GSIUR
GSIUP version 7
BS7671 / on-site guide to BS7671

Practical Task Centre Requirements

The assessments covering the matters of gas safety requirements are:

DPWI1 The installation of pipework and fittings of diameters 6mm to 35mm
DPWI2 The tightness testing and purging of low-pressure, natural gas installations of volumes ≤ 0.035 m³
DPWI3 Identification of pipework installation defects

The practical task must be conducted under the supervision of a technical expert from the apprentice's employer. The technical expert will write a factual account of the practical task using Energy & Environment Awards documentation, therefore verifying whether the task was completed appropriately. The practical task is administered by the employer. The employer technical expert must be approved and trained by Energy & Environment Awards. The employer technical expert must be independent of the apprentice; please refer to the Gas Network Craftsperson Assessment Plan page 9 and Section 5 of the Specification for further details.

For DPWI1 **and** DPWI2 the practical tasks area must be designed for the apprentice to install a low-pressure natural gas installation that includes all of the following criteria:

- A domestic gas meter
- Pipework of the following type and diameter:
  - 35mm copper tube
  - 22mm copper tube
  - 15mm copper tube
  - 1" Mild steel tube
- Pipework fittings and equipment to install the installation including
  - Meter regulator and meter connections
  - Solder ring fitting
  - End feed fitting
  - Press fit connection
  - 22mm – 1"BSP connection
  - 1"BSP union
  - Diameter reducing fitting
  - Leisure point
  - Cooker back plate elbow

- The practical tasks area must allow provision for the apprentice to produce both and parallel off – set bend (return set) and a 90^0 bend using either a bending spring or handheld bending machine
- The centre must supply all the installation materials to connect the meter to the appliance points
- Prior to commencing the practical task, the ECV must be capped off with the meter and all fixings required being made available for the learner to select and install this in line with industry standards
- The practical task area must be devoid of any labels and notices, but a selection of appropriate labels and notices are made available for the apprentice to choose and apply as necessary

- Centres are free to arrange practical task bays to suit their requirements providing that the conditions of providing a realistic working environment and safety requirements are met
- The area used for practical task must be for such purposes only and the apprentice must not have previously worked in the same area or bay
- The apprentice must be provided with a diagram of the completed installation design

For DPWI3 the practical tasks area must be designed to allow the apprentice to identify pipework installation defects on a low-pressure natural gas installation that includes all of the following criteria:

- Pipe passing through a wall un-sleeved
- Pipe passing through an unsealed sleeve
- Inaccessible ECV with incorrectly fitted lever
- Open-ended isolation valve (connected to a live gas supply)
- Incorrect use of leisure point e.g. fitted within premises with a flued appliance connected
- Incorrect jointing of pipework using non approved methods, including corrugated stainless steel pipe
- Incorrectly positioned or damaged permanent equipotential bonding
- Pipework installed too close to electrical equipment
- Pipework capped and sealed with a non-metallic fitting
- Correctly and incorrectly positioned emergency / isolation control / valve fitted with the gas meter positioned internally
- Incorrect use of flexible connections
- Pipework contained within a duct impairing provision for fire / smoke separation
- Inaccessible union or compression fittings e.g. under floorboards
- Incorrectly sized pipework
- Unprotected pipework installed under screed floors
- Pipework with inadequate or incorrect support

The full range of warning labels and advisory notices and appropriate documentation for the recording of defects must be made available to the apprentice. The area used for this exercise must be for practical task purposes only and the apprentice must not have had prior access to this area.

The practical tasks must be carried over a maximum work time of 9 hours +/- 10% and the delivery time period must not exceed a maximum of three days due to the safety critical nature of the activities.

There may be breaks during the practical task to allow the apprentice to move from one location to another and breaks in line with working time regulations which must all be supervised. The employer technical expert must supervise the apprentice on a one-to one basis to maintain quality and rigour.

Apprentice Requirements

The apprentice must successfully complete all of the following:

- Ensure all health and safety requirements are observed throughout the assessment
- Prepare the work site for installation by ensuring that all work areas are free from hazards and that all surfaces are prepared
- Assess the work location, plan out the pipework routes and the materials that are required
- Confirm the availability of all appropriate information required to complete the task
- Confirm the location of the new appliance points and that the ventilation requirements are satisfactory
- Identify appropriate input services and confirm they are suitable for the proposed installation
- Install the appliance points in the agreed location and complete all pipework installation as necessary
- Complete pipework connections to the appliance points
- Satisfactorily complete an air test on the installation
- Inspect a gas installation and identify any pipework installation defects
- As appropriate supply and fit the correct labels for leaving the installation un-commissioned

Grading

Will take place during Session 1 of the technical interview, underpinned by the logbook. Session 1 will only focus on the practical task (post gateway evidence). The employer technical expert will complete a factual account of the practical task and submit the outcomes to Energy & Environment Awards for the independent assessor to review. The factual account of the task will be used to inform questioning in Session 1 of the interview. It must not be referenced in Session 2.

The independent assessor who conducts the interviews will combine the result of Session 1 (practical task – post gateway) and Session 2 (on-programme – post gateway) to determine the overall technical interview grade. A fail in either of the two

sessions will result in the technical interview fail grade being awarded. The technical interview pass and distinction grading combinations are shown in table 5 of the Assessment Plan on page 19 and in Section 5 of the GNC Emergency Response Specification.

Assessment Duration

The apprentice has 3 hours to complete DPWI1 and DPWI2.
The apprentice has 1 hour to complete DPWI3.

Technical Expert Requirements

Apprentices carrying out the practical tasks will be observed by an Energy & Environment Awards standardised and approved employer technical expert. The employer technical expert:

- must be nominated by the apprentice's employer
- must demonstrate competence in gas network operations as conducted by the apprentice's employer, for example experience of working in the gas networks sector at level 3 or above
- must have completed a minimum of 2 days continuing professional development (CPD) relevant to gas networks in the last year
- may hold or be working towards a recognised assessor award, but must have received training from Energy & Environment Awards in terms of administering the practical task
- must complete a statement for submission with the apprentice's report as advised by Energy & Environment Awards
- must supervise the practical task
- must provide written instructions and brief the apprentice at the beginning of the task as per Energy & Environment Awards training but must not discuss the task with the apprentice before, during or after the practical task
- must complete a factual account of the practical task using Energy & Environment Awards approved documentation and as per Energy & Environment Awards's guidelines verifying whether the task was completed appropriately
- must provide technical information at the technical interview upon request
- must not have had any involvement with the apprentice's on-programme learning or training and must not guide the apprentice in anyway

Employer Technical Expert Checklist DPWI1 The installation of pipework and fittings of diameters 6mm to 35mm DPWI2 The tightness testing and purging of low-pressure, natural gas installations of volumes ≤ 0.035 m³			
Apprentice Full Name:	Apprentice No:		
Date:	Employer Technical Expert Full Name:		
DPWI1 The installation of pipework and fittings of diameters 6mm to 35mm *(include work to be observed and add additional rows if required)*	Achieved		Employer technical expert factual commentary. I saw the apprentice do the following:
	Yes	No	
DPWI2 The tightness testing (with air) of new low-pressure, natural gas installations of volumes ≤ 0.035 m³ *(include work to be observed and add additional rows if required)*	Achieved		Employer technical expert factual commentary. I saw the apprentice do the following:
	Yes	No	

In the box below the technical expert assessor should:

1. **Provide overall comments (breadth and depth), evidence and justification for the factual account of this observation. This may include comments on the apprentice's knowledge, skills or performance and should relate to specific activities or elements.**
2. **If the apprentice has failed, identify the areas which were lacking and need improvement.**
3. **Capture and feedback from the apprentice where they feel they would like to make a comment.**

Employer Technical Expert Signature:	

Technical Expert Checklist DPWI3 Identification of pipework installation defects			
Apprentice Full Name:	Apprentice No:		
Date:	Employer Technical Expert Full Name:		
Identification of pipework installation defects	Achieved		Employer technical expert factual commentary. I saw the apprentice do the following:
	Yes	No	
Correct classification of unsafe situations	Achieved		Employer technical expert factual commentary. I saw the apprentice do the following:
	Yes	No	

In the box below the technical expert assessor should:

1. **Provide overall comments (breadth and depth), evidence and justification for the factual account of this observation. This may include comments on the apprentice's knowledge, skills or performance and should relate to specific activities or elements.**
2. **If the apprentice has failed, identify the areas which were lacking and need improvement.**
3. **Capture and feedback from the apprentice where they feel they would like to make a comment.**

Employer Technical Expert Signature:	

Summative Assessment Report		
Apprentice Full Name:		
Employer Technical Expert Name:		
Assessment Code	Assessment Description	Achieved
DPWI1	The installation of pipework and fittings of diameters 6mm to 35mm	Yes / No
DPWI2	The tightness testing and purging of low-pressure, natural gas installations of volumes ≤ 0.035 m^3	Yes / No
DPWI3	Identification of pipework installation defects	Yes / No
Assessment Code	Record any comments on the assessment outcome and detail any questions asked; this shall be completed by the employer technical expert and must be specific to the apprentice	

DPWI1	
DPWI2	
DPWI3	

Full Name and Signatures		
By signing below, I confirm that the information provided is correct and is a true reflection of the performance by apprentice:		
Employer Technical Expert Full Name and Signature (Practice Practical Task):	Full Name: Signature:	Date:
Employer Technical Expert Full Name and Signature. (Practice Practical Task):	Full Name: Signature:	Date:
By signing below, I confirm that the information provided is correct and is a true reflection of the performance by the apprentice recorded by the employer technical expert:		
Independent Assessor Full Name and Signature. (Technical interview - Session 1- Practice Practical Task):	Full Name: Signature:	Date:
QA Full Name and Signature.	Full Name: Signature:	Date:

End-point Assessment
Gas Network Craftsperson
Emergency response
Practical Task 6 - DMET

Meter Installations 6m^3/hr – 40m^3/hr

Unit Code MTRI
Level 3

Practical Task Specification

This specification has been developed as part of the Gas Network Craftsperson Emergency Response Pathway. The specification details the apprentice's required skills, knowledge and behaviour on all relevant matters of gas safety in relation to the installation and exchange and removal of gas diaphragm meters of capacity 6m^3/hr – 40m^3/hr.

The practical task specification is the minimum core gas safety standard of these requirements, but this does not preclude employers from enhancing the skills and knowledge of the learner through additional or company specific training.

Successful completion of this practical task will provide evidence that the apprentice has the required knowledge, understanding and performance skills to install and maintain gas diaphragm meters of capacity 6m^3/hr – 40m^3/hr.

What does this practical task specification look like?

Gas Emergency Response Apprentices will be able to:

- Determine the pressure of the gas service
- Plan and prepare work activities for installing, exchanging or removing gas diaphragm meters of capacity 6m^3/hr – 40m^3/hr
- Confirm the location of the meter installation is in accordance with regulations and industry requirements
- Install, exchange, and remove gas meters to industry standards
- Identify and apply the correct notices, forms and labels as required for gas diaphragm meter installations

What does the practical task include?

This assessment covers the following matters of gas safety requirements:

- MET1 the installation, exchange or removal of gas diaphragm meters of capacity 6m^3/hr
- MET4 the installation, exchange or removal of gas diaphragm meters of capacity 40m^3/hr

The practical task must include:

- The Installation of domestic diaphragm gas meters of capacity 6m^3/hr
- The Installation of diaphragm gas meters of capacity 40m^3/hr
- Satisfactory completion of tightness test procedures
- The setting and adjustment of meter regulators

Realistic Working Environments (RWE) Centre Requirements

Centres are responsible for ensuring that the RWE practical tasks are suitably controlled to ensure that factual account decisions are valid and reliable, and that work submitted by the apprentice is prepared and produced by them independently, without assistance from others, and free of plagiarism.

