

Level 2 Diplomas in Smart Metering (7428-21-22-23)



Candidate logbook

www.cityandguilds.com
May 2013
Version 2.0

Qualification title	Number	QAN
Level 2 Diploma in Smart Metering – Power	7428-21	600/1270/5
Level 2 Diploma in Smart Metering – Gas	7428-22	600/1271/7
Level 2 Diploma in Smart Metering – Dual Fuel	7428-23	600/1282/1

About City & Guilds

As the UK's leading vocational education organisation, City & Guilds is leading the talent revolution by inspiring people to unlock their potential and develop their skills. We offer over 500 qualifications across 28 industries through 8500 centres worldwide and award around two million certificates every year. City & Guilds is recognised and respected by employers across the world as a sign of quality and exceptional training.

City & Guilds Group

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1 About your logbook

1.1 Contact details

Candidate name	
Candidate enrolment no.	
Centre name	
Centre number	

Keep a record of relevant contact details in the space provided below. You may find it helpful to make a note of phone numbers and e-mail addresses here.

Your Assessor(s)	
Your Internal Verifier	
Quality Assurance Contact	

1 About your logbook

1.2 Introduction to the logbook

This logbook will help you complete your qualification. It contains:

- the units you need to achieve to complete your qualification
- information about your responsibilities as a candidate
- forms you can use to record and organise your evidence.

It will also tell you:

- about your qualification
- what you need to do to complete your qualification
- who will help you.

About City & Guilds

City & Guilds is your awarding body for this qualification. City & Guilds is the UK's leading awarding body for vocational qualifications.

Information about City & Guilds and our qualifications is available on our website www.cityandguilds.com.

2 About the qualification

The Gas Network Construction Operation qualifications are nationally recognised qualifications gained in the workplace. They are based on National Occupational Standards, which are standards written by employers and experts in your industry.

When you achieve your qualification it will prove that you can work to the standards expected by employers in your industry. Your qualification will show you are competent to do a job and have the skills, knowledge and understanding needed to do it well.

This qualification is mainly assessed in the workplace. You should be carrying out the type of work involved in this qualification, or expect to carry out in the future.

3 Qualification structures

To achieve the **Level 2 Diploma in Smart Metering – Power (7428-21)**, learners must achieve **37** credits from the mandatory units in the table below. Additional elective units may be taken but they will not be counted towards the minimum credits required.

Unit accreditation number	City & Guilds unit number	Unit title	Mandatory/ optional for full qualification	Credit value
L/502/9858	201	Working practices in the energy and utilities sector	Mandatory	2
A/502/9855	202	Working safely in the energy and utilities sector	Mandatory	4
J/503/0233	203	Using and communicating technical information in the energy and utilities sector	Mandatory	3
F/502/9856	204	Delivering customer service when working within the energy and utilities sector	Mandatory	2
A/503/0231	205	Install and commission communication systems for smart meters	Mandatory	4
M/600/3988	206	Install single phase meter and associated equipment	Mandatory	11
A/600/3993	207	Change single phase meter and associated equipment	Mandatory	11
J/600/4001	211	Install multi phase meter – whole current (new connection)	Elective	15
F/600/4000	212	Change multi phase meter – whole current	Elective	15
M/600/4008	213	Install single phase meter and associated equipment on multi phase cut-out (new connection)	Elective	10
T/600/4009	214	Change single phase meter and associated equipment on multi phase cut-outs	Elective	10

To achieve the **Level 2 Diploma in Smart Metering – Gas (7428-22)**, learners must achieve **41** credits from the mandatory units in the table below. An additional elective unit may be taken but will not be counted towards to the minimum credits required.

Unit accreditation number	City & Guilds unit number	Unit title	Mandatory/ optional for full qualification	Credit value
L/502/9858	201	Working practices in the energy and utilities sector	Mandatory	2
A/502/9855	202	Working safely in the energy and utilities sector	Mandatory	4
J/503/0233	203	Using and communicating technical information in the energy and utilities sector	Mandatory	3
F/502/9856	204	Delivering customer service when working within the energy and utilities sector	Mandatory	2
A/503/0231	205	Install and commission communication systems for smart meters	Mandatory	4
K/503/0256	208	Applied practices and principles for installing low pressure natural gas smart meters up to U6 only	Mandatory	20
F/503/0232	209	Prepare, install and commission low pressure natural gas smart meter and regulator up to 6.0m ³ /hr	Mandatory	3
J/502/9857	210	Low pressure gas smart meter tightness testing and direct purging	Mandatory	3
F/505/0884	215	Prepare, install and commission medium pressure natural gas smart meter and regulator up to 6.0 m ³ /hr	Elective	9

To achieve the **Level 2 Diploma in Smart Metering – Dual Fuel (7428-23)**, learners must achieve **63** credits from the mandatory units in the table below. Additional elective units may be taken but they will not be counted towards the minimum credits required.

Unit accreditation number	City & Guilds unit number	Unit title	Mandatory/ optional for full qualification	Credit value
L/502/9858	201	Working practices in the energy and utilities sector	Mandatory	2
A/502/9855	202	Working safely in the energy and utilities sector	Mandatory	4
J/503/0233	203	Using and communicating technical information in the energy and utilities sector	Mandatory	3
F/502/9856	204	Delivering customer service when working within the energy and utilities sector	Mandatory	2
A/503/0231	205	Install and commission communication systems for smart meters	Mandatory	4
M/600/3988	206	Install single phase meter and associated equipment	Mandatory	11
A/600/3993	207	Change single phase meter and associated equipment	Mandatory	11
K/503/0256	208	Applied practices and principles for installing low pressure natural gas smart meters up to U6 only	Mandatory	20
F/503/0232	209	Prepare, install and commission low pressure natural gas smart meter and regulator up to 6.0m ³ /hr	Mandatory	3
J/502/9857	210	Low pressure gas smart meter tightness testing and direct purging	Mandatory	3
J/600/4001	211	Install multi phase meter – whole current (new connection)	Elective	15
F/600/4000	212	Change multi phase meter – whole current	Elective	15
M/600/4008	213	Install single phase meter and associated equipment on multi phase cut-out (new connection)	Elective	10
T/600/4009	214	Change single phase meter and associated equipment on multi phase cut-outs	Elective	10

F/505/0884	215	Prepare, install and commission medium pressure natural gas smart meter and regulator up to 6.0 m ³ /hr	Elective	9
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4 About your approved centre

Types of approved centres

Assessment for your qualification will be carried out at your centre. Your centre may be your place of work, a college, training provider or a combination of these.

City & Guilds approves centres to offer their qualifications and regularly monitors them to make sure they meet our quality standards and follow our assessment policies.

Centre responsibilities

Your centre is responsible for the administration of your qualification. Centre staff will:

- register you with City & Guilds
- give you your City & Guilds enrolment number
- apply for your certificate(s) when you have completed your qualification or units.

Centres are also responsible for supporting you as you work towards your NVQ. Centres will:

- carry out an initial assessment with you
- tell you about any learning or training (and resources) you will need to help you complete your qualification
- provide an induction programme to explain how the assessment process works
- produce an assessment plan for you.

Assessment roles

The following people at your centre will help you achieve your qualification.

The assessor

The assessor is the person you will have the most contact with as you work towards your qualification. Your assessor will:

- help you identify any training you need
- agree an assessment plan with you
- help you plan and organise your workload and evidence
- observe you carrying out your job in the workplace over a period of time
- ask you questions about the work you do
- make decisions about your evidence
- judge when you are competent and meet the national standards
- give you feedback about your evidence and competence.

You may have more than one assessor depending on which units of the qualification you take.

The Internal Quality Assurer (IQA)

The **Internal Quality Assurer (IQA)** maintains the quality of assessment within the centre.

The Qualification Consultant

The Qualification Consultant works for City & Guilds and helps to ensure that your centre meets the required standards for quality and assessment.

The mentor

A mentor is someone in your workplace who can help and support you as you are working towards your qualification but does not carry out assessments. They may be able to provide you with witness testimony for your qualification.

Witness

Witnesses do not judge your overall competence but may provide you with statements about your performance which can be used as evidence of your work.

5 About candidates

Candidate role and responsibilities

Your responsibilities as a City & Guilds candidate are to:

- provide your centre with your personal details so you can be registered with City & Guilds
- participate in an initial assessment and induction
- agree a personal assessment plan with your assessor
- collect and organise your evidence as agreed in your assessment plan
- attend regular meetings with your assessor to discuss your progress and to amend your plan when required
- meet with other centre and City & Guilds staff to talk about your qualification and evidence
- make sure you understand and comply with health and safety law and regulations.

Your centre **may** ask you to agree and sign a learning contract with them to show how you will be assessed for your qualification.

Candidate enrolment number

Make sure you keep a note of your unique City & Guilds enrolment number on the front page of this logbook.

You will need this number again if you take any other City & Guilds qualifications. Using the same enrolment number helps City & Guilds keep a record of every unit and qualification you complete.

Moving to a new centre

If you change jobs or move to a new centre before you complete your qualification, you may be able to complete it at a new centre. Ask your centre to apply for any certificates of unit credit for you before you leave, and add them to your records.

A new centre will need your candidate enrolment number, your assessment records and evidence to help you complete your qualification.

6 The assessment process

6.1 Before you start your qualification

Initial assessment

Before you start work on your qualification you will meet with your assessor to discuss what you need to do to complete your qualification. This can include:

- checking you are taking the right qualification level
- checking you have chosen suitable units
- identifying any training or learning you will need to help you gain your qualification
- agreeing an assessment plan
- signing a learning contract.

Skill scan

As part of this meeting, you will discuss the skills and knowledge you may already have, and decide how this can be used towards your qualification. This process is sometimes called a Skill scan. There is a Skill scan form in this logbook you can use to record the skills you may already have.

6 The assessment process

6.2 Qualification assessment

The assessment process

Once you have chosen your units you will make and agree an assessment plan with your assessor. This will show:

- the units the plan covers
- when you will be assessed
- where the assessment will take place
- what you will be doing
- what evidence you will produce
- who will assess you.

The plan should also indicate the methods of assessment to be used to collect your evidence.

Evidence can include:

- direct observation in the workplace by a qualified assessor
- witness testimony of work carried out by you in the workplace written by an expert witness
- questioning – this could be verbal, written or computer based
- other evidence which can include photographs or personal accounts.

Your centre will explain the different types of evidence to you in more detail. There is an assessment plan form you can use in this logbook.