The practical task must be designed following the guidance and requirements given in this document. The Technical Expert Checklist must be adhered to and cannot be altered without prior written consent from Energy & Environment Awards

Centres may deliver any number of the practical tasks together in combined assessment of their own design, but this must be in with the prior agreement with Energy & Environment Awards.

Where the combined option is used the performance and knowledge criteria for the practical task must be satisfied and the respective employer technical expert checklists must be completed.

The following normative documents **must** be made available to the apprentice throughout the assessment process:

Building Regulations
BS6891
BS6400
IGE/UP/1b
GSIUR
GSIUP
HSL56 Reg 12, Reg13 and Reg16

Practical Task Centre Requirements

The practical tasks covering the matters of gas safety requirements are:

MTRI1	The installation or exchange of diaphragm meters and associated equipment of capacity 6m^3/hr and 40m^3/hr
MTRI2	The tightness testing and purging of low-pressure, natural gas installations of volumes ≤ 0.035 m^3
MTRI3	The testing and commissioning of regulators and valves

The practical task must be conducted under the supervision of a technical expert from the apprentice's employer. The technical expert will write a factual account of the practical task using Energy & Environment Awards documentation, therefore verifying whether the task was completed appropriately. The practical task is administered by the employer. The employer technical expert must be approved and trained by Energy & Environment Awards. The employer technical expert must be independent of the apprentice; please refer to the Gas Network Craftsperson Assessment Plan page 9 and Section 5 of the Specification for further details.

The practical task area must be designed to include all of the following criteria:

- Facility for the installation or exchange of:
  - Domestic meters of capacity 6m^3/hr
  - Diaphragm meters of capacity 40m^3/hr

- Pipework fittings and equipment to facilitate the meter installation / exchange including:
  - Meter brackets
  - Meter Regulator
  - Meter connections
  - Pliable connections
  - ECV valves
  - Connection to a downstream installation
  - A gas burning appliance to allow purging, operating pressure checks and confirm meter operation

- The centre must supply all the installation materials and tools required to complete the task
- The practical tasks area must be devoid of any labels and notices, but a selection of appropriate labels and notices are made available for the apprentice to choose and apply as necessary.

- Centres are free to arrange practical task bays to suit their requirements providing that the conditions of providing a realistic working environment and safety requirements are met
- The area used for practical tasks must be for such purposes only and the apprentice must not have previously worked in the same area or bay

Apprentice requirements

The apprentice must successfully complete all of the following:

- Ensure all health and safety requirements are observed throughout the practical tasks
- Prepare the work site for installation by ensuring that all work areas are free from hazards and that all surfaces are prepared.
- Assess the work location, plan out the pipework routes and the materials that are required
- Confirm the availability of all appropriate information required to complete the task
- Confirm the location of the meter and that ventilation requirements are satisfactory
- Identify appropriate input services and confirm they are suitable for the proposed installation
- Install or exchange the meter in the agreed location and complete all pipework connections as necessary
- Complete pipework connections to the downstream installation
- Satisfactorily complete a tightness test on the installation
- Inspect a gas installation and identify any pipework installation defects
- As appropriate supply and fit the correct labels for the meter installation

Grading

Will take place during Session 1 of the technical interview, underpinned by the logbook. Session 1 will only focus on the practical task (post gateway evidence). The employer technical expert will complete a factual account of the practical task and submit the outcomes to Energy & Environment Awards for the independent assessor to review. The factual account of the task will be used to inform questioning in Session 1 of the interview. It must not be referenced in Session 2.

The independent assessor who conducts the interviews will combine the result of Session 1 (practical task – post gateway) and Session 2 (on-programme – post gateway) to determine the overall technical interview grade. A fail in either of the two

sessions will result in the technical interview fail grade being awarded. The technical interview pass and distinction grading combinations are shown in table 5 of the Assessment Plan on page 19 and in Section 5 of the GNC Emergency Response Specification.

Assessment duration

The apprentice has 4 hours to complete this Practical Task.

Technical Expert Requirements

Apprentices carrying out the practical tasks will be observed by an Energy & Environment Awards standardised and approved employer technical expert. The employer technical expert:

- must be nominated by the apprentice's employer
- must demonstrate competence in gas network operations as conducted by the apprentice's employer, for example experience of working in the gas networks sector at level 3 or above
- must have completed a minimum of 2 days continuing professional development (CPD) relevant to gas networks in the last year
- may hold or be working towards a recognised assessor award, but must have received training from Energy & Environment Awards in terms of administering the practical task
- must complete a statement for submission with the apprentice's report as advised by Energy & Environment Awards
- must supervise the practical task
- must provide written instructions and brief the apprentice at the beginning of the task as per Energy & Environment Awards training but must not discuss the task with the apprentice before, during or after the practical task
- must complete a factual account of the practical task using Energy & Environment Awards approved documentation and as per Energy & Environment Awards's guidelines verifying whether the task was completed appropriately
- must provide technical information at the technical interview upon request
- must not have had any involvement with the apprentice's on-programme learning or training and must not guide the apprentice in anyway

Employer Technical Expert Checklist MTRI1 - The installation or exchange of diaphragm meters and associated equipment of capacity 6m^3/hr and 40m^3/hr			
Apprentice Full Name:	Apprentice No:		
Date:	Employer Technical Expert Full Name:		
MTRI1a The installation or exchange of diaphragm meters of capacity 6m^3/hr	Achieved		Employer technical expert factual commentary. I saw the apprentice do the following:
	Yes	No	
MTRI1b The installation or exchange of diaphragm meters of capacity 40m^3/hr	Achieved		Employer technical expert factual commentary. I saw the apprentice do the following:
	Yes	No	

In the box below the technical expert assessor should:

1. **Provide overall comments (breadth and depth), evidence and justification for the factual account of this observation. This may include comments on the apprentice's knowledge, skills or performance and should relate to specific activities or elements.**
2. **If the apprentice has failed, identify the areas which were lacking and need improvement.**
3. **Capture and feedback from the apprentice where they feel they would like to make a comment.**

Employer Technical Expert Signature:	

Technical Expert Checklist MTRI2 The tightness testing of a low-pressure, natural gas installations of volumes ≤ 0.035 m³ MTRI3 The of testing and commissioning of regulators and valves			
Apprentice Full Name:	Apprentice No:		
Date:	Employer Technical Expert Full Name:		
MTRI2 Tightness testing of a low-pressure, natural gas installations of volumes ≤ 0.035 m³	Achieved		Employer technical expert factual commentary. I saw the apprentice do the following:
	Yes	No	
MTRI3 The of testing and commissioning of regulators and valves	Achieved		Employer technical expert factual commentary. I saw the apprentice do the following:
	Yes	No	
In the box below the technical expert assessor should: **1. Provide overall comments (breadth and depth), evidence and justification for the factual account of this observation. This may include comments on the apprentice's knowledge, skills or performance and should relate to specific activities or elements.** **2. If the apprentice has failed, identify the areas which were lacking and need improvement.** **3. Capture and feedback from the apprentice where they feel they would like to make a comment.**			
Employer Technical Expert Signature:			

Summative Assessment Report		
Apprentice Full Name:		
Employer Technical Expert Full Name:		
Assessment code	Assessment description	Achieved
MTRI1	The installation or exchange of diaphragm meters and associated equipment of capacity 6m^3/hr and 40m^3/hr	Yes / No
MTRI2	The tightness testing and purging of low-pressure, natural gas installations of volumes ≤ 0.035 m^3	Yes / No
MTRI3	The testing and commissioning of regulators and valves	Yes / No
Assessment code	Record any comments on the assessment outcome and detail any questions asked; this shall be completed by the employer technical expert and must be specific to the apprentice	
MTRI1		
MTRI2		
MTRI3		

Full Name and Signatures		
By signing below, I confirm that the information provided is correct and is a true reflection of the performance by apprentice:		
Employer Technical Expert Full Name and Signature (Practice Practical Task):	Full Name: Signature:	Date:
Employer Technical Expert Full Name and Signature. (Practice Practical Task):	Full Name: Signature:	Date:

By signing below, I confirm that the information provided is correct and is a true reflection of the performance by the apprentice recorded by the employer technical expert:		
Independent Assessor Full Name and Signature. (Technical interview - Session 1- Practice Practical Task):	Full Name: Signature:	Date:
QA Full Name and Signature.	Full Name: Signature:	Date:

End-point Assessment
Gas Network Craftsperson
Emergency response
Practical Task 7 - GCOM

Gas Combustion

Unit Code GCOM
Level 3

Practical Task Specification

This specification has been developed as part of the Gas Network Craftsperson emergency response pathway. The specification details the apprentice's required skills, knowledge and behaviour on all relevant matters of gas safety in relation to the satisfactory combustion of natural gas and the use of carbon monoxide detectors.

The practical task specification is the minimum core gas safety standard of these requirements, but this does not preclude employers from enhancing the skills and knowledge of the learner through additional or company specific training.

Successful completion of this practical task will provide evidence that the apprentice has the required knowledge, understanding and performance skills to inspect natural gas flame pictures and to determine the correct operation of carbon monoxide detectors.

What does the practical task specification look like?

Gas emergency response apprentices will be able to:

- Inspect flame pictures and determine the combustion status
- Identify incomplete combustion on gas appliances
- Identify suitable and unsuitable carbon monoxide detectors
- Identify suitable and unsuitable locations for the installation of CO detectors
- Identify and apply the correct notices, forms and labels as required for domestic gas installation

What does the practical task include?

This practical task covers the following matters of gas safety requirements:

- Products and characteristics of combustion

The practical task must include:

- Natural gas burners with both complete and incomplete combustion
- CO detectors including:
  - CO detector cards
  - Smoke detectors
  - Electronic CO detectors
  - The correct identification of installation requirements / faults

Realistic Working Environments (RWE) Centre Requirements

Centres are responsible for ensuring that the RWE practical tasks are suitably controlled to ensure that the factual account decisions are valid and reliable, and that work carried out and submitted by the apprentice is prepared and produced by them independently, without assistance from others, and free of plagiarism.

The practical task must be designed following the guidance and requirements given in this document. The employer technical expert checklist must be adhered to and cannot be altered without prior written consent from Energy & Environment Awards.

Centres may deliver any number of the matters of gas safety assessments together in combined assessment of their own design, but this must be in with the prior agreement with Energy & Environment Awards.

Where the combined option is used the performance and knowledge criteria for the practical task must be satisfied and the respective employer technical expert checklists must be completed.

The following normative documents should be made available to the apprentice throughout the assessment process:

Building Regulations
BS6891
BS6400
BS7967
BS5440
IGE/UP/1B
GSIUR
GSIUP version 7
BS7671 / on-site guide to BS7671
Manufacturers' instructions for the appliances being inspected
Manufacturers' instructions for the detector being inspected

Practical Task Centre Requirements

The practical tasks covering the matters of gas safety requirements are:

GCOM1 The visual inspection of the flame picture of burners
GCOM2 The identification of incomplete combustion on appliances
GCOM3 The identification of suitable and unsuitable CO detectors and their locations

The practical task must be conducted under the supervision of a technical expert from the apprentice's employer. The technical expert will write a factual account of the practical task using Energy & Environment Awards documentation, therefore verifying whether the task was completed appropriately. The practical task is administered by the employer. The employer technical expert must be approved and trained by Energy & Environment Awards. The employer technical expert must be independent of the apprentice; please refer to the Gas Network Craftsperson Assessment Plan page 9 and Section 5 of the Specification for further details.

For GCOM1 and GCOM2 the practical task area must be designed for the apprentice to identify faulty combustion through visual inspection and should include:

- A selection of appliances showing signs of incomplete combustion with all of the following:
  - Excessive gas rates or burner pressure too high or enlarged injector
  - Blocked or damaged heat exchanger
  - Blocked or defective flue
  - Signs of incomplete combustion in and around an appliance
  - A cooker hotplate with a selection of satisfactory and defective burners demonstrating both complete and incomplete combustion
- Faults should be created using simulated, naturally occurring causes e.g., lint, incorrectly adjusted aeration, worn and defective components.

Centres may create workbooks containing written scenarios, drawings, power-point presentations and photographs etc. which will allow apprentices to identify examples of incomplete combustion to compliment the practical task. However, the same media must not have been utilised as part of the apprentice's training.

For GCOM3 the practical task area must be designed to allow the apprentice to identify:

a) Electronic CO detectors both hard wired and battery supplied
b) CO detector cards

c) Smoke detectors
d) Suitable locations for the installation of such detectors
e) Unsuitable locations for the installation of such detectors

Centres may create workbooks containing written scenarios, drawings, power-point presentations and photographs etc. which will allow apprentices to identify examples of faulty detectors and determine suitable and unsuitable locations for their installation. However, the same media must not have been utilised as part of the apprentice's training.

The full range of warning labels and advisory notices and appropriate documentation for the recording of defects should be made available to the apprentice. The area used for this exercise must be for the practical tasks purposes only and the apprentice must not have had prior access to this area.

The practical tasks must be carried over a maximum work time of 9 hours +/- 10% and the delivery time period must not exceed a maximum of three days due to the safety critical nature of the activities.

There may be breaks during the practical task to allow the apprentice to move from one location to another and breaks in line with working time regulations which must all be supervised. The employer technical expert must supervise the apprentice on a one-to one basis to maintain quality and rigour.

Apprentice Requirements

The apprentice must successfully complete all of the following:

- Ensure all health and safety requirements are observed throughout the assessment
- Identify examples of complete combustion
- Identify examples of incomplete combustion
- Identify suitable locations for CO detectors
- Identify unsuitable locations for CO detectors
- Identify the correct operation of CO detectors
- Identify common fault conditions of CO detectors
- Recognise when a CO detector is in "alarm" conditions

Grading

Will take place during Session 1 of the technical interview, underpinned by the logbook. Session 1 will only focus on the practical task (post gateway evidence). The employer technical expert will complete a factual account of the practical task and submit the outcomes to Energy & Environment Awards for the independent assessor to review. The factual account of the task will be used to inform questioning in Session 1 of the interview. It must not be referenced in Session 2.

The independent assessor who conducts the interviews will combine the result of Session 1 (practical task – post gateway) and Session 2 (on-programme – post gateway) to determine the overall technical interview grade. A fail in either of the two sessions will result in the technical interview fail grade being awarded. The technical interview pass and distinction grading combinations are shown in table 5 of the Assessment Plan on page 19 and in Section 5 of the GNC Emergency Response Specification.

Assessment Duration

The apprentice has 30 minutes to complete GCOM1 and GCOM2
The apprentice has 45 minutes to complete GCOM3

Technical Expert Requirements

Apprentices carrying out the practical tasks will be observed by an Energy & Environment Awards standardised and approved employer technical expert. The employer technical expert:

- must be nominated by the apprentice's employer
- must demonstrate competence in gas network operations as conducted by the apprentice's employer, for example experience of working in the gas networks sector at level 3 or above
- must have completed a minimum of 2 days continuing professional development (CPD) relevant to gas networks in the last year
- may hold or be working towards a recognised assessor award, but must have received training from Energy & Environment Awards in terms of administering the practical task
- must complete a statement for submission with the apprentice's report as advised by Energy & Environment Awards
- must supervise the practical task

- must provide written instructions and brief the apprentice at the beginning of the task as per Energy & Environment Awards training but must not discuss the task with the apprentice before, during or after the practical task
- must complete a factual account of the practical task using Energy & Environment Awards approved documentation and as per Energy & Environment Awards's guidelines verifying whether the task was completed appropriately
- must provide technical information at the technical interview upon request
- must not have had any involvement with the apprentice's on-programme learning or training and must not guide the apprentice in anyway

Technical Expert Checklist GCOM1 - The visual inspection of the flame picture of burners GCOM2 - The identification of incomplete combustion on appliances GCOM3 - The identification of suitable and unsuitable CO detectors and their locations			
Apprentice Full Name:			Apprentice No:
Date:			Employer Technical Expert Full Name:
GCOM1 - The visual inspection of the flame picture of burners *(include work to be observed and add additional rows if required)*	Achieved		Employer technical expert factual commentary. I saw the apprentice do the following:
	Yes	No	
GCOM2 - The identification of incomplete combustion on appliances *(include work to be observed and add additional rows if required)*	Achieved		Employer technical expert factual commentary. I saw the apprentice do the following:
	Yes	No	
GCOM3 - The identification of suitable and unsuitable CO detectors and their locations *(include work to be observed and add additional rows if required)*	Achieved		Employer technical expert factual commentary. I saw the apprentice do the following:
	Yes	No	

In the box below the technical expert assessor should: **1. Provide overall comments (breadth and depth), evidence and justification for the factual account of this observation. This may include comments on the apprentice's knowledge, skills or performance and should relate to specific activities or elements.** **2. If the apprentice has failed, identify the areas which were lacking and need improvement.** **3. Capture and feedback from the apprentice where they feel they would like to make a comment.**

Employer Technical Expert Signature:	

Summative Assessment Report		
Apprentice Full Name:		
Employer Technical Expert Full Name:		
Assessment Code	Assessment Description	Achieved
GCOM1	The visual inspection of the flame picture of burners	Yes / No
GCOM2	The identification of incomplete combustion on appliances	Yes / No
GCOM3	The identification of suitable and unsuitable CO detectors and their locations	Yes / No
Assessment Code	Record any comments on the assessment outcome and detail any questions asked; this shall be completed by the employer technical expert and must be specific to the apprentice	
GCOM1		
GCOM2		
GCOM3		

Full Name and Signatures		
By signing below, I confirm that the information provided is correct and is a true reflection of the performance by apprentice:		
Employer Technical Expert Full Name and Signature (Practice Practical Task):	Full Name: Signature:	Date:
Employer Technical Expert Full Name and Signature.	Full Name: Signature:	Date:

(Practice Practical Task):		
By signing below, I confirm that the information provided is correct and is a true reflection of the performance by the apprentice recorded by the employer technical expert:		
Independent Assessor Full Name and Signature. (Technical interview - Session 1- Practice Practical Task):	Full Name: Signature:	Date:
QA Full Name and Signature.	Full Name: Signature:	Date:

End-point Assessment
Gas Network Craftsperson
Emergency response
Practical Task 8 - USGE

Dealing with Reported Upstream Gas Emergencies

Task Code USGE
Level 3

Practical Task Specification

This specification has been developed as part of the Gas Network Craftsperson emergency response pathway. The specification details the apprentice's required skills, knowledge and behaviour on all relevant matters in relation to dealing with reported upstream gas emergencies.

The practical task specification is the minimum core standard of these requirements, but this does not preclude employers from enhancing the skills and knowledge of the learner through additional or company specific training.

Successful completion of this practical task will provide evidence that the apprentice has the required knowledge, understanding and performance skills to attend a reported upstream gas emergency and complete site investigations, taking all action as is necessary.

What does this practical task specification look like?

Gas emergency response apprentices will be able to:

- Respond to reports of gas and gas related emergencies
- Analyse and interpret the result from leakage surveys
- Take action as appropriate to safeguard life and property
- Determine the location of upstream gas escapes
- Where possible complete all actions make the situation on site safe

What does the practical task include?

This practical task covers the following requirements:

- Minimise risk to life and property when attending a reported gas escape
- Upstream site investigation
- Communication requirements
- Recording, monitoring and reviewing the site

The practical task must include:

- The correct use of gas detection instrumentation
- The correct deployment of PPE
- The requirement for safeguards to life and property
- Establishing the search area for upstream gas escapes
- Investigation of property where affected
- Completion of all relevant documentation

Realistic Working Environments (RWE) Centre Requirements

Centres are responsible for ensuring that the RWE practical tasks are suitably controlled to ensure that the factual account decisions are valid and reliable, and that work carried out and submitted by the apprentice is prepared and produced by them independently, without assistance from others, and free of plagiarism.

The practical task must be designed following the guidance and requirements given in this document. The employer technical expert checklist must be adhered to and cannot be altered without prior written consent from Energy & Environment Awards.

Centres may deliver this practical task and practical task DSGE as combined practical tasks.

Where the combined option is used, the performance and knowledge criteria for the practical task must be satisfied, and the respective employer technical expert checklists must be completed.

Appropriate normative and / or company specific documentation should be made available to the apprentice throughout the practical task process. This will include any forms or templates used for the recording of information.

Practical Task Centre Requirements

The practical tasks area must be designed to make provision for the apprentice to effectively deal with a reported upstream gas escape and should include:

- A typical street layout including the following:
  - Roadway and pavement structure
  - Street furniture, for example:
    - Telecom covers
    - Valve boxes
    - Drain covers

- Tools and equipment used during the investigation of an upstream gas escape including:
  - Gas detection instrumentation
  - Fire extinguishers
  - Plant location and avoidance tools
  - Bar hole tool
  - Signs and barriers as necessary

- All appropriate PPE

- Documentation to assist in the site survey including:
  - Plans or maps showing gas mains position
  - Plans or maps showing electrical cables
  - Forms and / or templates used for the recording of survey results

- The centre should have a minimum of three different, documented practical task scenarios that allow the apprentice to meet the requirements of the performance criteria
- The practical tasks scenarios must have unique identification numbers and this number shall be recorded on the employer technical expert checklist
- The practical tasks scenarios should be made available to Energy & Environment Awards or a representative thereof as required
- The practical tasks area must be devoid of any markings from previous assessments
- Centres are free to arrange the practical tasks area to suit their requirements providing that the conditions of providing a realistic working environment are met:
  - This should be under controlled condition and not on a 'live' job
  - This could be in a training centre or simulated in a real working environment
- The area used for practical tasks should be designed for such purposes and the apprentice must not have previously completed the same practical tasks scenario in this area

The practical task must be conducted under the supervision of a technical expert from the apprentice's employer. The technical expert will write a factual account of the practical task using Energy & Environment Awards documentation, therefore verifying whether the task was completed appropriately. The practical task is administered by the employer. The employer technical expert must be approved and trained by Energy & Environment Awards. The employer technical expert must be independent of the apprentice; please refer to the Gas Network Craftsperson Assessment Plan page 9 and Section 5 of the Specification for further details.

Apprentice Requirements

The apprentice must successfully complete all of the following:

- Ensure all health and safety requirements are observed throughout the assessment

- Confirm all equipment to be used is serviceable and within its calibration date
- Assess the work site by ensuring that all work areas are free from hazards
- Complete the gas escape priority actions
- Assess the work location, referring to plans and complete visual inspections
- Confirm the availability of all appropriate information required to complete the task
- Establish the search area in line with company procedures
- Identify utility services and investigate these as appropriate
- Accurately record the findings on site
- Accurately interpret the findings on site and take action as appropriate
- Request assistance as required
- Communicate with internal and external authorities as required

Grading

Will take place during Session 1 of the technical interview, underpinned by the logbook. Session 1 will only focus on the practical task (post gateway evidence). The employer technical expert will complete a factual account of the practical task and submit the outcomes to Energy & Environment Awards for the independent assessor to review. The factual account of the task will be used to inform questioning in Session 1 of the interview. It must not be referenced in Session 2.