7 Using your logbook

Recording forms

This logbook contains all of the forms you and your assessor will need to plan, review and organise your evidence. Your assessor will be able to help you decide which forms you need to complete and help you fill them in.

Candidate job profile

You can use this form to record your personal details if you don't already have a résumé/ CV.

Skill scan/Initial assessment

This can be used to record the skills and knowledge you may already have. This may be part of your initial assessment.

Expert/witness status list

This is used to record the details of staff that will provide you with witness testimony.

Assessment plan

You and your assessor will use this form to feed back after each session. It will also enable you and your assessor to plan what actions need to be done before the next session.

Units

These record where the evidence you produce meets the requirements of the unit. You should give each piece of evidence a portfolio reference number (PRN).

Summary of achievement

This form is used to show which units you have chosen and how many units you have completed. When you have completed all of the units and are ready to ask for your certificate, you and your assessor will sign this.

Observation report

Your assessor will complete during observation. You will both sign this as a true record.

Witness testimony

This form will be used as a witness testimony. It can be used to form part of your portfolio and used as evidence towards your portfolio.

Diary sheet

This form can be used to feed back to your assessor what tasks you completed at the job site.

Please photocopy these forms as required.

Candidate job profile

If you already have your own CV you can use that instead of this form.

Name:

Place of work:

Assessor:.....

Outline of job role:

Previous roles and responsibilities relevant to the qualification:

Previous qualification and training relevant to the qualification:

Skill scan/Initial assessment

Qualification title:

Candidate name:

Unit	Duties	Examples	Training required
201	Working practices in the energy and utilities sector		
1	Be able to plan and prepare to complete activities in the energy and utilities sector		
2	Be able to maintain working practices whilst completing activities in the energy and utilities sector		
3	Be able to identify, respond to and resolve problems and areas for improvement in own area of responsibility		
4	Be able to create and maintain effective working relationships in the energy and utilities sector		
5	Be able to contribute to own personal learning and development needs in the energy and utilities sector		
202	Working safely in the energy and utilities sector		
1	Know hazards and risks in the energy and utilities sector		
2	Be able to work to required safety signs and legislation in the energy and utilities sector		
3	Be able to select, use and store personal protective equipment (PPE) relevant to the activity being carried out in the energy and utilities sector		
4	Be able to take action in the event of accidents and emergencies in the energy and utilities sector		
5	Be able to maintain a safe working environment in the energy and utilities sector		
6	Be able to manual handle tools, equipment and materials safely in the energy and utilities sector		

203	Using and communicating technical information in the energy and utilities sector		
1	Know relevant information sources for the energy and utilities sector		
2	Be able to obtain, interpret and use technical information in the energy and utilities sector		
3	Be able to record and communicate technical information in the energy and utilities sector		
204	Delivering customer service when working within the energy and utilities sector		
1	Be able to prepare for a work activity in a customer's premises in the energy and utilities sector		
2	Be able to establish and maintain working relations with customers in the energy and utilities sector		
205	Install and commission communication systems for smart meters		
1	Know the principles of communication technologies used in smart metering		
2	Be able to plan the location for the smart metering communication system		
3	Be able to install communication system for smart meters		
4	Be able to commission, test and complete communication installation for smart meters		
5	Be able to identify and rectify faults in smart meter communication systems		
206	Install single phase meter and associated equipment		
1	Be able to plan for work activities to install single phase meter and associated equipment in line with company procedures		
2	Be able to prepare resources to install single phase meter and associated equipment in line with company procedures		
3	Be able to install a single phase meter and associated equipment in line with company procedures		
4	Understand how to install a single phase meter and associated equipment using general knowledge		

5	Understand how to install a single phase meter and associated equipment using work-specific knowledge		
207	Change single phase meter and associated equipment		
1	Be able to plan for work activities to change single phase meter and associated equipment in line with company procedures		
2	Be able to prepare resources to change single phase meter and associated equipment in line with company procedures		
3	Be able to change a single phase meter and associated equipment in line with company procedures		
4	Understand how to change a single phase meter and associated equipment using general knowledge		
5	Understand how to change a single phase meter and associated equipment using work-specific knowledge		
208	Applied practices and principles for installing low pressure natural gas smart meters up to U6 only		
1	Understand the dangers associated with electricity when preparing to install low pressure natural gas smart meters		
2	Be able to use scientific principles in gas utilisation for natural gas smart metering		
3	Understand how to use gas pressure regulators		
4	Know about combustion and the effects of its products		
5	Understand building materials and methods used in the installation of natural gas smart meters		
6	Understand gas safety regulations, legislation and standards in natural gas smart metering		
209	Prepare, install and commission low pressure natural gas smart meter and regulator up to 6.0m³/hr		
1	Be able to plan and prepare work activities to install natural gas smart meter (up to 6.0m ³ /hr) on low pressure gas systems		

2	Be able to prepare resources to install natural gas smart meter (up to 6.0m ³ /hr) on low pressure gas systems		
3	Be able to de-commission natural gas meters and regulators (up to 6.0m ³ /hr) on low pressure gas service		
4	Be able to install natural gas smart meter (up to 6.0m ³ /hr) on low pressure gas service		
5	Be able to commission natural gas smart meter (up to 6.0m ³ /hr) on low pressure gas service		
210	Low pressure gas smart meter tightness testing and direct purging		
1	Be able to plan and prepare work activities for tightness testing and direct purging - low pressure only		
2	Be able to de-commission natural gas systems and components to industry standards		
3	Be able to tightness test and direct purge low pressure natural gas smart meters		
211	Install multi phase meter – whole current (new connection)		
1	Plan for work activities to install multi phase meter (whole current)		
2	Prepare resources to install multi phase meter (whole current)		
3	Install multi phase meter (whole current)		
4	Know and understand how to install multi phase meter (whole current) using general knowledge		
5	Know and understand how to install multi phase meter (whole current) using work-specific knowledge		
212	Change multi phase meter – whole current		
1	Plan for work activities to change multi phase meter (whole current)		
2	Prepare resources to change multi phase meter (whole current)		
3	Change multi phase meter (whole current)		
4	Know and understand how to change multi phase meter (whole current) using general knowledge		

5	Know and understand how to change multi phase meter (whole current) using work-specific knowledge		
213	Install single phase meter and associated equipment on multi phase cut-out (new connection)		
1	Plan for work activities to install single phase meter and associated equipment on multi phase cut-outs		
2	Prepare resources to install single phase meter and associated equipment on multi phase cut-outs		
3	Install single phase meter and associated equipment on multi phase cut-outs		
4	Know and understand how to install single phase meter and associated equipment on multi phase cut-outs using general knowledge		
5	Know and understand how to install single phase meter and associated equipment on multi phase cut-outs using work-specific knowledge		
214	Change single phase meter and associated equipment on multi phase cut-outs		
1	Plan for work activities to change single phase meter and associated equipment on multi phase cut-outs		
2	Prepare resources to change single phase meter and associated equipment on multi phase cut-outs		
3	Change single phase meter and associated equipment on multi phase cut-outs		
4	Know and understand how to change single phase meter and associated equipment on multi phase cut-outs using general knowledge		
5	Know and understand how to change single phase meter and associated equipment on multi phase cut-outs using work-specific knowledge		
215	Prepare, install and commission medium pressure natural gas smart meter and regulator up to 6.0m³/hr		
1	Be able to plan and prepare work activities for decommissioning, installing, exchanging and commissioning smart gas meters and regulators (up to 6.0m ³ /h) on medium pressure fed natural gas systems		

2	Be able to de-commission smart gas meters and regulators (up to 6.0m ³ /h) on medium pressure fed natural gas systems		
3	Be able to install and exchange smart gas meters and regulators (up to 6.0m ³ /h) on medium pressure fed natural gas systems		
4	Be able to commission smart gas meters and regulators (up to 6.0m ³ /h) on medium pressure fed natural gas systems		
5	Be able to liaise with other persons and resolve problems relating to decommissioning, installing, exchanging and commissioning smart gas meters and regulators (up to 6.0m ³ /h) on medium pressure fed natural gas systems		

Expert/Witness Status list

Candidate name.....

Name and Witness Signature	Status *	Professional relationship to candidate **	Outcomes witnessed
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____

*** Status**

- 1 Occupational expert meeting specific requirements for role of expert witness
- 2 Occupational expert not familiar with the standards
- 3 Non expert familiar with the standards
- 4 Non expert not familiar with the standards

**** Professional relationship to candidate**

Manager = M Supervisor = S Colleague = Coll Customer = Cus Other (please specify)

Assessment/Action Planning

Candidate name _____ Assessor name _____ Date _____

Review of previous plan

Record of session

Feedback on session

Actions to be reviewed at next session	Date

Units/Outcomes completed

--	--	--	--	--	--

Signature of candidate

Signature of assessor

Summary of Achievement

Candidate name: _____

Candidate enrolment number: _____

Unique Learner Number: _____

Centre number: _____

Assessor(s) and Internal Quality Assurer(s) must print their name and provide a sample signature in the table below. This is necessary for validating the signature provided by the Assessor/Internal Quality Assurer to confirm that the candidate has met all of the necessary requirements to complete the specified unit.

Please see unit achievement list on the next page.

Assessor(s)

Assessor(s) Name (print) 1. _____ 2. _____ 3. _____

Signature: _____

Countersigning Assessor(s) Name (print) 1. _____ 2. _____ 3. _____

Signature: _____

Internal Quality Assurer(s)

Name of Internal Quality Assurer(s) (print) 1. _____ 2. _____ 3. _____

Signature: _____

Countersigning Internal Quality Assurer(s) (print) 1. _____ 2. _____ 3. _____

Signature: _____

Summary of Achievement

City & Guilds suggests that you should enter the unit numbers, of the units you plan to achieve, in the table below. This will allow you to track your progress through the qualification at a glance.

Declaration

By signing this summary of unit achievement, I confirm that all learning outcomes for the unit have been completed and that the evidence is authentic and has been obtained under specified conditions for which certification is now requested.

Units achieved

Unit Number	Date achieved	Candidate signature	Assessor signature	Countersigning Assessor signature*	Internal Quality Assurer signature	Countersigning IQA signature*

Observation report

Level [x] Diploma in [add title] (6028)

Candidate:

Assessor:

PRN:

Applicable units

Report

Learning Outcome ref.