The independent assessor who conducts the interviews will combine the result of Session 1 (practical task – post gateway) and Session 2 (on-programme – post gateway) to determine the overall technical interview grade. A fail in either of the two sessions will result in the technical interview fail grade being awarded. The technical interview pass and distinction grading combinations are shown in table 5 of the Assessment Plan on page 19 and in Section 5 of the GNC Emergency Response Specification.

Assessment Duration

The apprentice has 3 hours to complete this assessment.

Technical Expert Requirements

Apprentices carrying out the practical tasks will be observed by an Energy & Environment Awards standardised and approved employer technical expert. The employer technical expert:

- must be nominated by the apprentice's employer
- must demonstrate competence in gas network operations as conducted by the apprentice's employer, for example experience of working in the gas networks sector at level 3 or above
- must have completed a minimum of 2 days continuing professional development (CPD) relevant to gas networks in the last year
- may hold or be working towards a recognised assessor award, but must have received training from Energy & Environment Awards in terms of administering the practical task
- must complete a statement for submission with the apprentice's report as advised by Energy & Environment Awards
- must supervise the practical task
- must provide written instructions and brief the apprentice at the beginning of the task as per Energy & Environment Awards training but must not discuss the task with the apprentice before, during or after the practical task
- must complete a factual account of the practical task using Energy & Environment Awards approved documentation and as per Energy & Environment Awards's guidelines verifying whether the task was completed appropriately
- must provide technical information at the technical interview upon request
- must not have had any involvement with the apprentice's on-programme learning or training and must not guide the apprentice in anyway

Technical Expert Checklist Dealing with Reported Upstream Gas Emergencies			
Apprentice Full Name:	Apprentice No:		
Date:	Employer Technical Expert Full Name:		
Assessment Scenario Number:			
USGE1 - Minimise risk to life and property when attending a reported gas escape	Achieved		Employer technical expert factual commentary. I saw the apprentice do the following:
	Yes	No	
USGE2 - Upstream Site Investigation	Achieved		Employer technical expert factual commentary. I saw the apprentice do the following:
	Yes	No	
USGE3 - Communication Requirements	Achieved		Employer technical expert factual commentary. I saw the apprentice do the following:
	Yes	No	
USGE4 - Recording, Monitoring and Reviewing the Site	Achieved		Employer technical expert factual commentary. I saw the apprentice do the following:
	Yes	No	

In the box below the technical expert assessor should:

1. **Provide overall comments (breadth and depth), evidence and justification for the factual account of this observation. This may include comments on the apprentice's knowledge, skills or performance and should relate to specific activities or elements.**
2. **If the apprentice has failed, identify the areas which were lacking and need improvement.**
3. **Capture and feedback from the apprentice where they feel they would like to make a comment.**

Employer Technical Expert Signature:	

Summative Assessment Report		
Apprentice Full Name:		
Employer Technical Expert Full Name:		
Assessment Code	Assessment Description	Achieved
USGE1	Minimise risk to life and property when attending a reported gas escape	Yes / No
USGE2	Upstream site investigation	Yes / No
USGE3	Communication requirements	Yes / No
USGE4	Recording, monitoring and reviewing the site	Yes / No
Assessment Code	Record any comments on the assessment outcome and detail any questions asked; this shall be completed by the employer technical expert and must be specific to the apprentice	
USGE1		
USGE2		
USGE3		
USGE4		

Full Name and Signatures		
By signing below, I confirm that the information provided is correct and is a true reflection of the performance by apprentice:		
Employer Technical Expert Full Name and Signature (Practice Practical Task):	Full Name: Signature:	Date:
Employer Technical Expert Full Name and Signature. (Practice Practical Task):	Full Name: Signature:	Date:
By signing below, I confirm that the information provided is correct and is a true reflection of the performance by the apprentice recorded by the employer technical expert:		
Independent Assessor Full Name and Signature. (Technical interview - Session 1- Practice Practical Task):	Full Name: Signature:	Date:
QA Full Name and Signature.	Full Name: Signature:	Date:

End-point Assessment
Gas Network Craftsperson
Emergency response
Practical Task 9 - DSGE

Dealing with Reported Downstream Gas Emergencies

Task Code DSGE
Level 3

Practical Task Specification

This specification has been developed as part of the Gas Network Craftsperson emergency response pathway. The specification details the apprentice's required skills, knowledge and behaviour on all relevant matters in relation to dealing with reported downstream gas emergencies.

The practical task specification is the minimum core standard of these requirements, but this does not preclude employers from enhancing the skills and knowledge of the learner through additional or company specific training.

Successful completion of this unit should provide evidence that the apprentice has the required knowledge, understanding and performance skills to attend a reported downstream gas emergency and complete site investigations. It will also provide evidence that the apprentice has the required knowledge, understanding and performance skills to attend a report of carbon monoxide leakage or fumes. Completion of this practical task will provide evidence of the apprentice's ability to successfully undertake downstream site investigations taking all action as is necessary.

What does this practical task specification look like?

Gas emergency response apprentices will be able to:

- Respond to reports of gas and gas related emergencies
- Respond to reports of carbon monoxide leakage
- Analyse and interpret the result from gas and carbon monoxide leakage surveys
- Take action as appropriate to safeguard life and property
- Determine the location of upstream gas escapes
- Where possible complete all actions make the situation on site safe

What does the practical task include?

This practical task covers the following requirements for reported downstream gas escapes:

- DSGE1 Minimise risk to life and property when attending a reported gas escape
- DSGE2 Downstream site investigation
- DSGE3 Communication requirements
- DSGE4 Recording, monitoring and reviewing the site

This practical task covers the following requirements for reports of carbon monoxide leakage:

- CME1 Minimise risk to life and property when attending a report of CO
- CME2 Downstream site investigation
- CME3 Communication requirements
- CME4 Recording, monitoring and reviewing the site

The practical tasks must include:

- The correct use of gas detection instrumentation
- The correct deployment of PPE
- The requirement for safeguards to life and property
- Establishing the search area for downstream gas escapes
- Establishing the search area for reports of carbon monoxide leakage
- Investigation of property likely to be affected
- Evacuation of property
- Completion of all relevant documentation

Realistic Working Environments (RWE) Centre Requirements

Centres are responsible for ensuring that the practical tasks are suitably controlled to ensure that factual account decisions are valid and reliable, and that work carried out and submitted by the apprentice is prepared and produced by them independently, without assistance from others, and free of plagiarism.

The practical task must be designed following the guidance and requirements given in this document. The employer technical expert checklist must be adhered to and cannot be altered without prior written consent from Energy & Environment Awards.

Centres may deliver this practical task and practical task USGE as a combined practical task.

Where the combined option is used, the performance and knowledge criteria for the practical task must be satisfied, and the respective employer technical expert checklists must be completed.

Appropriate normative and / or company specific documentation should be made available to the apprentice throughout the practical task process. This will include any forms or templates used for the recording of information.

Practical Task Centre Requirements

The practical task area must be designed to make provision for the apprentice to effectively deal with a reported downstream gas escape and should include:

- A typical house or building with a door and open-able windows; this should be furnished to basic requirements and contain the following:
  - A live gas supply*
  - Gas meter
  - Gas appliances that are operable
  - Examples of faulty gas appliances or installation faults
  - Live electrical supply*
  - Ducts or conduits that enter the property
    - Telecoms*
    - Water*

*Where this is delivered in an assessment centre the supply may be connected from an internal system but should appear as though it is connected to the mains supply.

- Tools and equipment used during the investigation of an upstream gas escape including:
  - Gas detection instrumentation
  - Personal monitors
  - Fire extinguishers
  - Signs and barriers as necessary
  - All appropriate PPE
- Documentation to assist in the site survey including:
  - Forms and / or templates used for the recording of survey results
- The centre should have a minimum of three different, documented practical task scenarios for both reported gas escapes and reports of carbon monoxide leakage; these must allow the apprentice to meet the requirements of the performance criteria
- The practical task scenarios must have unique identification numbers and this number shall be recorded on the employer technical expert checklist
- The practical task scenarios should be made available to Energy & Environment Awards or a representative thereof as required
- Centres are free to arrange the practical task area to suit their requirements providing that the conditions of providing a realistic working environment are met:
  - This should be under controlled conditions and not on a “live” job

- This could be in a training centre or simulated in a real working environment
- The area used for the practical task should be designed for such purposes and the apprentice must not have previously completed the same practical task scenario in this area
- The use of persons to play the part of the occupiers of property could be considered, but where used the employer technical expert must be vigilant to ensure that such persons do not lead or prompt the apprentice during the practical task

The practical task must be conducted under the supervision of a technical expert from the apprentice's employer. The technical expert will write a factual account of the practical task using Energy & Environment Awards documentation, therefore verifying whether the task was completed appropriately. The practical task is administered by the employer. The employer technical expert must be approved and trained by Energy & Environment Awards. The employer technical expert must be independent of the apprentice; please refer to the Gas Network Craftsperson Assessment Plan page 9 and Section 5 of the Specification for further details.

Apprentice Requirements

The apprentice must successfully complete all of the following:

- Ensure all health and safety requirements are observed throughout the assessment
- Confirm all equipment to be used is serviceable and within its calibration date
- Assess the work site by ensuring that all work areas are free from hazards
- Complete the gas escape priority actions
- Safely access and assess the work location and complete visual inspections
- Confirm the availability of all appropriate information required to complete the task
- Undertake an effective search of the property in line with company procedures
- Identify utility services and other entry points within the building and investigate these as appropriate
- Accurately record the findings on site
- Accurately interpret the findings on site and take action as appropriate

- Request assistance as required
- Communicate with internal and external authorities as required

Grading

Will take place during Session 1 of the technical interview, underpinned by the logbook. Session 1 will only focus on the practical task (post gateway evidence). The employer technical expert will complete a factual account of the practical task and submit the outcomes to Energy & Environment Awards for the independent assessor to review. The factual account of the task will be used to inform questioning in Session 1 of the interview. It must not be referenced in Session 2.

The independent assessor who conducts the interviews will combine the result of Session 1 (practical task – post gateway) and Session 2 (on-programme – post gateway) to determine the overall technical interview grade. A fail in either of the two sessions will result in the technical interview fail grade being awarded. The technical interview pass and distinction grading combinations are shown in table 5 of the Assessment Plan on page 19 and in Section 5 of the GNC Emergency Response Specification.

Assessment Duration

The apprentice has a maximum of 3.5 hours to complete this assessment.

Technical Expert Requirements

Apprentices carrying out the practical tasks will be observed by an Energy & Environment Awards standardised and approved employer technical expert. The employer technical expert:

- must be nominated by the apprentice's employer
- must demonstrate competence in gas network operations as conducted by the apprentice's employer, for example experience of working in the gas networks sector at level 3 or above
- must have completed a minimum of 2 days continuing professional development (CPD) relevant to gas networks in the last year
- may hold or be working towards a recognised assessor award, but must have received training from Energy & Environment Awards in terms of administering the practical task
- must complete a statement for submission with the apprentice's report as advised by Energy & Environment Awards
- must supervise the practical task

- must provide written instructions and brief the apprentice at the beginning of the task as per Energy & Environment Awards training but must not discuss the task with the apprentice before, during or after the practical task
- must complete a factual account of the practical task using Energy & Environment Awards approved documentation and as per Energy & Environment Awards's guidelines verifying whether the task was completed appropriately
- must provide technical information at the technical interview upon request
- must not have had any involvement with the apprentice's on-programme learning or training and must not guide the apprentice in anyway

Technical Expert Checklist Dealing with Reported Downstream Gas Emergencies			
Apprentice Full Name:	Apprentice No:		
Date:	Employer Technical Expert Full Name:		
Assessment Scenario Number			
DSGE1 - Minimise risk to life and property when attending a reported gas escape *(include work to be observed and add additional rows if required)*	Achieved		Employer technical expert factual commentary. I saw the apprentice do the following:
	Yes	No	
DSGE2 - Downstream Site Investigation *(include work to be observed and add additional rows if required)*	Achieved		Employer technical expert factual commentary. I saw the apprentice do the following:
	Yes	No	
DSGE3 - Communication Requirements *(include work to be observed and add additional rows if required)*	Achieved		Employer technical expert factual commentary. I saw the apprentice do the following:
	Yes	No	
DSGE4 - Recording, Monitoring and Reviewing the Site *(include work to be observed and add additional rows if required)*	Achieved		Employer technical expert factual commentary. I saw the apprentice do the following:
	Yes	No	
In the box below the technical expert assessor should: **1. Provide overall comments (breadth and depth), evidence and justification for the factual account of this observation. This may include comments on the apprentice's knowledge, skills or performance and should relate to specific activities or elements.** **2. If the apprentice has failed, identify the areas which were lacking and need improvement.** **3. Capture and feedback from the apprentice where they feel they would like to make a comment.**			

Employer Technical Expert Signature:	

Summative Assessment Report		
Apprentice Full Name:		
Employer Technical Expert Full Name:		
Assessment Code	Assessment Description	Achieved
DSGE1	Minimise risk to life and property when attending a reported gas escape	Yes / No
DSGE2	Downstream site investigation	Yes / No
DSGE3	Communication requirements	Yes / No
DSGE4	Recording, monitoring and reviewing the site	Yes / No
Assessment Code	Record any comments on the assessment outcome and detail any questions asked; this shall be completed by the employer technical expert and must be specific to the apprentice.	
DSGE1		
DSGE2		
DSGE3		
DSGE4		
Full Name and Signatures		
By signing below, I confirm that the information provided is correct and is a true reflection of the performance by apprentice:		
Employer Technical Expert Full Name and Signature (Practice Practical Task):	Full Name: Signature:	Date:
Employer Technical Expert Full Name and Signature. (Practice Practical Task):	Full Name: Signature:	Date:

By signing below, I confirm that the information provided is correct and is a true reflection of the performance by the apprentice recorded by the employer technical expert:		
Independent Assessor Full Name and Signature. (Technical interview - Session 1- Practice Practical Task):	Full Name: Signature:	Date:
QA Full Name and Signature.	Full Name: Signature:	Date:

Employer Technical Expert Checklist Dealing with Reports of Carbon Monoxide Leakage			
Apprentice Full Name:			Apprentice No:
Date:			Employer Technical Expert Full Name:
Assessment Scenario Number:			
CME1 - Minimise risk to life and property when attending a report of CO leakage *(include work to be observed and add additional rows if required)*	Achieved		Employer technical expert factual commentary. I saw the apprentice do the following:
	Yes	No	
CME2 - Downstream Site Investigation *(include work to be observed and add additional rows if required)*	Achieved		Employer technical expert factual commentary. I saw the apprentice do the following:
	Yes	No	
CME3 - Communication Requirements *(include work to be observed and add additional rows if required)*	Achieved		Employer technical expert factual commentary. I saw the apprentice do the following:
	Yes	No	
CME4 - Recording, Monitoring and Reviewing the Site *(include work to be observed and add additional rows if required)*	Achieved		Employer technical expert factual commentary. I saw the apprentice do the following:
	Yes	No	

In the box below the technical expert assessor should: **1. Provide overall comments (breadth and depth), evidence and justification for the factual account of this observation. This may include comments on the apprentice's knowledge, skills or performance and should relate to specific activities or elements.** **2. If the apprentice has failed, identify the areas which were lacking and need improvement.** **3. Capture and feedback from the apprentice where they feel they would like to make a comment.**

Employer Technical Expert Signature:	

Summative Assessment Report		
Apprentice Full Name:		
Employer Technical Expert Full Name:		
Assessment Code	Assessment Description	Achieved
CME1	Minimise risk to life and property when attending a report of CO	Yes / No
CME2	Downstream site investigation	Yes / No
CME3	Communication requirements	Yes / No
CME4	Recording, monitoring and reviewing the site	Yes / No
Assessment Code	Record any comments on the assessment outcome and detail any questions asked; this shall be completed by the employer technical expert and must be specific to the apprentice.	
CME1		
CME2		
CME3		
CME4		

Full Name and Signatures		
By signing below, I confirm that the information provided is correct and is a true reflection of the performance by apprentice:		
Employer Technical Expert Full Name and Signature (Practice Practical Task):	Full Name: Signature:	Date:
Employer Technical Expert Full Name and Signature. (Practice Practical Task):	Full Name: Signature:	Date:

By signing below, I confirm that the information provided is correct and is a true reflection of the performance by the apprentice recorded by the employer technical expert:		
Independent Assessor Full Name and Signature. (Technical interview - Session 1- Practice Practical Task):	Full Name: Signature:	Date:
QA Full Name and Signature.	Full Name: Signature:	Date:

Practical Task Record Form

Gas Network Craftsperson – Emergency Response

This document is to be used by the employer technical expert who assesses the practical task elements. The employer technical expert will conduct the practical tasks in line with Energy & Environment Awards requirements. All practical tasks (PT) must be successfully completed, and this form must be sent to the Service Delivery team at Energy & Environment Awards in readiness for the independent assessor to review before the apprentice's technical interview based on the logbook – Session 1 – Practical Task (post – gateway).

Where Energy & Environment Awards is requested to upload to the Gas Safe Register the matters of gas safety (MOG) are indicated below.

Practical Task	Assessment Code	MOG	PT	Successfully Achieved State Yes or No below	Date
1	DMPR	✓	✓		
2	UP1a	✓	✓		
3	GIUS	✓	✓		
4	TTDI	✓	✓		
5	DPWI	✓	✓		
6	MTRI	✓	✓		
7	GCOM	✓	✓		
8	USGE	X	✓		
9	DSGE	X	✓		

Practical Task Confirmation	
Apprentice Full Name:	
Apprentice Number:	
Apprentice Employer Technical Expert Full Name:	
Date:	Time:

Signatories and Results	
The apprentice has successfully completed the practical task(s) ☐	The apprentice was unsuccessful in completing the practical task(s) ☐
Employer Technical Expert Signature:	Date:
Independent Examiner Full Name:	Date:
Independent Examiner Signature:	Date:

Appendix F: Practice Technical Interview Template

GNC Technical Interview Session 1 – Practice Practical Task Record

Select the relevant pathway:

- Electrical and Instrumentation
- Pressure Management
- Pipelines Maintenance
- Emergency Response

Apprentice Full Name	
Employer and Location Postcode or Assessment centre location	
Full Name of Independent Assessor	
Full Name of Employer Technical Expert	
Date of Assessment	
Start Time	
End Time	

Provisional Grade Awarded (Check the box)	Distinction ☐	Pass ☐	Fail ☐

Please Note:

To achieve a Pass the Apprentice must achieve all the pass descriptors.

To achieve a Distinction the Apprentice must achieve all the pass criteria and 5 out of the 8 distinction criteria must be met to achieve a provisional distinction grade.

<table>
<tr><td colspan="5">P1 - Working practices consistently ensure the health and safety of the apprentice and others, demonstrates how to evaluate risk, and implements and reviews control measures which to ensure the safety, security, and integrity of supply.</td></tr>
<tr><td>Independent assessor Questions</td><td colspan="3">S1; S2; S4; S9; B3
Electrical and Instrumentation: NMCiE4; NMCiE12
Pressure Management: NMCPM3; NMCPM9
Pipelines Maintenance: NPMC6
Emergency Response: NERC1; NERC2; NERC3; NERC6; NERC7</td><td rowspan="2">P1 Achieved: Select Y/N below</td></tr>
<tr><td rowspan="3">Questions
Develop some open ended questions</td><td colspan="3">Independent assessor to provide comments and include all additional questions asked, and responses received for clarification.</td></tr>
<tr><td colspan="3"></td><td rowspan="2">y/n</td></tr>
<tr><td>Time reference:</td><td></td><td>Logbook reference</td><td></td></tr>
</table>

<table>
<tr><td colspan="5">D1 - Critically appraised own approach to health and safety, acting as a role model by identifying deficiencies and providing proactive solutions to ensure the safety, security and integrity of supply.</td></tr>
<tr><td>Independent assessor Questions</td><td colspan="3">S1; S2; S4; S9; B3
Electrical and Instrumentation: NMCiE4; NMCiE12
Pressure Management: NMCPM3; NMCPM9
Pipelines Maintenance: NPMC6
Emergency Response: NERC1; NERC2; NERC3; NERC6; NERC7</td><td>D1 Achieved Select Y/N below</td></tr>
<tr><td rowspan="3">Questions
Develop some open ended questions</td><td colspan="3">Independent assessor to provide comments and include all additional questions asked, and responses received for clarification.</td><td rowspan="3">y/n</td></tr>
<tr><td colspan="3"></td></tr>
<tr><td>Time reference:</td><td></td><td>Logbook reference:</td><td></td></tr>
</table>

<table>
<tr><td colspan="5">P2 - Work planning and execution was completed in a competent manner with both methodical and logical order without the need to change or repeat any tasks already completed.</td></tr>
<tr><td>Independent assessor Questions</td><td colspan="3">S3; S10; S11; B1; B5 and B6
Electrical and Instrumentation: NMCEi2; NMCEi9
Pressure Management: NMCPM1; NMCPM3
Pipelines Maintenance: NPMC3; NPMC10
Emergency Response: NERC1; NERC2; NERC3; NERC4; NERC5; NERC8; NERC9; NERC10; NERC11</td><td>P2 Achieved Select Y/N below</td></tr>
<tr><td rowspan="3">Questions
Develop some open ended questions</td><td colspan="3">Independent assessor to provide comments and include all additional questions asked, and responses received for clarification.</td><td rowspan="3">y/n</td></tr>
<tr><td colspan="3"></td></tr>
<tr><td>Time reference:</td><td></td><td>Logbook reference:</td><td></td></tr>
</table>

<table>
<tr><td colspan="5">D2 - Uses recognised planning techniques and implements these to improve work efficiency. Operates upon own initiative, demonstrates examples of critical reflection, analysis and evaluation.</td></tr>
<tr><td>Independent assessor Questions</td><td colspan="3">S3; S10; S11; B1; B5 and B6
Electrical and Instrumentation: NMCEi2; NMCEi9
Pressure Management: NMCPM1; NMCPM3
Pipelines Maintenance: NPMC3; NPMC10
Emergency Response: NERC1; NERC2; NERC3; NERC4; NERC5; NERC8; NERC9; NERC10; NERC11</td><td>D2 Achieved Select Y/N below</td></tr>
<tr><td rowspan="3">Questions
Develop some open ended questions</td><td colspan="3">Independent assessor to provide comments and include all additional questions asked, and responses received for clarification.</td><td rowspan="3">y/n</td></tr>
<tr><td colspan="3"></td></tr>
<tr><td>Time Reference:</td><td></td><td>Logbook reference:</td><td></td></tr>
</table>