Report continued

Learning Outcome ref:

Questions asked with answers:

Learning Outcome ref:

Assessor feedback:

Candidate signature Date

Assessor Date

Diary sheet

Candidate name:

Team leader:

Location:

Job type:

Job reference number:

Date:

Details of work completed:

Team Leader's comments:

Candidate's signature:

Team leader's signature:

IQA signature:

Qualification Consultant signature:

Witness Testimony

Candidate name:

Team leader:

Location:

Job type:

Job reference number:

Date:

Details of work completed:

Additional comments:

Candidate's signature:

Witness signature:

IV signature:

EV signature:

Photographic Supplementary Evidence

Portfolio Reference Number:

Candidate name:

Candidate signature:

Unit number:

Learning Outcome number:

Assessment Criteria number:

Brief description of task being carried out in the photograph:

(Attach Photo in this Box)

Assessor / Workplace Recorder name:		
Assessor / Workplace Recorder signature:		Date:
IQA name:	IQA signature:	Date:

Unit 201

Working practices in the energy and utilities sector

This unit is designed to provide either new entrants, or those operatives already working within the energy and utilities sector, the opportunity to plan and prepare to complete activities and maintain working practices throughout. Learners will have the opportunity to respond to and resolve problems and contribute to their own personal learning and development whilst maintaining effective working relationships.

Where job was done	Time taken (hours)	Date

Performance evidence required	Portfolio Reference Number (PRN)							
1. Be able to plan and prepare to complete activities in the energy and utilities sector								
1.1	select appropriate tools, equipment, materials and personal protective equipment (PPE) for the allocated activity							
1.2	prepare the working area							
1.3	obtain authorisation to carry out the work from the responsible person.							
Type of evidence è								

O = Observation Q = Oral Question (OQ) or Written Question & Answer (WQ) S = Simulation/Realistic Working Environment (RWE) WT = Witness testimony

Performance evidence required	Portfolio Reference Number (PRN)							
2. Be able to maintain working practices whilst completing activities in the energy and utilities sector								
2.1	adhere to all working practices and normative standards whilst completing activities in the energy and utilities sector.							
Type of evidence è								

O = Observation Q = Oral Question (OQ) or Written Question & Answer (WQ) S = Simulation/RWE WT = Witness testimony

Performance evidence required	Portfolio Reference Number (PRN)							
3. Be able to identify, respond to and resolve problems and areas for improvement in own area of responsibility								
3.1	identify problems and areas for improvement in own area of responsibility relating to two of the following within the energy and utilities sector:							
	a. materials							
	b. tools							
	c. equipment							
	d. information sources							
	e. people							
	f. safety procedures							
	g. workmanship							
	h. time							
	i. weather							

3.2	respond appropriately to problems and areas for improvement within the energy and utilities sector						
3.3	resolve problems and areas for improvement within the energy and utilities sector						
3.4	resolve issues and problems to complete the activity						
Type of evidence è							

**O = Observation Q = Oral Question (OQ) or Written Question & Answer (WQ) S = Simulation/RWE
WT = Witness testimony**

Performance evidence required	Portfolio Reference Number (PRN)						
4. Be able to create and maintain effective working relationships in the energy and utilities sector							
4.1	dress appropriately for the working activity						
4.2	communicate effectively with internal and external customers and members of the public						
4.3	return information sources to designated personnel on completion of activities						
4.4	return resources to designated locations on completion of activities.						
Type of evidence è							

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WT = Witness testimony**

Performance evidence required	Portfolio Reference Number (PRN)						
5. Be able to contribute to own personal learning and development needs in the energy and utilities sector							
5.1	identify personal learning and development needs in relation to work activity and discuss with designated personnel						
5.2	agree an appropriate action plan to address personal learning and development needs with designated personnel						
5.3	review and revise personal development records.						
Type of evidence è							

**O = Observation Q = Oral Question (OQ) or Written Question & Answer (WQ) S = Simulation/RWE
WT = Witness testimony**

Confirm completion of this Unit on the Summary of Achievement Form.

Unit 202

Working safely in the energy and utilities sector

This unit is designed to provide either new entrants or those operatives already working within the energy and utilities sector the opportunity to know hazards and risks, work to approved safety signs and select, use and store personal protective equipment (PPE). They will be able to maintain a safe working environment, handle tools, equipment and materials safely and take action in the event of an emergency.

Where job was done	Time taken (hours)	Date

1. Know hazards and risks in the energy and utilities sector	PRN
1.1	identify hazards and risks in the energy and utilities sector
1.2	describe appropriate action to mitigate identified hazards and risks.

Performance evidence required	Portfolio Reference Number (PRN)						
1. Be able to work to required safety signs and legislation in the energy and utilities sector							
2.1	work safely in accordance with normative industry standards and legislation. All of the following must be covered:						
	a. environment						
	b. use of tools and equipment						
	c. materials and substances						
	d. sector working practices						
2.2	identify and work safely in accordance with statutory and advisory safety signs and labels.						
Type of evidence è							

O = Observation Q = Oral Question (OO) or Written Question & Answer (WQ) S = Simulation/RWE
 WT = Witness testimony

Performance evidence required	Portfolio Reference Number (PRN)						
2. Be able to select, use and store personal protective equipment (PPE) relevant to the activity being carried out in the energy and utilities sector							
3.1	select appropriate PPE for the activity being carried out in the energy and utility sector						
3.2	carry out pre-use checks on PPE according to company requirements						
3.3	use PPE in accordance with legislative requirements						
3.4	store PPE appropriately.						
Type of evidence è							

O = Observation Q = Oral Question (OO) or Written Question & Answer (WQ) S = Simulation/RWE
 WT = Witness testimony

Performance evidence required	Portfolio Reference Number (PRN)						
3. Be able to take action in the event of accidents and emergencies in the energy and utilities sector							
4.1	respond to accidents and emergency situations:						
	a. injury to self						
	b. injury to others						
4.2	report accidents, injuries and hazardous or dangerous occurrences to the correct person in line with legislative requirements.						
Type of evidence è							

O = Observation Q = Oral Question (OQ) or Written Question & Answer (WQ) S = Simulation/RWE
WT = Witness testimony

Performance evidence required	Portfolio Reference Number (PRN)						
4. Be able to maintain a safe working environment in the energy and utilities sector							
5.1	establish and maintain entry and exit routes to working locations						
5.2	store tools, equipment and materials safely						
5.3	use tools, equipment and materials safely and for the purpose intended. All of the following must be covered:						
	a. tools						
	b. equipment						
	c. materials						
5.4	dispose of hazardous substances and waste materials in accordance with legislative requirements.						
Type of evidence è							

O = Observation Q = Oral Question (OQ) or Written Question & Answer (WQ) S = Simulation/RWE
WT = Witness testimony

Performance evidence required	Portfolio Reference Number (PRN)						
5. Be able to manual handle tools, equipment and materials safely in the energy and utilities sector							
6.1	demonstrate safe and correct lifting and carrying technique when carrying out lifting of:						
	a. tools						
	b. equipment						
	c. materials.						
Type of evidence è							

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WT = Witness testimony

Unit 203

Using and communicating technical information in the energy and utilities sector

This unit is designed to provide either new entrants, or those already working within the energy and utilities sector, the opportunity to know relevant information sources and be able to obtain, interpret, use, record and communicate technical information relating to the energy and utilities sector.

Where job was done	Time taken (hours)	Date

1. Know relevant information sources for the energy and utilities sector		PRN
1.1	identify relevant technical information sources appropriate for the activity to cover three from the following:	
	a. job instructions	
	b. test schedules	
	c. company information	
	d. material specifications	
	e. reference table and chart	
	f. planning documentation	
	g. operating sheets	
	h. process specification	
	i. risk assessment	
	j. method statements	
1.2	identify relevant diagrammatic and pictorial information sources appropriate for the activity to cover two of the following:	
	a. detailed component drawings	
	b. general assembly drawings	
	c. repair drawings	
	d. wiring/circuit diagrams	
	e. installation drawings	
	f. approved sketches	
	g. illustrations	
	h. visual display screens	
	i. modification drawings	
	j. fabrication drawings	
	k. operational diagrams	
	l. physical layouts	
	m. manufacturer's manuals and drawings	
	n. photographic representations.	

Performance evidence required	Portfolio Reference Number (PRN)						
2. Be able to obtain, interpret and use technical information in the energy and utilities sector							
2.1	obtain appropriate technical information from the information source to carry out activities in the energy and utilities sector						
2.2	interpret technical information to carry out the work activity, to cover four of the following:						
	a. de-commissioning procedure						
	b. installation procedure						
	c. commissioning procedure						
	d. test results procedure						
	e. handover procedure						
2.3	report any inconsistencies or inaccuracies in information sources to appropriate person(s).						
Type of evidence è							

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WT = Witness testimony**

Performance evidence required	Portfolio Reference Number (PRN)						
3. Be able to record and communicate technical information in the energy and utilities sector							
3.1	produce technical information to record completed activities						
3.2	correctly complete technical information to record completed activities						
3.3	communicate technical information to the appropriate personnel.						
Type of evidence è							

**O = Observation Q = Oral Question (OQ) or Written Question & Answer (WQ) S = Simulation/RWE
WT = Witness testimony**

Unit 204

Delivering customer service when working within the energy and utilities sector

This unit is designed to provide either new entrants or those operatives already working within the energy and utilities sector the opportunity to prepare for a work activity in the energy and utilities sector and establish and maintain working relations with customers, including responding to and resolving customer queries.

Where job was done	Time taken (hours)	Date

Performance evidence required	Portfolio Reference Number (PRN)						
1. Be able to prepare for a work activity in a customer’s premises in the energy and utilities sector							
1.1	determine the purpose for visiting the customer from information given						
1.2	identify the location of the customer’s premises						
1.3	prepare relevant information and documentation prior to visiting the customer; evidence to cover three of the following:						
	a. personal company identification						
	b. plans						
	c. work instructions						
	d. company information						
	e. customer or client information.						
Type of evidence è							

O = Observation Q = Oral Question (OQ) or Written Question & Answer (WQ) S = Simulation/RWE
 WT = Witness testimony

Performance evidence required	Portfolio Reference Number (PRN)						
2. Be able to establish and maintain working relations with customers in the energy and utilities sector							
2.1	introduce and identify self to the customer in line with company requirements						
2.2	explain to the customer the purpose of the visit						
2.3	listen to the customer and respond appropriately to customer requirements						
2.4	agree work-plan with the customer, providing all relevant information						
2.5	record relevant information from the work activity						
2.6	respond appropriately to customer concerns and issues in line with company procedures; evidence to cover two of the following:						
	a. resolve customer issues on site within own level of responsibility						
	b. resolve customer issues on site when outside own area of responsibility by referring to an appropriate person						
	c. report issues which cannot be resolved on site						
	d. provide the customer with contact details of other personnel if requested.						
Type of evidence è							

**O = Observation Q = Oral Question (OQ) or Written Question & Answer (WQ) S = Simulation/RWE
WT = Witness testimony**

Unit 205

Install and commission communication systems for smart meters

This unit is designed to provide either new entrants or those operatives already working within the energy and utilities sector the opportunity to:

- know the principles of smart metering communication systems
- be able to plan, install, commission and test communication systems for smart meters
- identify and rectify faults on communication systems.