<table>
<tr><td colspan="5">P3 - All tasks were completed in a competent manner in accordance with company specific operating procedures.</td></tr>
<tr><td>Independent assessor Questions</td><td colspan="3">S1; S5; S6; S7
Electrical and Instrumentation: NMCiE1; NMCiE2; NMCiE4; NMCiE5; NMCiE9; NMCiE12; NMCiE15
Pressure Management: NMCPM1; NMCPM2; NMCPM3; NMCPM5; NMCPM7; NMCPM8; NMCPM10; NMCPM11; NMCPM12
Pipelines Maintenance: NPMC1; NPMC2; NPMC3; NPMC4; NPMC9; NPMC10; NPMC11
Emergency Response: NERC1; NERC2; NERC3; NERC4; NERC5; NERC8; NERC9; NERC10; NERC11; NERC18; NERC19</td><td>P3 Achieved select Y/N below</td></tr>
<tr><td rowspan="3">Questions
Develop some open ended questions</td><td colspan="3">Independent assessor to provide comments and include all additional questions asked, and responses received for clarification.</td><td rowspan="3">y/n</td></tr>
<tr><td colspan="3"></td></tr>
<tr><td>Time Reference:</td><td></td><td>Logbook reference:</td><td></td></tr>
</table>

<table>
<tr><td colspan="5">D3 - Shows understanding of the detailed technical aspects of the task undertaken and uses this understanding to evaluate the methods used to undertake the task. Consults and involves people from the team and other areas to achieve shared understanding.</td></tr>
<tr><td rowspan="4">Questions
Develop some open ended questions</td><td colspan="3">S1; S5; S6; S7
Electrical and Instrumentation: NMCiE1; NMCiE2; NMCiE4; NMCiE5; NMCiE9; NMCiE12; NMCiE15
Pressure Management: NMCPM1; NMCPM2; NMCPM3; NMCPM5; NMCPM7; NMCPM8; NMCPM10; NMCPM11; NMCPM12
Pipelines Maintenance: NPMC1; NPMC2; NPMC3; NPMC4; NPMC9; NPMC10; NPMC11
Emergency Response: NERC1; NERC2; NERC3; NERC4; NERC5; NERC8; NERC9; NERC10; NERC11; NERC18; NERC19</td><td>D3 Achieved select Y/N below</td></tr>
<tr><td colspan="3">Independent assessor to provide comments and include all additional questions asked, and responses received for clarification.</td><td rowspan="3">y/n</td></tr>
<tr><td colspan="3"></td></tr>
<tr><td>Time Reference:</td><td></td><td>Logbook reference:</td><td></td></tr>
</table>

<table>
<tr><th colspan="5">P4 - A safe, clean and ordered working environment was maintained at all times.</th></tr>
<tr><td>Independent assessor Questions</td><td colspan="3">B6; B8;
Electrical and Instrumentation: NMCiE2; NMCiE5
Pressure Management: NMCPM10; NMCPM11; NMCPM12
Pipelines Maintenance: NPMC1; NPMC2; NPMC3; NPMC10
Emergency Response: NERC8; NERC9</td><td>P4 Achieved select Y/N below</td></tr>
<tr><td rowspan="3">Questions
Develop some open ended questions</td><td colspan="3">Independent assessor to provide comments and include all additional questions asked, and responses received for clarification.</td><td rowspan="3">y/n</td></tr>
<tr><td colspan="3"></td></tr>
<tr><td>Time Reference:</td><td></td><td>Logbook reference:</td><td></td></tr>
</table>

<table>
<tr><th colspan="5">D4 - Educates others when an unsafe working environment is encountered and puts measures in place to mitigate safety issues.</th></tr>
<tr><td rowspan="4">Questions
Develop some open ended questions</td><td colspan="3">B6; B8;
Electrical and Instrumentation: NMCiE2; NMCiE5
Pressure Management: NMCPM10; NMCPM11; NMCPM12
Pipelines Maintenance: NPMC1; NPMC2; NPMC3; NPMC10
Emergency Response: NERC8; NERC9</td><td>D4 Achieved select Y/N below</td></tr>
<tr><td colspan="3">Independent assessor to provide comments and include all additional questions asked, and responses received for clarification.</td><td rowspan="3">y/n</td></tr>
<tr><td colspan="3"></td></tr>
<tr><td>Time Reference:</td><td></td><td>Logbook reference:</td><td></td></tr>
</table>

<table>
<tr><th colspan="5">P5 - Explains the safety, process and company specific engineering requirements of the task undertaken in relation to their role</th></tr>
<tr><td>Independent assessor Questions</td><td colspan="3">B3; B4
Electrical and Instrumentation: NMCiE4; NMCiE12
Pressure Management: NMCPM3; NMCPM5
Pipelines Maintenance: NPMC1; NPMC2; NPMC3; NPMC4; NPMC9; NPMC10
Emergency Response: NERC1; NERC2; NERC7; NERC24</td><td>P5 Achieved Select Y/N below</td></tr>
<tr><td rowspan="3">Questions
Develop some open ended questions</td><td colspan="3">Independent assessor to provide comments and include all additional questions asked, and responses received for clarification.</td><td rowspan="3">y/n</td></tr>
<tr><td colspan="3"></td></tr>
<tr><td>Time Reference:</td><td></td><td>Logbook reference:</td><td></td></tr>
</table>

D5 - Explains the implications of not following safety, process and company specific engineering					
Questions *Develop some open ended questions*	B3; B4; Electrical and Instrumentation: NMCiE4; NMCiE12 Pressure Management: NMCPM3; NMCPM5 Pipelines Maintenance: NPMC1; NPMC2; NPMC3; NPMC4; NPMC9; NPMC10 Emergency Response: NERC1; NERC2; NERC7; NERC24				D5 Achieved Select Y/N below
	Independent assessor to provide comments and include all additional questions asked, and responses received for clarification.				
					y/n
	Time Reference:		Logbook reference:		

<table>
<tr><th colspan="5">P6 - All tools and gas detection equipment are utilised in the correct manner and in accordance with company specific requirements</th></tr>
<tr><td>Independent assessor Questions</td><td colspan="3">S7 and S8
Electrical and Instrumentation: NMCiE2; NMCiE4; NMCiE5; NMCiE9; NMCiE15
Pressure Management: NMCPM1; NMCPM2; NMCPM3; NMCPM5; NMCPM7; NMCPM10; NMCPM11; NMCPM12
Pipelines Maintenance: NPMC3; NPMC10
Emergency Response: NERC4; NERC5; NERC8; NERC9; NERC10; NERC11</td><td>P6 Achieved Select Y/N below</td></tr>
<tr><td rowspan="3">Questions
Develop some open ended questions</td><td colspan="3">Independent assessor to provide comments and include all additional questions asked, and responses received for clarification.</td><td rowspan="3">y/n</td></tr>
<tr><td colspan="3"></td></tr>
<tr><td>Time Reference:</td><td></td><td>Logbook reference:</td><td></td></tr>
</table>

<table>
<tr><th colspan="5">D6 - Uses a range of tools and gas detection equipment and is able to provide full explanation of standards and engineering principles that apply and the reasons for their recommended choice</th></tr>
<tr><td rowspan="4">Questions
Develop some open ended questions</td><td colspan="3">S7 and S8
Electrical and Instrumentation: NMCiE2; NMCiE4; NMCiE5; NMCiE9; NMCiE15
Pressure Management: NMCPM1; NMCPM2; NMCPM3; NMCPM5; NMCPM7; NMCPM10; NMCPM11; NMCPM12
Pipelines Maintenance: NPMC3; NPMC10
Emergency Response: NERC4; NERC5; NERC8; NERC9; NERC10; NERC11</td><td>D6 Achieved Select Y/N below</td></tr>
<tr><td colspan="3">Independent assessor to provide comments and include all additional questions asked, and responses received for clarification.</td><td rowspan="3">y/n</td></tr>
<tr><td colspan="3"></td></tr>
<tr><td>Time Reference:</td><td></td><td>Logbook reference:</td><td></td></tr>
</table>

<table>
<tr><th colspan="5">P7 - Ensures that the engineering product or process output meets company specific requirements</th></tr>
<tr><td>Independent assessor Questions</td><td colspan="3">S3; S4; S5
Electrical and Instrumentation: NMCiE2; NMCiE9; NMCiE15
Pressure Management: NMCPM5; NMCPM12
Pipelines Maintenance: NPMC1; NPMC2
Emergency Response: NERC4; NERC5; NERC7; NERC8; NERC9; NERC10; NERC11</td><td>P7 Achieved Select Y/N below</td></tr>
<tr><td rowspan="3">Questions
Develop some open ended questions</td><td colspan="3">Independent assessor to provide comments and include all additional questions asked, and responses received for clarification.</td><td rowspan="3">y/n</td></tr>
<tr><td colspan="3"></td></tr>
<tr><td>Time Reference:</td><td></td><td>Logbook reference:</td><td></td></tr>
</table>

<table>
<tr><td colspan="4">D7 - Shows understanding of the relevant engineering products, their application and process outputs relative to their company specific requirements. Consistently applies reasoning to support decisions made</td></tr>
<tr><td rowspan="4">Questions
Develop some open ended questions</td><td colspan="2">S3; S4; S5
Electrical and Instrumentation: NMCiE2; NMCiE9; NMCiE15
Pressure Management: NMCPM5; NMCPM12
Pipelines Maintenance: NPMC1; NPMC2
Emergency Response: NERC4; NERC5; NERC7; NERC8; NERC9; NERC10; NERC11</td><td>D7 Achieved Select Y/N below</td></tr>
<tr><td colspan="2">Independent assessor to provide comments and include all additional questions asked, and responses received for clarification.</td><td rowspan="3">y/n</td></tr>
<tr><td colspan="2"></td></tr>
<tr><td>Time Reference:</td><td></td><td>Logbook reference:</td></tr>
</table>

<table>
<tr><th colspan="5">P8 - All required documentation was fully and accurately completed in line with company specific requirements</th></tr>
<tr><td>Independent assessor Questions</td><td colspan="3">S13
Electrical and Instrumentation: NMCiE1; NMCiE9
Pressure Management: NMCPM2; NMCPM3
Pipelines Maintenance: NPMC1; NPMC2; NPMC10
Emergency Response: NERC1; NERC2; NERC3; NERC5; NERC7; NERC8; NERC10; NERC11</td><td>P8 Achieved Select Y/N below</td></tr>
<tr><td rowspan="3">Questions
Develop some open ended questions</td><td colspan="3">Independent assessor to provide comments and include all additional questions asked, and responses received for clarification.</td><td rowspan="3">y/n</td></tr>
<tr><td colspan="3"></td></tr>
<tr><td>Time Reference:</td><td></td><td>Logbook reference:</td><td></td></tr>
</table>

<table>
<tr><th colspan="5">D8 - Analyses, and interprets recorded data and articulates the need for accuracy and the importance of qualitative data capture and recording</th></tr>
<tr><td rowspan="4">Questions
Develop some open ended questions</td><td colspan="3">S13
Electrical and Instrumentation: NMCiE1; NMCiE9
Pressure Management: NMCPM2; NMCPM3
Pipelines Maintenance: NPMC1; NPMC2; NPMC10
Emergency Response: NERC1; NERC2; NERC3; NERC5; NERC7; NERC8; NERC10; NERC11</td><td>D8 Achieved Select Y/N below</td></tr>
<tr><td colspan="3">Independent assessor to provide comments and include all additional questions asked, and responses received for clarification.</td><td rowspan="3">y/n</td></tr>
<tr><td colspan="3"></td></tr>
<tr><td>Time Reference:</td><td></td><td>Logbook reference:</td><td></td></tr>
</table>

GNC Pressure Management Technical Interview Session 2 – Practice On-programme Record

Apprentice Full Name	
Employer and Location Postcode or Assessment centre location	
Full Name of Independent Assessor	
Full Name of Employer Technical Expert	
Date of Assessment	
Start Time	
End Time	

Provisional Grade Awarded (Check the box)	Distinction ☐	Pass ☐	Fail ☐

Please Note:
To achieve a Pass the Apprentice must achieve all the pass descriptors.
To achieve a Distinction the Apprentice must achieve all the pass criteria and 4 out of the 7 distinction criteria must be met to achieve a provisional distinction grade.