Where job was done	Time taken (hours)	Date

1. Know the principles of communication technologies used in smart metering	PRN
1.1 describe how communication systems for smart metering work	
1.2 describe the benefits of communication technologies used in smart metering for:	
a. customers	
b. energy suppliers	
1.3 explain the different types of in-house display equipment	
1.4 describe the implications of installing one type of communication system over another	
1.5 explain how to achieve interoperability between meters.	

Performance evidence required	Portfolio Reference Number (PRN)						
2. Be able to plan the location for the smart metering communication system							
2.1 explain how to assess the installation location for safety and correct operations of the communication system							
2.2 carry out a risk assessment of proposed locations and record observations using approved documentation							
2.3 identify a suitable location for the planned communication system installation for the customer							
2.4 carry out relevant checks to ensure that equipment and components provided are correct for the planned installation.							
Type of evidence è							

O = Observation Q = Oral Question (OQ) or Written Question & Answer (WQ) S = Simulation/RWE
 WT = Witness testimony

Performance evidence required		Portfolio Reference Number (PRN)						
3. Be able to install communication system for smart meters								
3.1	select and use the designated tools and installation components							
3.2	prepare the location to accommodate the planned installation using information from installation plans, manufacturer's manuals and the site specific risk assessment							
3.3	assemble equipment and components to manufacturer's specification							
3.4	install communication system as required by the plan							
3.5	install in-home display/software equipment as required by the plan							
3.6	connect the installation to services as required by the plan							
3.7	leave the installation site in a safe, clean and secure condition upon completion							
3.8	record installation information accurately using relevant documentation and procedures							
3.9	inform the customer if the installation cannot be completed and what actions are required for successful completion.							
Type of evidence è								

**O = Observation Q = Oral Question (OQ) or Written Question & Answer (WQ) S = Simulation/RWE
WT = Witness testimony**

Performance evidence required	Portfolio Reference Number (PRN)								
4. Be able to commission, test and complete communication installation for smart meters									
4.1	activate the communication system								
4.2	check that the installation functions according to specification								
4.3	test the communication reception system for transmitting and receiving data								
4.4	complete final checks on the communication system in accordance with specifications								
4.5	confirm all communication systems work in accordance with manufacturer's and employer's requirements								
4.6	inform the customer when the installation is complete or if there are any problems with the installation and advise when work will be completed								
4.7	demonstrate to the customer how the installation works, providing them with any relevant user operating instructions, to include at least two of the following:								
	a. operation of in-home unit (IHU)								
	b. access to supplier web-based energy information								
	c. appending credit and accessing relevant energy usage information								
	d. pairing smart meter with compatible appliances								
	e. operation of export tariffs								
4.8	complete all relevant installation documentation.								
Type of evidence è									

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WT = Witness testimony**

Performance evidence required	Portfolio Reference Number (PRN)								
5. Be able to identify and rectify faults in smart meter communication systems									
5.1	use relevant diagnostic procedures to determine the causes of system faults in line with manufacturer's guidelines								
5.2	report system faults in equipment and components that cannot be rectified on site to the responsible person(s)								
5.3	explain guidelines on replacing defective components where applicable								
5.4	rectify system faults, replacing defective components								
5.5	complete appropriate documentation and report findings in line with industry procedures.								
Type of evidence è									

**O = Observation Q = Oral Question (OQ) or Written Question & Answer (WQ) S = Simulation/RWE
WT = Witness testimony**

Unit 206

Install single phase meter and associated equipment

This unit is about installing single phase metering and associated equipment in an electrical power engineering environment. It involves completing installation activities in a rigorous and methodical manner and the following of processes and procedures to make sure that the finished work meets the quality assurance and operating specifications set by the organisation.

Where job was done	Time taken (hours)	Date

Unit 206

Install single phase meter and associated equipment

Performance evidence required	Portfolio Reference Number (PRN)						
1. Be able to plan for work activities to install single phase meter and associated equipment in line with company procedures							
1.1	identify work location using available information						
1.2	conduct a site specific risk assessment in line with health and safety regulations						
1.3	plan the work to be undertaken in line with risk assessment						
1.4	inform all affected parties of their intended work plan.						
Type of evidence è							

O = Observation Q = Oral Question (OQ) or Written Question & Answer (WQ) S = Simulation/RWE
WT = Witness testimony

Range

Plan the work to be undertaken: must include location, content and sequence of tasks, personnel.

Performance evidence required	Portfolio Reference Number (PRN)						
2. Be able to prepare resources to install single phase meter and associated equipment in line with company procedures							
2.1	select, inspect and wear personal protective equipment (PPE) compatible with the work plan, risk assessment and health and safety regulations						
2.2	apply control measures to ensure the work area is fit for purpose in line with risk assessment						
2.3	identify the meter and associated equipment to be installed, in line with the work plan						
2.4	select and prepare tools and equipment compatible with the work plan and risk assessment						
2.5	check tools and equipment are fit for purpose to carry out the identified work						
2.6	check meter details and accurately record meter readings						
2.7	report faults with tools, equipment and personal protective equipment (PPE).						
Type of evidence è							

O = Observation Q = Oral Question (OQ) or Written Question & Answer (WQ) S = Simulation/RWE
WT = Witness testimony

Range

Control measures: must include signs and barriers, demarcation of work area, control and removal of hazards, and contamination protection.

Performance evidence required		Portfolio Reference Number (PRN)					
3. Be able to install a single phase meter and associated equipment in line with company procedures							
3.1	install the identified single phase meter and associated equipment using selected tools and equipment, in line with the work plan and risk assessment						
3.2	install an isolator on at least one occasion, in line with the work plan						
3.3	perform testing procedures on completed installations						
3.4	check the completed installation complies with work instructions and equipment specifications						
3.5	demonstrate that problems are resolved safely and efficiently, referring matters which cannot be rectified to the appropriate person						
3.6	work in accordance with safe working and environmental practices, health and safety regulations and environmental legislation						
3.7	complete required post activity documentation						
3.8	demonstrate that tools and equipment are stored						
3.9	demonstrate that waste materials are handled in line with statutory procedures						
3.10	demonstrate that the work area is left in a safe condition.						
Type of evidence è							

O = Observation Q = Oral Question (OQ) or Written Question & Answer (WQ) S = Simulation/RWE
WT = Witness testimony

Range

Install: installation must include **one** of the following:

- a) single phase single rate meter
- b) multi rate with communication method
- c) two rate (with timeswitch and teleswitch with off peak or no off peak supplies)
- d) two rate 5 terminal meter
- e) multi-rate meter
- f) two rate key and token (with or without communication method, with or without off peak supply).

4. Understand how to install a single phase meter and associated equipment using general knowledge		PRN
4.1	describe the main principles of health and safety regulations and environmental legislation	
4.2	identify company reporting lines, authorisation roles and responsibilities	
4.3	describe the company policies and procedures that directly impact on the work to be undertaken.	

5. Understand how to install a single phase meter and associated equipment using work-specific knowledge		PRN
5.1	describe the company procedures and processes for reporting problems with tools and equipment	
5.2	describe the procedures and information sources used to make sure that tools and equipment are fit for purpose	
5.3	describe the processes and procedures for inspecting and preparing tools and equipment prior to use	
5.4	identify the instructions and processes for using tools and equipment safely when undertaking routine checks	
5.5	describe what personal protective equipment (PPE) needs to be worn when undertaking work activities	
5.6	describe what materials and substances are dangerous and hazardous to health	
5.7	describe how to maintain safe working and environmental practices	
5.8	describe how to minimise risks to self and others when undertaking work activities	
5.9	identify company work instructions and reporting systems	
5.10	describe the required response to different types and categories of emergency situations that may occur	
5.11	describe how to install plant and apparatus using specified principles, methods, processes and procedures	
5.12	identify and report inaccurate and incorrect work instructions and documentation.	

Unit 207

Change single phase meter and associated equipment

This unit is about changing single phase metering and associated equipment in an electrical power engineering environment. It includes the processes and procedures to be followed to make sure that the completed work meets the quality assurance and operating specifications set by the organisation. It also involves the wearing of personal protective equipment whilst carrying out the work.

Where job was done	Time taken (hours)	Date
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

Performance evidence required	Portfolio Reference Number (PRN)						
1. Be able to plan for work activities to change single phase meter and associated equipment in line with company procedures							
1.1	identify work location using available information						
1.2	conduct a site specific risk assessment in line with health and safety regulations						
1.3	plan the work to be undertaken in line with risk assessment						
1.4	inform all affected parties of their intended work plan.						
Type of evidence è							

O = Observation Q = Oral Question (OQ) or Written Question & Answer (WQ) S = Simulation/RWE
 WT = Witness testimony

Range

Plan the work to be undertaken: must include location, content and sequence of tasks, personnel.

Performance evidence required	Portfolio Reference Number (PRN)						
2. Be able to prepare resources to change single phase meter and associated equipment in line with company procedures							
2.1	select, inspect and wear personal protective equipment (PPE) compatible with the work plan, risk assessment and health and safety regulations						
2.2	apply control measures to ensure the work area is fit for purpose in line with risk assessment						
2.3	identify the meter and associated equipment to be installed, in line with the work plan						
2.4	select and prepare tools and equipment compatible with the work plan and risk assessment						
2.5	check tools and equipment are fit for purpose to carry out the identified work						
2.6	check meter details and accurately record meter readings						
2.7	report faults with tools, equipment and personal protective equipment (PPE).						
Type of evidence è							

O = Observation Q = Oral Question (OQ) or Written Question & Answer (WQ) S = Simulation/RWE
 WT = Witness testimony

Range

Control measures: must include signs and barriers, demarcation of work area, control and removal of hazards, and contamination protection.

Performance evidence required	Portfolio Reference Number (PRN)							
3. Be able to change a single phase meter and associated equipment in line with company procedures								
3.1	remove the identified single phase meter and associated equipment using selected tools and equipment, in line with the work plan and risk assessment							
3.2	replace removed meters							
3.3	perform testing procedures on completed installations							
3.4	demonstrate that problems are resolved safely and efficiently, referring matters which cannot be rectified to the appropriate person							
3.5	demonstrate that work is carried out in accordance with safe working and environmental practices, health and safety regulations and environmental legislation							
3.6	complete required post activity documentation							
3.7	demonstrate that tools and equipment are stored							
3.8	demonstrate that waste materials are handled in line with statutory procedures							
3.9	demonstrate that the work area is left in a safe condition.							
Type of evidence è								

O = Observation Q = Oral Question (OQ) or Written Question & Answer (WQ) S = Simulation/RWE
WT = Witness testimony

Range

Remove: removal must include one of the following:

- a) single phase single rate meter
- b) multi rate with communication method
- c) two rate (with timeswitch and teleswitch with or without off peak supplies)
- d) two rate 5 terminal meter
- e) multi-rate meter
- f) two rate key and token (with and without communication method, with or without off peak supplies).

4. Understand how to change a single phase meter and associated equipment using general knowledge	PRN
4.1 describe the main principles of health and safety regulations and environmental legislation	
4.2 identify company reporting lines, authorisation roles and responsibilities	
4.3 describe the company policies and procedures that directly impact on the work to be undertaken.	

5. Understand how to change a single phase meter and associated equipment using work-specific knowledge		PRN
5.1	describe the company procedures and processes for reporting problems with tools and equipment	
5.2	describe the procedures and information sources used to make sure that tools and equipment are fit for purpose	
5.3	describe the processes and procedures for inspecting and preparing tools and equipment prior to use	
5.4	identify the instructions and processes for using tools and equipment safely when undertaking routine checks	
5.5	describe what personal protective equipment (PPE) needs to be worn when undertaking work activities	
5.6	describe what materials and substances are dangerous and hazardous to health	
5.7	describe how to maintain safe working and environmental practices	
5.8	describe how to minimise risks to self and others when undertaking work activities	
5.9	identify the procedures and documentation used for reporting problems	
5.10	identify company work instructions and reporting systems	
5.11	describe the required response to different types and categories of emergency situations that may occur	
5.12	describe how to replace plant and apparatus using specified principles, methods, processes and procedures	
5.13	identify and report inaccurate and incorrect work instructions and documentation.	

Unit 208

Applied practices and principles for installing low pressure natural gas smart meters up to U6 only

This unit is designed to provide either new entrants or those operatives already working within the gas industry with the opportunity to:

- understand the dangers associated with electricity
- be able to use scientific principles in gas utilisation for natural gas smart meters
- understand gas pressure regulators
- know about combustion and the effects of its products
- understand building materials and methods used in the installation of natural gas smart meters
- understand the gas safety legislation and standards relating to gas smart metering.

Where job was done	Time taken (hours)	Date

1. Understand the dangers associated with electricity when preparing to install low pressure natural gas smart meters		PRN
1.1	evaluate the potential risks of electrical shock resulting from the existing electrical installation and faulty electrical tools and equipment. All of the following must be covered:	
	a. common electrical dangers on construction sites, in business and private properties	
	b. signs of damaged or worn electrical cables, power tools and property hard wiring systems	
	c. signs of visual faults in electrical components	
	d. trailing cables	
	e. proximity of cables to any service pipework and meter installation	
	f. buried and hidden cables	
	g. avoidance of cables under wooden floor	
1.2	explain different types of earthing used in properties, including main and supplementary protective bonding; all of the following must be covered:	
	a. requirements and procedures for use of temporary continuity bonding	
	b. earthing methods and sizing	
	c. main equipotential bonding	
	d. supplementary bonding	
	e. temporary bonding	
	f. electrical earth bonding labels.	

Performance evidence required	Portfolio Reference Number (PRN)							
2. Be able to use scientific principles in gas utilisation for natural gas smart metering								
2.1	identify the types of gas meter currently used in the gas industry and the gas rate for each of them.							
Type of evidence è								

O = Observation Q = Oral Question (OQ) or Written Question & Answer (WQ) S = Simulation/RWE
 WT = Witness testimony

3. Understand how to use gas pressure regulators		PRN
3.1	identify the correct operating pressures for low pressure in the natural gas network	
3.2	outline the network pressure tiers	
3.3	explain the need for, and use of, pressure regulators including factors affecting pressure loss	
3.4	explain how to correctly use pressure gauges to include digital and water.	

4. Know about combustion and the effects of its products		PRN
4.1	evaluate the characteristics of:	
	a. complete and incomplete combustion including air and fuel requirements	
	b. pre- and post-aerated flames	
	c. the effects of carbon monoxide on building occupants	
4.2	identify, visually, burner faults resulting in incomplete combustion including:	
	a. flame lift	
	b. lighting back .	

5. Understand building materials and methods used in the installation of natural gas smart meters		PRN
5.1	explain how to identify corrosion in metals and protection methods; all of the following must be covered:	
	a. properties of metals	
	b. corrosion	
	c. protection from corrosion to protective finishes	
	d. construction materials including plastics, timber, bricks, concrete, cement and plaster	
5.2	explain how to identify correct and incorrect service entries into buildings. Both of the following must be covered:	
	a. damp proof course	
	b. other services entering properties	
5.3	explain how to identify suitable and unsuitable routes within buildings for the installation of gas pipework and fittings. All of the following must be covered:	
	a. types of pipe materials and fittings suitable for carrying gas	
	b. jointing of materials and fittings including copper capillary, compression, push-fit joints, press fit joints	
	c. steel including threaded and union joints	
	d. suitable pipe supports and fixings including methods used for a variety of walls, brick, concrete, thermalite block, studded, dry lined and timber frame	
	e. location of pipes, route and appearance	
	f. pipework in walls, voids, ducts/shafts and under floors	
	g. exterior pipework	
	h. interrelation with other services	

	i. corrosion protection	
	j. gas pipe identification	
	k. disconnection of pipes and fittings including use of temporary continuity bond	
5.4	summarise the need for ventilation for gas fuelled appliances, ventilation paths and their effect upon sizes	
5.5	calculate ventilation requirements for all types of gas-fuelled appliances. All of the following must be covered in the calculations:	
	a. ventilation openings and grilles	
	b. adventitious ventilation	
	c. location of vents	
	d. installation of vents through walls	
	e. ventilation paths via other rooms	
	f. ventilation paths to compartments including ducts	
	g. ventilation requirements for open-flue appliances	
	h. ventilation requirements for flueless appliances	
	i. ventilation requirements for appliances in compartments	
	j. compartment ventilation labels	
	k. effects of extractor fans	
	l. ventilation for vertex flues	
	m. passive stack ventilation	
5.6	explain how to identify correct and incorrect ventilators and installations	
5.7	describe the different types of open flue and room sealed chimney systems. All of the following types of chimney systems must be covered:	
	a. natural	
	b. fanned draught	
	c. rigid chimney types: brick/masonry, single and double wall, metallic and non-metallic	
	d. flexible metallic liners	
	e. shared (common) chimney systems	
	f. SE & U Ducts	
5.8	summarise the suitability and characteristics of all of the following chimney construction materials:	
	a. metallic (single/double wall)	
	b. non metallic	
	c. brick/masonry chimneys	
	d. chimney blocks	
	e. flexible metallic liners	
	f. gas flue boxes	
5.9	identify correct and incorrect chimney outlet positions for open flue chimneys and room sealed appliances. Both of the following must be covered:	
	a. pitched and flat roofs	
	b. proximity to windows, doors, carports	
5.10	explain the different flue and chimney systems and how they operate. All of the following must be covered:	

	a. parts of an open flue chimney	
	b. open flue chimney system operation	
	c. chimney system design	
	d. temperature effects	
	e. condensation problems	
	f. flue terminal design	
	g. open flue, natural draught chimney outlet locations/positions before and after 2001	
	h. general operations of room sealed chimney including: parts and operation of a room-sealed appliance flue (natural draught and fan draught), room sealed appliance flue, flue terminal design	
	i. room sealed chimney materials including metallic and plastic	
	j. room sealed chimney outlet positions including terminal positions, neighbouring properties, carports or extensions, condensing appliances, basements, light wells and retaining walls, terminal guards requirements	
5.11	explain the need to test an open chimney and room sealed appliance and who would carry out the test. To include all of the following:	
	a. visual checks	
	b. factors that affect performance including down draught and wind effects	
	c. effects of passive stack ventilation	
	d. effects of fans	
	e. flue flow test and spillage	
	f. testing fanned draught open flue systems	
	g. checking case seals and case integrity	
	h. checking/testing positive pressure case appliances.	

6.	Understand gas safety regulations, legislation and standards in natural gas smart metering	PRN
6.1	explain the scope and purpose of regulations, legislation and standards relating to work activities covering:	
	a. Gas Safety (Installation and Use) Regulations	
	b. Reporting of Injuries, Diseases and Dangerous Occurrences Regulations (RIDDOR)	
6.2	explain the unsafe situations procedure and how the information at each level is passed on to the customer	
6.3	identify, visually, unsafe situations in appliances, meters and installation pipework.	

Unit 209

Prepare, install and commission low pressure natural gas smart meter and regulator up to 6.0m³/hr

This unit is designed to provide new entrants or those already working within the gas industry the opportunity to plan and prepare work activities, plan resources, de-commission, install and commission natural gas smart meters (up to 6.0m³/hr) on low pressure gas services.