<table>
<tr><td colspan="5">P1 - Identifies current Health, Safety and Environmental legislation and describes how they comply with the regulations applicable to their role.</td></tr>
<tr><td>Independent assessor Questions</td><td colspan="3">S1; S2; S3; S14
Electrical and Instrumentation: NMCiE17
Pressure Management: NMCPM3; NMCP20
Pipelines Maintenance: NPMC5; NPMC6
Emergency Response: NERC18; NERC19</td><td rowspan="2">P1 Achieved select Y/N below</td></tr>
<tr><td rowspan="3">Questions
Develop some open ended questions</td><td colspan="3">Independent assessor to provide comments and include all additional questions asked, and responses received for clarification.</td></tr>
<tr><td colspan="3"></td><td rowspan="2">y/n</td></tr>
<tr><td>Time Reference:</td><td></td><td>Logbook reference:</td><td></td></tr>
</table>

D1 - Describes in detail how such legislation impacts their day-to-day activities					
Questions *Develop some open ended questions*	S1; S2; S3; S14 Electrical and Instrumentation: NMCiE17 Pressure Management: NMCPM3; NMCP20 Pipelines Maintenance: NPMC5; NPMC6 Emergency Response: NERC18; NERC19				D1 Achieved select Y/N below
	Independent assessor to provide comments and include all additional questions asked, and responses received for clarification.				
					y/n
	Time Reference:		Logbook reference:		

<table>
<tr><td colspan="5">P2 - Identifies the hazards they may encounter and explains the control measures needed to mitigate the risk caused by the hazard identified, these must be specific to activities on the gas network</td></tr>
<tr><td>Independent assessor Questions</td><td colspan="3">K1; B7
Electrical and Instrumentation: NMCiE18; NMCiE19; NMCiE20; NMCiE22
Pressure Management: NMCPM3
Pipelines Maintenance: NPMC3; NPMC5; NPMC6
Emergency Response: NERC18</td><td>P2 Achieved select Y/N below</td></tr>
<tr><td rowspan="3">Questions
Develop some open ended questions</td><td colspan="3">Independent assessor to provide comments and include all additional questions asked, and responses received for clarification.</td><td rowspan="3">y/n</td></tr>
<tr><td colspan="3"></td></tr>
<tr><td>Time Reference:</td><td></td><td>Logbook reference:</td><td></td></tr>
</table>

D2 - Evaluates risk assessment processes including likelihood and consequence and is able to describe suitable control measures and how to implement such measures to reduce the residual risk value				
Questions *Develop some open ended questions*	K1; B7 Electrical and Instrumentation: NMCiE18; NMCiE19; NMCiE20; NMCiE22 Pressure Management: NMCPM3 Pipelines Maintenance: NPMC3; NPMC5; NPMC6 Emergency Response: NERC18			D2 Achieved select Y/N below
	Independent assessor to provide comments and include all additional questions asked, and responses received for clarification.			
				y/n
	Time Reference:		Logbook reference:	

<table>
<tr><th colspan="5">P3 - Explains how they approach their work activities including effective customer communication and suitable task preparation required to carry out work relative to their job role on the gas network</th></tr>
<tr><td>Independent assessor Questions</td><td colspan="3">K1; S14; B2; B4; B7; B9; B11; B12
Electrical and Instrumentation: NMCiE13
Pressure Management: NMCPM14
Pipelines Maintenance: NPMC6; NPMC15
Emergency Response: NERC18; NERC19; NERC21; NERC24</td><td>P3 Achieved select Y/N below</td></tr>
<tr><td rowspan="3">Questions
Develop some open ended questions</td><td colspan="3">Independent assessor to provide comments and include all additional questions asked, and responses received for clarification.</td><td rowspan="3">y/n</td></tr>
<tr><td colspan="3"></td></tr>
<tr><td>Time Reference:</td><td></td><td>Logbook reference:</td><td></td></tr>
</table>

D3 - Describes instances of using negotiation and influencing skills to coordinate contrasting views and drive actions					
Questions *Develop some open ended questions*	K1; S14; B2; B4; B7; B9; B11; B12 Electrical and Instrumentation: NMCiE13 Pressure Management: NMCPM14 Pipelines Maintenance: NPMC6; NPMC15 Emergency Response: NERC18; NERC19; NERC21; NERC24				D3 Achieved select Y/N below
	Independent assessor to provide comments and include all additional questions asked, and responses received for clarification.				y/n
	Time Reference:		Logbook reference:		

<table>
<tr><td colspan="5">P4 - Identifies the company specific policies and procedures relevant to their role and demonstrates how these are applied. Complies with company CPD requirements</td></tr>
<tr><td>Independent assessor Questions</td><td colspan="3">K1; K4; K6; S15; B10
Electrical and Instrumentation: NMCiE14
Pressure Management: NMCPM3; NMCP10; NMCPM11; NMCPM12
Pipelines Maintenance: NPMC3; NPMC5
Emergency Response: NERC18; NERC19; NERC21</td><td>P4 Achieved select Y/N below</td></tr>
<tr><td rowspan="3">Questions
Develop some open ended questions</td><td colspan="3">Independent assessor to provide comments and include all additional questions asked, and responses received for clarification.</td><td rowspan="3">y/n</td></tr>
<tr><td colspan="3"></td></tr>
<tr><td>Time Reference:</td><td></td><td>Logbook reference:</td><td></td></tr>
</table>

<table>
<tr><th colspan="5">D4 - Relates company specific policies and procedures to legislative requirements. Is working towards professional recognition.</th></tr>
<tr><td rowspan="4">Questions
Develop some open ended questions</td><td colspan="3">K1; K4; K6; S15; B10
Electrical and Instrumentation: NMCiE14
Pressure Management: NMCPM3; NMCP10; NMCPM11; NMCPM12
Pipelines Maintenance: NPMC3; NPMC5
Emergency Response: NERC18; NERC19; NERC21</td><td>D4 Achieved select Y/N below</td></tr>
<tr><td colspan="3">Independent assessor to provide comments and include all additional questions asked, and responses received for clarification.</td><td rowspan="3">y/n</td></tr>
<tr><td colspan="3"></td></tr>
<tr><td>Time Reference:</td><td></td><td>Logbook reference:</td><td></td></tr>
</table>

<table>
<tr><td colspan="5">P5
1. Accurately describes the testing procedure for an item of plant, an installation or piece of equipment they encounter as part of their day-to-day duties on the gas network.
2. Describes how to accurately interpret the results of the tests undertaken.</td></tr>
<tr><td>Independent assessor Questions</td><td colspan="3">K1; K4; S15; B4; B7; B12
Electrical and Instrumentation: NMCiE3; NMCiE6; NMCiE7; NMCiE8; NMCiE10; NMCiE11
Pressure Management: NMCPM6; NMCP8; NMCPM10; NMCPM13
Pipelines Maintenance: NPMC3; NPMC5
Emergency Response: NERC8; NERC9; NERC10; NERC21</td><td>P5 Achieved select Y/N below</td></tr>
<tr><td rowspan="3">Questions
Develop some open ended questions</td><td colspan="3">Independent assessor to provide comments and include all additional questions asked, and responses received for clarification.</td><td rowspan="3">y/n</td></tr>
<tr><td colspan="3"></td></tr>
<tr><td>Time Reference:</td><td></td><td>Logbook reference:</td><td></td></tr>
</table>

<table>
<tr><td colspan="4">D5
Details 3 of the following principles that drive testing requirements.
• Explain why testing parameters are at the levels they are
• Evaluate the results of such tests
• Explain the potential consequences of failed tests Interpret results and offer the reasons for failed tests
• Interpret results and offer the reasons for failed tests
• Provide potential solutions for failed tests</td></tr>
<tr><td rowspan="4">Questions
Develop some open ended questions</td><td colspan="2">K1; K4; S15; B4; B7; B12
Electrical and Instrumentation: NMCiE3; NMCiE6; NMCiE7; NMCiE8; NMCiE10; NMCiE11
Pressure Management: NMCPM6; NMCP8; NMCPM10; NMCPM13
Pipelines Maintenance: NPMC3; NPMC5
Emergency Response: NERC8; NERC9; NERC10; NERC21</td><td>D5 Achieved select Y/N below</td></tr>
<tr><td colspan="2">Independent assessor to provide comments and include all additional questions asked, and responses received for clarification.</td><td rowspan="3">y/n</td></tr>
<tr><td colspan="2"></td></tr>
<tr><td>Time Reference:</td><td></td><td>Logbook reference:</td><td></td></tr>
</table>

<table>
<tr><th colspan="5">P6 - Uses and applies mathematical calculations to determine the correct operating or safety parameters of equipment used or encountered as part of their job role</th></tr>
<tr><td>Independent assessor Questions</td><td colspan="3">K1
Electrical and Instrumentation: NMCiE6; NMCiE10; NMCiE14
Pressure Management: NMCPM6; NMCPM8; NMCPM13; NMCPM16
Pipelines Maintenance: NPMC3; NPMC5; NPMC8
Emergency Response: NERC9; NERC18; NERC21</td><td>P6 Achieved select Y/N below</td></tr>
<tr><td rowspan="3">Questions
Develop some open ended questions</td><td colspan="3">Independent assessor to provide comments and include all additional questions asked, and responses received for clarification.</td><td rowspan="3">y/n</td></tr>
<tr><td colspan="3"></td></tr>
<tr><td>Time Reference:</td><td></td><td>Logbook reference:</td><td></td></tr>
</table>

D6 - Identifies solutions and recommends actions to be taken where the result of such calculation deliver unsatisfactory conclusions					
Questions *Develop some open ended questions*	K1 Electrical and Instrumentation: NMCiE6; NMCiE10; NMCiE14 Pressure Management: NMCPM6; NMCPM8; NMCPM13; NMCPM16 Pipelines Maintenance: NPMC3; NPMC5; NPMC8 Emergency Response: NERC9; NERC18; NERC21				D6 Achieved select Y/N below
	Independent assessor to provide comments and include all additional questions asked, and responses received for clarification.				y/n
	Time Reference:		Logbook reference:		

<table>
<tr><td colspan="5">P7 - Identify and describes instances where they have worked effectively on both an individual basis and as part of a team.</td></tr>
<tr><td>Independent assessor Questions</td><td colspan="3">S14; B4; B7; B9; B11; B12
Electrical and Instrumentation: NMCiE14
Pressure Management: NMCPM6; NMCPM9
Pipelines Maintenance: NPMC6
Emergency Response: NERC14; NERC18</td><td>P7 Achieved select Y/N below</td></tr>
<tr><td rowspan="3">Questions
Develop some open ended questions</td><td colspan="3">Independent assessor to provide comments and include all additional questions asked, and responses received for clarification.</td><td rowspan="3">y/n</td></tr>
<tr><td colspan="3"></td></tr>
<tr><td>Time Reference:</td><td></td><td>Logbook reference:</td><td></td></tr>
</table>

D7 - Critically reflects upon situations where they have taken the initiative to lead a team to drive a project from conception to conclusion					
Questions *Develop some open ended questions*	S14; B4; B7; B9; B11; B12 Electrical and Instrumentation: NMCiE14 Pressure Management: NMCPM6; NMCPM9 Pipelines Maintenance: NPMC6 Emergency Response: NERC14; NERC18				D7 Achieved select Y/N below
	Independent assessor to provide comments and include all additional questions asked, and responses received for clarification.				
					y/n
	Time Reference:		Logbook reference:		

Appendix G: Logbook Mapping Document

Logbook Mapping Document

This document must be placed at the front of the logbook and submitted to Energy & Environment Awards with the logbook of evidence.