Where job was done	Time taken (hours)	Date

Unit 209

Prepare, install and commission low pressure natural gas smart meter and regulator up to 6.0m³/hr

Performance evidence required	Portfolio Reference Number (PRN)						
1. Be able to plan and prepare work activities to install natural gas smart meter (up to 6.0m³/hr) on low pressure gas systems							
1.1	identify and agree the work location using available information						
1.2	check the work site for damage or defects						
1.3	record and report any damage or defects to the correct people						
1.4	inform all affected parties of their intended work plan, in line with industry standards						
1.5	demonstrate how to test for the presence of voltage at the meter installation using an approved voltage sensing device						
1.6	confirm the siting of the emergency control valve is accessible, correctly labelled and operating correctly, reporting any defects to the network owner for rectification						
1.7	conduct a site specific risk assessment, completing required documentation in line with health and safety regulations and industry standards						
1.8	select, inspect and wear personal protective equipment (PPE) compatible with the work plan, risk assessment and health and safety requirements						
1.9	explain what to look for when carrying out a visual inspection of tools and equipment						
1.10	plan the work to be undertaken to comply with industry standards and manufacturer's guidelines, taking into account risk assessment, location and ventilation						
1.11	explain the appropriate industry standards and procedures that directly impact on the work to be undertaken						
1.12	describe the appropriate regulations relating to safe access and working at heights						
1.13	select the appropriate tools and equipment required to work at heights and in confined spaces.						
Type of evidence è							

O = Observation Q = Oral Question (OQ) or Written Question & Answer (WQ) S = Simulation/RWE
 WT = Witness testimony

Performance evidence required	Portfolio Reference Number (PRN)							
2. Be able to prepare resources to install natural gas smart meter (up to 6.0m³/hr) on low pressure gas systems								
2.1	select and prepare tools and equipment compatible with the work plan, risk assessment and industry standards							
2.2	report any defects and/or shortages							
2.3	apply correct control measures to ensure the work site is in a safe and suitable condition for work and the area is protected from damage being caused throughout the work							
2.4	identify and confirm the meter installation is supplied with low pressure (75mbar or less)							
2.5	confirm and record meter readings							
2.6	confirm the gas load is operating at the maximum capacity of the meter							
2.7	explain the actions to be taken in case of non-compliance of the meter installation							
2.8	identify and confirm suitability of the meter and associated equipment to be installed, in line with industry standards and work plan.							
Type of evidence ⇨								

**O = Observation Q = Oral Question (OQ) or Written Question & Answer (WQ) S = Simulation/RWE
WT = Witness testimony**

Performance evidence required	Portfolio Reference Number (PRN)							
3. Be able to de-commission natural gas meters and regulators (up to 6.0m³/hr) on low pressure gas service								
3.1	check that conditions within the gas and earthing systems permit safe de-commissioning							
3.2	use the correct tools and equipment for the different de-commissioning activities including use of temporary continuity bonds							
3.3	use designated safe isolation methods, tests and procedures to de-commission meters, regulators, gas installation and components							
3.4	take appropriate precautionary action to ensure that temporarily de-commissioned meters, regulators and gas installation components do not present a safety hazard							
3.5	permanently remove and disconnect meters, regulators, gas systems and components including any equipotential bonding as required, ensuring the appropriate labelling, storage and waste management procedures are followed							
3.6	correctly label any live gas pipes following permanent removal of a meter leaving a permanent bond or other electrical safety measures in place							
3.7	explain the procedures for temporary and permanent de-commissioning of meters and regulators, including the use of temporary continuity bonds							

3.8	explain the precautions to be taken to ensure they do not prevent safety hazards							
3.9	communicate appropriately with responsible persons in the de-commissioning process.							
Type of evidence è								

**O = Observation Q = Oral Question (OQ) or Written Question & Answer (WQ) S = Simulation/RWE
WT = Witness testimony**

Performance evidence required		Portfolio Reference Number (PRN)						
4. Be able to install natural gas smart meter (up to 6.0m³/hr) on low pressure gas service								
4.1	work in accordance with relevant health, safety, environmental and industry standards throughout the installation							
4.2	explain how and where to access information relating to the installation							
4.3	install the identified natural gas smart meter (2.5 to 6.0m ³ /hr) and associated equipment on low pressure gas service using selected tools and equipment, in line with the work plan, risk assessment, manufacturer's specifications and relevant regulations and standards							
4.4	explain with whom to liaise when procedures or routines may be affected by the suspension of the gas supply, and why this is important							
4.5	correctly carry out testing procedures on completed installations in line with industry standards							
4.6	check the completed installation meets and complies with the work plan and equipment specifications							
4.7	check for adequate earthing and bonding to the installation							
4.8	explain the actions to be taken if earthing and bonding are inadequate							
4.9	confirm the integrity of the installation and gas system using tightness and purging procedures (low pressure testing only)							
4.10	appropriately complete and attach a warning notice on at least one occasion							
4.11	resolve any problems encountered during the installation safely and efficiently in line with industry standards, referring matters which cannot be resolved to an appropriate person							
4.12	inform the customer if work is not completed and explain the reason(s)							
4.13	complete all relevant documentation/electronic data relating to the installation in line with industry standards							
4.14	store all tools and equipment in line with industry standards and health and safety requirements							
4.15	safely collect and dispose of all waste, including components that may be hazardous to health or the environment in line with industry standards.							
Type of evidence è								

**O = Observation Q = Oral Question (OQ) or Written Question & Answer (WQ) S = Simulation/RWE
WT = Witness testimony**

Performance evidence required	Portfolio Reference Number (PRN)						
5. Be able to commission natural gas smart meter (up to 6.0m³/hr) on low pressure gas service							
5.1	confirm that conditions within the gas installation are suitable and will permit safe commissioning						
5.2	select and use appropriate tools and equipment for the commissioning activity						
5.3	confirm the gas operating pressure is correct for the activity and adjust or inform the network owner if not able to achieve the correct pressure						
5.4	visually inspect to confirm the operation of the installation conforms to manufacturer's instructions, industry standards and British Standards						
5.5	explain the gas industry unsafe situations procedure and when this applies, including when to isolate unsafe gas appliances, systems and components						
5.6	relight any previously connected appliances to manufacturer's instructions and visually inspect for safety defects						
5.7	instruct the customer on the correct operation of the installation, providing a copy of manufacturer's instructions and other relevant documentation.						
Type of evidence è							

**O = Observation Q = Oral Question (OQ) or Written Question & Answer (WQ) S = Simulation/RWE
WT = Witness testimony**

Unit 210

Low pressure gas smart meter tightness testing and direct purging

This unit is designed to provide either new entrants or those operatives already working in the gas industry installing smart meters the opportunity to plan and prepare work activities, de-commission natural gas systems and carry out tightness tests and direct purging on low pressure natural gas smart meters.

Where job was done	Time taken (hours)	Date
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

Unit 210

Low pressure gas smart meter tightness testing and direct purging

Performance evidence required	Portfolio Reference Number (PRN)							
1. Be able to plan and prepare work activities for tightness testing and direct purging - low pressure only								
1.1	confirm the siting of the gas supply and provision of ventilation meets the industry requirements for tightness testing and direct purging							
1.2	conduct a site specific risk assessment, completing required documentation in line with health and safety regulations and industry standards							
1.3	plan the work to be undertaken to comply with industry standards and manufacturer's guidelines, taking into account risk assessment, location and ventilation							
1.4	confirm that the gas supply meets the industry requirements for the installation.							
Type of evidence è								

**O = Observation Q = Oral Question (OO) or Written Question & Answer (WQ) S = Simulation/RWE
WT = Witness testimony**

Performance evidence required	Portfolio Reference Number (PRN)							
2. Be able to de-commission natural gas systems and components to industry standards								
2.1	check and confirm that conditions within the gas installation permit safe de-commissioning							
2.2	select and use the correct tools and equipment for de-commissioning activities							
2.3	explain the process to be followed should materials, components, tools and equipment not be available to commence the de-commissioning process							
2.4	use designated safe isolation methods, tests and procedures to de-commission gas installations and components							
2.5	take appropriate precautionary action to ensure that temporarily de-commissioned appliances, gas systems and components do not present a safety hazard							
2.6	take appropriate, safe and correct action to prevent de-commissioned gas systems being brought into operation							
2.7	communicate with others who may be affected by the suspension of the gas supply including other trades and customer.							
Type of evidence è								

**O = Observation Q = Oral Question (OO) or Written Question & Answer (WQ) S = Simulation/RWE
WT = Witness testimony**

Performance evidence required	Portfolio Reference Number (PRN)						
3. Be able to tightness test and direct purge low pressure natural gas smart meters							
3.1	apply control measures to ensure safety and suitability of the work site during the test in line with a site specific risk assessment						
3.2	apply methods of working which protect the building décor, customer property and existing systems and components						
3.3	carry out a trace and repair to a gas escape and retest						
3.4	isolate unsafe gas appliances, gas systems and components and apply the gas industry unsafe situations procedure						
3.5	carry out low pressure purging procedures to the current standard to confirm the safe supply of gas to the installed gas pipe work and appliances						
3.6	resolve any problems as they arise in accordance with approved procedures and refer to an appropriate person when problems cannot be resolved						
3.7	instruct the customer or appropriate person on the correct operation of the meter installation, valves and components, providing a copy of any literature						
3.8	complete all records and documentation in line with industry standards following tightness testing and direct purging						
3.9	store all tools and equipment in line with health and safety requirements						
3.10	safely collect and dispose of all waste, including system contents that may be hazardous to health or the environment, in line with legislative requirements.						
Type of evidence è							

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WT = Witness testimony**

Unit 211

Install multi phase meter – whole current (new connection)

Where job was done	Time taken (hours)	Date

Unit 211

Install multi phase meter – whole current (new connection)

Performance evidence required		Portfolio Reference Number (PRN)							
1. Plan for work activities to install multi phase meter (whole current)									
1.1	identify the correct work location using available information								
1.2	conduct a site specific risk assessment, completing required documentation, in line with health and safety regulations								
1.3	plan the work to be undertaken to comply with company procedures in line with risk assessment, taking into account factors such as location, content and sequence of tasks, personnel								
1.4	inform all affected parties of their intended work plan, in line with company procedures.								
Type of evidence è									

**O = Observation Q = Oral Question (OQ) or Written Question & Answer (WQ) S = Simulation/RWE
WT = Witness testimony**

Performance evidence required		Portfolio Reference Number (PRN)							
2. Prepare resources to install multi phase meter (whole current)									
2.1	select, inspect and wear personal protective equipment (PPE) compatible with the work plan, risk assessment and health and safety regulations								
2.2	apply appropriate control measures to ensure the work area is in a safe and suitable condition for work to commence in line with risk assessment requirements and company procedures (eg signs and barriers, demarcation of work area, control and removal of hazards, contamination protection)								
2.3	identify the correct meter to be installed, in line with company procedures and work plan								
2.4	select and prepare tools and equipment compatible with the work plan, risk assessment and company procedures								
2.5	check the tools and equipment are fit for purpose to carry out the identified work in line with company procedures								
2.6	confirm meter details and record meter readings								
2.7	report faults with tools, equipment and PPE, including that which is unavailable, in line with company procedures.								
Type of evidence è									

**O = Observation Q = Oral Question (OQ) or Written Question & Answer (WQ) S = Simulation/RWE
WT = Witness testimony**

Performance evidence required		Portfolio Reference Number (PRN)							
3. Install multi phase meter (whole current)									
3.1	install identified multi phase meter using selected tools and equipment, in line with the work plan, risk assessment and company procedures. Installation to include one electronic multi phase meter and any one of the following:								
	a. multi phase multi rate meter with communication method								
	b. mechanical multi phase meter								
	c. mechanical multi phase multi rate with or without off peak supplies								
	d. electronic multi phase multi rate meter with or without off peak supplies								
3.2	carry out appropriate testing procedures on completed installations, in line with company procedures								
3.3	check the completed installation to ensure it meets and complies with work instructions and equipment specifications								
3.4	deal with all problems encountered safely and efficiently, referring matters which cannot be rectified to the appropriate person								
3.5	work throughout the duration of the work in accordance with:								
	a. safe working and environmental practices								
	b. company procedures								
	c. health and safety regulations								
	d. environmental legislation								
3.6	complete all required post activity documentation in line with company policy								
3.7	ensure all tools and equipment are stored in line with company procedures								
3.8	ensure hazardous and non hazardous waste materials are dealt with and disposed of in accordance with Company and statutory procedures								
3.9	ensure the work area is left in a safe condition compatible with company procedures.								
Type of evidence è									

**O = Observation Q = Oral Question (OQ) or Written Question & Answer (WQ) S = Simulation/RWE
WT = Witness testimony**

Performance evidence required	Portfolio Reference Number (PRN)						
4. Know and understand how to install multi phase meter (whole current) using general knowledge							
4.1	demonstrate they know the main principles of health and safety and environmental legislation and regulations						
4.2	demonstrate they know the company reporting lines and authorisation roles and responsibilities						
4.3	demonstrate they know the company policies and procedures that directly impact on the work to be undertaken.						
Type of evidence è							

**O = Observation Q = Oral Question (OQ) or Written Question & Answer (WQ) S = Simulation/RWE
WT = Witness testimony**

Performance evidence required	Portfolio Reference Number (PRN)							
5. Know and understand how to install multi phase meter (whole current) using work-specific knowledge								
5.1	demonstrate they know the company procedures and processes for reporting problems with tools and equipment							
5.2	demonstrate they know how to read and interpret procedures and information sources used to make sure that tools and equipment are fit for purpose and safe to use							
5.3	demonstrate they know the processes and procedures to be followed for inspecting and preparing tools and equipment prior to use							
5.4	demonstrate they know how to read and interpret instructions on how to use tools and equipment safely and the processes and requirements for undertaking routine checks							
5.5	demonstrate they know what personal protective equipment needs to worn when undertaken work activities							
5.6	demonstrate they know what materials and substances are dangerous and hazardous to health							
5.7	demonstrate they know how to maintain safe working and environmental practices throughout the duration of the work							
5.8	demonstrate they know how to minimise risks to self and others when undertaking work activities							
5.9	demonstrate they know the company work instruction, information and reporting systems and documentation							
5.10	demonstrate they know how to respond to the different types and categories of emergency situations that might occur							
5.11	demonstrate they know how to install plant and apparatus using specified principles, methods, processes and procedures							
5.12	demonstrate they know how to recognise and report inaccurate and incorrect work instructions and documentation.							
Type of evidence è								

**O = Observation Q = Oral Question (OQ) or Written Question & Answer (WQ) S = Simulation/RWE
WT = Witness testimony**

Where job was done	Time taken (hours)	Date

Performance evidence required		Portfolio Reference Number (PRN)						
1. Plan for work activities to change multi phase meter (whole current)								
1.1	identify the correct work location using available information							
1.2	conduct a site specific risk assessment, completing required documentation, in line with health and safety regulations							
1.3	plan the work to be undertaken to comply with company procedures in line with risk assessment, taking into account factors such as location, content and sequence of tasks, personnel							
1.4	inform all affected parties of their intended work plan, in line with company procedures.							
Type of evidence è								

O = Observation Q = Oral Question (OQ) or Written Question & Answer (WQ) S = Simulation/RWE
 WT = Witness testimony

Performance evidence required		Portfolio Reference Number (PRN)						
2. Prepare resources to change multi phase meter (whole current)								
2.1	select, inspect and wear personal protective equipment (PPE) compatible with the work plan, risk assessment and health and safety regulations							
2.2	apply appropriate control measures to ensure the work area is in a safe and suitable condition for work to commence in line with risk assessment requirements and company procedures (eg signs and barriers, demarcation of work area, control and removal of hazards, contamination protection)							
2.3	identify the correct meter and associated equipment to be worked on, in line with company procedures and work plan							
2.4	select and prepare tools and equipment compatible with the work plan, risk assessment and company procedures							
2.5	check the tools and equipment are fit for purpose to carry out the identified work in line with company procedures							
2.6	confirm meter details and record meter readings							
2.7	report faults with tools, equipment and PPE, including that which is unavailable, in line with company procedures.							
Type of evidence è								

O = Observation Q = Oral Question (OQ) or Written Question & Answer (WQ) S = Simulation/RWE
 WT = Witness testimony

Performance evidence required	Portfolio Reference Number (PRN)						
3. Change multi phase meter (whole current)							
3.1	<p>remove the identified single phase meter and associated equipment using selected tools and equipment, in line with the work plan, risk assessment and company procedures. Removal must include one multi phase single rate meter and any one of the following:</p> <p>a. multi phase mechanical meter with or without timeswitch and teleswitch</p> <p>b. electronic multi phase meter</p> <p>c. multi rate meter with communication method</p>						
3.2	<p>follow job instructions and company procedures to replace the removed meters with any two of the following:</p> <p>a. multi phase multi rate meter with communication method</p> <p>b. mechanical multi phase meter</p> <p>c. mechanical multi phase multi rate with or without off peak supplies</p> <p>d. electronic multi phase multi-rate meter with or without off peak supplies</p>						
3.3	carry out appropriate testing procedures on completed installations, in line with company procedures						
3.4	deal with all problems encountered safely and efficiently, referring matters which cannot be rectified to the appropriate person						
3.5	work throughout the duration of the work in accordance with safe working and environmental practices, company procedures, health and safety regulations and environmental legislation						
3.6	complete all required post activity documentation in line with company policy						
3.7	ensure all tools and equipment are stored in line with company procedures						
3.8	ensure hazardous and non hazardous waste materials are dealt with and disposed of in accordance with Company and statutory procedures						
3.9	ensure the work area is left in a safe condition compatible with company procedures.						
Type of evidence è							

**O = Observation Q = Oral Question (OQ) or Written Question & Answer (WQ) S = Simulation/RWE
WT = Witness testimony**

Performance evidence required	Portfolio Reference Number (PRN)						
4. Know and understand how to change multi phase meter (whole current) using general knowledge							
4.1	demonstrate they know the main principles of health and safety and environmental legislation and regulations						
4.2	demonstrate they know the company reporting lines and authorisation roles and responsibilities						
4.3	demonstrate they know the company policies and procedures that directly impact on the work to be undertaken.						
Type of evidence è							

**O = Observation Q = Oral Question (OQ) or Written Question & Answer (WQ) S = Simulation/RWE
WT = Witness testimony**

Performance evidence required	Portfolio Reference Number (PRN)						
5. Know and understand how to change multi phase meter (whole current) using work-specific knowledge							
5.1	demonstrate they know the company procedures and processes for reporting problems with tools and equipment						
5.2	demonstrate they know how to read and interpret the, procedures and information sources used to make sure that tools and equipment are fit for purpose and safe to use						
5.3	demonstrate they know the processes and procedures to be followed for inspecting and preparing tools and equipment prior to use						
5.4	demonstrate they know how to read and interpret instructions on how to use tools and equipment safely and the processes and requirements for undertaking routine checks						
5.5	demonstrate they know what personal protective equipment needs to worn when undertaken work activities						
5.6	demonstrate they know what materials and substances are dangerous and hazardous to health						
5.7	demonstrate they know how to maintain safe working and environmental practices throughout the duration of the work						
5.8	demonstrate they know how to minimise risks to self and others when undertaking work activities						
5.9	demonstrate they know the procedures and documentation used for reporting problems						
5.10	demonstrate they know the company work instruction, information and reporting systems and documentation						
5.11	demonstrate they know how to respond to the different types and categories of emergency situations that might occur						
5.12	demonstrate they know how to replace plant and apparatus using specified principles, methods, processes and procedures						
5.13	demonstrate they know how to recognise and report inaccurate and incorrect work instructions and documentation.						
Type of evidence è							

**O = Observation Q = Oral Question (OQ) or Written Question & Answer (WQ) S = Simulation/RWE
WT = Witness testimony**

Unit 213

Install single phase meter and associated equipment on multi phase cut-out (new connection)

Where job was done	Time taken (hours)	Date

Unit 213

Install single phase meter and associated equipment on multi phase cut-out (new connection)

Performance evidence required	Portfolio Reference Number (PRN)						
1. Plan for work activities to install single phase meter and associated equipment on multi phase cut-outs							
1.1	identify the correct work location using available information						
1.2	conduct a site specific risk assessment, completing required documentation, in line with health and safety regulations						
1.3	plan the work to be undertaken to comply with company procedures in line with risk assessment, taking into account factors such as location, content and sequence of tasks, personnel						
1.4	inform all affected parties of their intended work plan, in line with company procedures.						
Type of evidence è							

O = Observation Q = Oral Question (OO) or Written Question & Answer (WQ) S = Simulation/RWE
WT = Witness testimony

Performance evidence required	Portfolio Reference Number (PRN)						
2. Prepare resources to install single phase meter and associated equipment on multi phase cut-outs							
2.1	select, inspect and wear personal protective equipment (PPE) compatible with the work plan, risk assessment and health and safety regulations						
2.2	apply appropriate control measures to ensure the work area is in a safe and suitable condition for work to commence in line with risk assessment requirements and company procedures (eg signs and barriers, demarcation of work area, control and removal of hazards, contamination protection)						
2.3	identify the correct meter to be installed, in line with company procedures and work plan						
2.4	select and prepare tools and equipment compatible with the work plan, risk assessment and Company procedures						
2.5	check the tools and equipment are fit for purpose to carry out the identified work in line with company procedures						
2.6	confirm meter details and record meter readings						
2.7	report faults with tools, equipment and PPE, including that which is unavailable, in line with company procedures.						
Type of evidence è							