Introduction

Use this document to map the logbook of evidence to the KSBs assessed during the professional discussion.

Apprentice's next steps

1. Complete all the details on the first page and include employer details of where relevant competencies from their experience at work was gained.
2. The apprentice can use a number of different types of evidence to demonstrate their competence as described in Section 5 of the Specification – 'What to include in the portfolio?'. For further guidance, the apprentice must seek advice from their tutor/supervisor/mentor and training provider.
3. Map evidence to the criteria in the following pages using a referencing system indicating where the evidence for the criteria is located in the logbook e.g., work based evidence Job 1 (J1) page 5 paragraph 2. This will allow the independent assessor to locate the section or specific piece of evidence being discussed and referred to during the professional discussion.
4. Place the portfolio mapping document at the front of the logbook of evidence.

The apprentice's training provider must make arrangements for Energy & Environment Awards to have access to the apprentice's portfolio including the logbook mapping document at least 2 weeks before the professional discussion. For apprentices using e-logbooks such as ONEFILE, SMARTASSESSOR, the reference used must simply be the file or folder name you used when uploading the evidence to such systems.

Logbook Mapping Document

1.1 Mapping Sign off on Logbook Completion:

Apprentice Name (Print)	Apprentice Signature	Training Provider (Company)	Training Provider Signatory	Date of Sign Off

Core Knowledge for all pathways:

Ref. (KSB)	Apprenticeship Standard Criteria	Logbook Evidence Reference (Apprentice Input)		
		1	2	3
K1	Company testing, and commissioning procedures needed to establish the condition of gas assets, equipment, network infrastructure and the actions needed as a result of the tests. This includes both practical applications and the use of diagnostic techniques and IT systems			
K4	Company maintenance practices, processes and procedures associated with gas network systems, controls and equipment			
K6	Company policies, procedures and engineering instructions as specified by the employer			

Core Skills for all pathways:

Ref. (KSB)	Apprenticeship Standard Criteria	Logbook Evidence Reference (Apprentice Input)		
		1	2	3
S1	Undertake and document risk assessments in accordance with company procedures			
S2	Comply with workplace health, safety and environmental practices and regulations, maintaining a safe and secure working environment			
S3	Follow engineering instructions and company procedures to complete tasks safely and on-time			
S4	Undertake inspection and examination of network assets in order to maintain the safe and compliant operation of the network to ensure the integrity, safety and security of supply			
S5	Maintain and/or install gas engineering assets, components and associated equipment			
S6	Install, test, purge and commission gas network assets			
S7	Operate powered tools, such as drills, angle grinders, brush cutters and shot blasting equipment as required for network maintenance operations			
S8	Use approved gas detection equipment to ensure safe environment			
S9	Use Personal Protective Equipment (PPE) and safety equipment in accordance with manufacturer's instructions and employer policy			
S10	Obtain and analyse asset condition and performance information to facilitate decision making			
S11	Identify, organise and use resources effectively to complete tasks, with consideration for cost, quality, safety, security and environmental impact			
S13	Accurately record job information, complete job reports and process			
S14	Liaise with gas consumers, statutory agencies and members of the public in order to ensure their safety			
S15	Accurately update company systems with details of work undertaken			

Core behaviours for all pathways:

Ref. (KSB)	Apprenticeship Standard Criteria	Logbook Evidence Reference (Apprentice Input)		
		1	2	3
B1	Display a self-disciplined, self-motivated approach			
B2	Deliver a polite, courteous professional service to all customers, stakeholders and members of the public as appropriate			
B3	Demonstrate and apply a safety first approach			
B4	Accept accountability when undertaking individual and team tasks			
B5	Follows instruction from appropriate supervision, and makes decisions when required			
B6	Quality-focussed and professional in work and in personal standards			
B7	Recognise personal limitations and seek advice from managers, experts and specialists when required			
B8	Accepts responsibility for work undertaken			
B9	Receptive to the needs and concerns of others, especially where related to diversity and equality			
B10	Committed to carrying out and recording Continued Professional Development necessary to maintain and enhance competence			
B11	Exercises responsibilities in an ethical manner			
B12	Interacts with people and approaches work activities in a way that contributes to continuous self-improvement			

Pathway: Specific Job Role Skills: Electrical and Instrumentation

Ref. (KSB)	Apprenticeship Standard Criteria	Logbook Evidence Reference (Apprentice Input)		
		1	2	3
NMCEi1	Apply electrical theories and principles and use equipment to carry out diagnostic fault finding procedures			
NMCEi2	Inspect, maintain, repair, overhaul test and calibrate instrumentation and control equipment and circuits in accordance with company procedures			
NMCEi3	Maintain site lighting and fixed and portable equipment which may include generators, batteries and associated equipment			
NMCEi4	Carry out cable testing across a range of voltages to ensure safety and suitability for use			
NMCEi5	Install, maintain and dismantle instruments, controllers, probes, attachments, cabling, meters and display units			
NMCEi6	Configure telemetry outstation and internal systems			
NMCEi7	Identify and resolve data quality and calibration issues			
NMCEi8	Test, calibrate and validate fixed and portable analogue and digital instrumentation			
NMCEi9	Repair, maintain, configure and calibrate field instrumentation, communication devices and associated equipment used in system and process control			
NMCEi10	Use standards and specifications to improve the information gathered by telemetry data			
NMCEi11	Inspect and maintain security equipment, telecommunication devices and alarm systems			
NMCEi12	Carry out isolation procedures to ensure process or system stability and the safety of personnel when carrying out operations			
NMCEi13	Provide support to day-to-day users of instrumentation and control systems			
NMCEi14	Ensure consistent and valid data is available for business and regulation purposes			
NMCEi15	Apply electrical knowledge and skills to install, maintain and dismantle a wide range of plant, machinery and components			

Ref. (KSB)	Apprenticeship Standard Criteria	Logbook Evidence Reference (Apprentice Input)		
		1	2	3
NMCEi17	The permitry requirements when maintaining or configuring telemetry systems or undertaking works that may initiate system alarms			
NMCEi18	Recognise the processes to be followed in order to identify and resolve data quality and calibration issues			
NMCEi19	Understand how to test and calibrate instrumentation and control equipment in accordance with company-specific procedures			
NMCEi20	The theories used to maintain, test and calibrate electrical equipment in line with company specific procedures			
NMCEi22	Identify relevant, company specific procedures, and know how to access such documentation			

Pathway: Specific Job Role Knowledge: Pressure Management

Ref. (KSB)	Apprenticeship Standard Criteria	Logbook Evidence Reference (Apprentice Input)		
		1	2	3
NMCPM20	Understand the permitry requirements when maintaining or configuring pressure control equipment			
NMCPM26	The safety processes to be followed when planning to access pressure control equipment			

Pathway: Specific Job Role Skills: Pressure Management

Ref. (KSB)	Apprenticeship Standard Criteria	Logbook Evidence Reference (Apprentice Input)		
		1	2	3
NMCPM1	Apply mechanical theories and principles for example thermo dynamics and laminar flow theories, in order to carry out diagnostic fault finding procedures			
NMCPM2	Carry out remote pressure monitoring & control on the gas network			
NMCPM3	Inspect and monitor mechanical systems and equipment in order to ensure safety and suitability for service			
NMCPM5	Maintain, dismantle and repair mechanical equipment and components			
NMCPM6	Test mechanical equipment and systems to ensure integrity, safety and security of supply			
NMCPM7	Assist in installing mechanical systems and equipment			
NMCPM8	Install, maintain and dismantle a wide range of complex plant, machinery and components including pressure regulators, safety devices, system protection devices and monitoring equipment			
NMCPM9	Consult design specifications to analyse and calculate mechanical system parameters and rectification procedures			
NMCPM10	Interpret plans and drawings to install, position or re-locate mechanical equipment and components			
NMCPM11	Test, service and repair mechanical equipment as part of planned preventative maintenance and/or reactive maintenance programmes			
NMCPM12	Install mechanical components including regulators, filters, valves, compressor equipment			
NMCPM13	Maintain mechanical components including regulators, filters, valves, compressor equipment			
NMCPM14	Apply pressure reduction techniques to assist in dealing with gas emergencies			
NMCPM16	Locate and avoid underground plant and equipment prior to and whilst undertaking activities			

Pathway: Specific Job Role Skills: Pipelines Maintenance

Ref. (KSB)	Apprenticeship Standard Criteria	Logbook Evidence Reference (Apprentice Input)		
		1	2	3
NPMC1	Apply non-destructive testing theories and principles in order to carry out diagnostic fault finding procedures			
NPMC2	Apply the theories and principles of integrity testing, purging commissioning and de-commission of gas pipelines and associated equipment and components			
NPMC3	Inspect, monitor, maintain, dismantle, install and repair pipeline systems and equipment for example, flow regulators, safety devices, system protection devices, measurement devices and monitoring equipment			
NPMC4	Remove, repair and replace components of gas transportation pipelines and associated equipment			
NPMC5	Undertake corrosion prevention activities i.e., cathodic protection systems and monitoring, coating and wrapping			
NPMC6	Take action to prevent third parties causing damage to gas transportation pipeline assets and equipment i.e., tracing, marking, monitoring third party activities and responding to encroachments			
NPMC8	Consult design specifications to analyse and calculate pipeline system parameters and rectification procedures			
NPMC9	Interpret plans and drawings to install, position or re-locate pipeline equipment and components			
NPMC10	Test, service and repair pipeline equipment as part of planned preventative maintenance and/or reactive maintenance programmes			
NPMC11	Operate specialised tools and equipment for pipeline maintenance operations for example, in line inspection tools, damage assessment, intelligent pigging, valve repairs, flow stopping and under pressure drilling			
NPMC15	Organise additional resources to facilitate repairs as required			

Pathway: Specific Job Role Skills: Emergency Response

Ref. (KSB)	Apprenticeship Standard Criteria	Logbook Evidence Reference (Apprentice Input)		
		1	2	3
NERC1	Respond to public reported upstream gas emergencies, including damage to or failure of gas mains and services that supply a consumer's premise			
NERC2	Respond to public reported downstream gas emergencies, including reported gas escapes inside customers properties and reports of carbon monoxide			
NERC3	Carry out site investigations in relation to gas emergencies, in line with company procedures			
NERC4	Use gas detection equipment to identify gas concentrations			
NERC5	Interpret gas readings to determine the safety of the site			
NERC6	Apply evacuation procedures where required			
NERC7	Apply the industry unsafe situations procedures			
NERC8	Install and exchange gas meters and pressure regulators			
NERC9	Install domestic pipework			
NERC10	Tightness test, purge, commission and decommission domestic gas pipework			
NERC11	Tightness test, purge, commission and decommission non-domestic gas pipework			
NERC14	Organise additional resources to facilitate repairs as required			
NERC18	Understand how to identify gas appliances and installations that are not compliant with industry standards and may be deemed as unsafe			
NERC19	Understand how to comply with the requirements of the Gas Industry Unsafe Situations Procedure, including RIDDOR reporting requirements			
NERC21	Describe the requirements for the application of gas tightness testing procedures			
NERC24	Understand when to liaise with emergency services and other statutory authorities as necessary			