O = Observation Q = Oral Question (OO) or Written Question & Answer (WQ) S = Simulation/RWE
WT = Witness testimony

Performance evidence required		Portfolio Reference Number (PRN)					
3. Install single phase meter and associated equipment on multi phase cut-outs							
3.1	install identified single multi phase meter and associated equipment on multi phase cut outs using selected tools and equipment, in line with the work plan, risk assessment and company procedures. Installation to include one single phase single rate meter and any one of the following:						
	a. multi rate with communication method						
	b. two rate (with timeswitch and teleswitch with or without off peak supplies)						
	c. multi rate 5 terminal meter						
	d. multi-rate meter						
	e. two rate key and token (with or without communication method, with or without off peak supplies)						
3.2	install an isolator on at least one occasion, in line with company precedures and work plan						
3.3	carry out company required testing procedures on completed installations, in line with company procedures						
3.4	check the installation meets and complies with the work instructions and equipment specifications						
3.5	deal with all problems encountered safely and efficiently, referring matters which cannot be rectified to the appropriate person						
3.6	work throughout the duration of the work in accordance with safe working and environmental practices, company procedures, health and safety regulations and environmental legislation						
3.7	complete all required post activity documentation in line with company policy						
3.8	ensure all tools and equipment are stored in line with company procedures						
3.9	ensure hazardous and non hazardous waste materials are dealt with and disposed of in accordance with Company and statutory procedures						
3.10	ensure the work area is left in a safe condition compatible with company procedures.						
Type of evidence è							

**O = Observation Q = Oral Question (OQ) or Written Question & Answer (WQ) S = Simulation/RWE
WT = Witness testimony**

Performance evidence required	Portfolio Reference Number (PRN)						
4. Know and understand how to install single phase meter and associated equipment on multi phase cut-outs using general knowledge							
4.1	demonstrate they know the main principles of health and safety and environmental legislation and regulations						
4.2	demonstrate they know the company reporting lines and authorisation roles and responsibilities						
4.3	demonstrate they know the company policies and procedures that directly impact on the work to be undertaken.						
Type of evidence è							

O = Observation Q = Oral Question (OQ) or Written Question & Answer (WQ) S = Simulation/RWE
 WT = Witness testimony

Performance evidence required	Portfolio Reference Number (PRN)						
5. Know and understand how to install single phase meter and associated equipment on multi phase cut-outs using work-specific knowledge							
5.1	demonstrate they know the company procedures and processes for reporting problems with tools and equipment						
5.2	demonstrate they know how to read and interpret procedures and information sources used to make sure that tools and equipment are fit for purpose and safe to use						
5.3	demonstrate they know the processes and procedures to be followed for inspecting and preparing tools and equipment prior to use						
5.4	demonstrate they know how to read and interpret instructions on how to use tools and equipment safely and the processes and requirements for undertaking routine checks						
5.5	demonstrate they know what personal protective equipment needs to worn when undertaken work activities						
5.6	demonstrate they know what materials and substances are dangerous and hazardous to health						
5.7	demonstrate they know how to maintain safe working and environmental practices throughout the duration of the work						
5.8	demonstrate they know how to minimise risks to self and others when undertaking work activities						
5.9	demonstrate they know the company work instruction, information and reporting systems and documentation						
5.10	demonstrate they know how to respond to the different types and categories of emergency situations that might occur						
5.11	demonstrate they know how to install plant and apparatus using specified principles, methods, processes and procedures						
5.12	demonstrate they know how to recognise and report inaccurate and incorrect work instructions and documentation.						
Type of evidence è							

**O = Observation Q = Oral Question (OO) or Written Question & Answer (WQ) S = Simulation/RWE
WT = Witness testimony**

Unit 214

Change single phase meter and associated equipment on multi phase cut-outs

Where job was done	Time taken (hours)	Date

Performance evidence required		Portfolio Reference Number (PRN)							
1. Plan for work activities to change single phase meter and associated equipment on multi phase cut-outs									
1.1	identify the correct work location using available information								
1.2	conduct a site specific risk assessment, completing required documentation, in line with health and safety regulations								
1.3	plan the work to be undertaken to comply with company procedures in line with risk assessment, taking into account factors such as location, content and sequence of tasks, personnel								
1.4	inform all affected parties of their intended work plan, in line with company procedures.								
Type of evidence è									

O = Observation Q = Oral Question (OO) or Written Question & Answer (WQ) S = Simulation/RWE
 WT = Witness testimony

Performance evidence required		Portfolio Reference Number (PRN)							
2. Prepare resources to change single phase meter and associated equipment on multi phase cut-outs									
2.1	select, inspect and wear personal protective equipment (PPE) compatible with the work plan, risk assessment and health and safety regulations								
2.2	apply appropriate control measures to ensure the work area is in a safe and suitable condition for work to commence in line with risk assessment requirements and Company procedures (eg signs and barriers, demarcation of work area, control and removal of hazards, contamination protection)								
2.3	identify the correct meter and associated equipment to be worked on, in line with company procedures and work plan								
2.4	select and prepare tools and equipment compatible with the work plan, risk assessment and company procedures								
2.5	check the tools and equipment are fit for purpose to carry out the identified work in line with company procedures								
2.6	confirm meter details and record meter readings								
2.7	report faults with tools, equipment and PPE, including that which is unavailable, in line with company procedures.								
Type of evidence è									

O = Observation Q = Oral Question (OO) or Written Question & Answer (WQ) S = Simulation/RWE
 WT = Witness testimony

Performance evidence required	Portfolio Reference Number (PRN)						
3. Change single phase meter and associated equipment on multi phase cut-outs							
3.1	remove the identified single phase meter and associated equipment using selected tools and equipment, in line with the work plan, risk assessment and company procedures. Removal must include one single phase single rate meter and any one of the following:						
	a. multi rate with communication method						
	b. two rate (with timeswitch and teleswitch with or without off peak supplies)						
	c. multi rate 5 terminal meter						
	d. multi-rate meter						
	e. two rate key and token (with or without communication method, with or without off peak supplies)						
3.2	replace removed meters in line with company procedures and work plan with any two of the following:						
	a. multi rate with communication method						
	b. mechanical single phase meter						
	c. electronic single phase meter						
	d. multi rate (with timeswitch and teleswitch with or without off peak supplies)						
	e. multi rate 5 terminal meter						
	f. check meter						
	g. multi-rate meter						
	h. multi rate key and token (with or without communication method, with or without off peak supplies)						
3.3	carry out appropriate testing procedures on completed installations, in line with company procedures						
3.4	deal with all problems encountered safely and efficiently, referring matters which cannot be rectified to the appropriate person						
3.5	work throughout the duration of the work in accordance with safe working and environmental practices, company procedures, health and safety regulations and environmental legislation						
3.6	complete all required post activity documentation in line with company policy						
3.7	ensure all tools and equipment are stored in line with company procedures						
3.8	ensure hazardous and non hazardous waste materials are dealt with and disposed of in accordance with company and statutory procedures						
3.9	ensure the work area is left in a safe condition compatible with company procedures.						
Type of evidence è							

**O = Observation Q = Oral Question (OQ) or Written Question & Answer (WQ) S = Simulation/RWE
WT = Witness testimony**

Performance evidence required	Portfolio Reference Number (PRN)						
4. Know and understand how to change single phase meter and associated equipment on multi phase cut-outs using general knowledge							
4.1	demonstrate they know the main principles of health and safety and environmental legislation and regulations						
4.2	demonstrate they know the company reporting lines and authorisation roles and responsibilities						
4.3	demonstrate they know the company policies and procedures that directly impact on the work to be undertaken.						
Type of evidence è							

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WT = Witness testimony**

Performance evidence required	Portfolio Reference Number (PRN)						
5. Know and understand how to change single phase meter and associated equipment on multi phase cut-outs using work-specific knowledge							
5.1	demonstrate they know the company procedures and processes for reporting problems with tools and equipment						
5.2	demonstrate they know how to read and interpret the, procedures and information sources used to make sure that tools and equipment are fit for purpose and safe to use						
5.3	demonstrate they know the processes and procedures to be followed for inspecting and preparing tools and equipment prior to use						
5.4	demonstrate they know how to read and interpret instructions on how to use tools and equipment safely and the processes and requirements for undertaking routine checks						
5.5	demonstrate they know what personal protective equipment needs to worn when undertaken work activities						
5.6	demonstrate they know what materials and substances are dangerous and hazardous to health						
5.7	demonstrate they know how to maintain safe working and environmental practices throughout the duration of the work						
5.8	demonstrate they know how to minimise risks to self and others when undertaking work activities						
5.9	demonstrate they know the procedures and documentation used for reporting problems						
5.10	demonstrate they know the company work instruction, information and reporting systems and documentation						
5.11	demonstrate they know how to respond to the different types and categories of emergency situations that might occur						
5.12	demonstrate they know how to replace plant and apparatus using specified principles, methods, processes and procedures						
5.13	demonstrate they know how to recognise and report inaccurate and incorrect work instructions and documentation.						
Type of evidence è							

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Unit 215

Prepare, install and commission medium pressure natural gas smart meter and regulator up to 6.0m³/hr

Where job was done	Time taken (hours)	Date

Unit 215

Prepare, install and commission medium pressure natural gas smart meter and regulator up to 6.0m³/hr

Performance evidence required	Portfolio Reference Number (PRN)								
1. Be able to plan and prepare work activities for decommissioning, installing, exchanging and commissioning smart gas meters and regulators (up to 6.0m³/h) on medium pressure fed natural gas systems									
1.1	identify and agree the customer's job requirements								
1.2	compare the customer's job requirements with statutory and national standards identifying any conflicting issues								
1.3	survey the work site for any features that could affect the installation								
1.4	check all required materials, tools and equipment are available, fit for purpose and adequately stored when not in use								
1.5	complete site specific risk assessments in line with health and safety regulations and national standards								
1.6	select, inspect and wear appropriate personal protective equipment (PPE)								
1.7	apply correct measures to protect the work site and the building fabric against possible damage being caused during the job								
1.8	check adequate services are available and the gas supply, existing main equipotential bonding and ventilation meets national standards' requirements for meter installation								
1.9	check the siting of the gas meter, regulator, relief vent pipe, meter housing and other associated components meets national standards' requirements for location, siting and clearances								
1.10	identify whether the installation is a primary or secondary meter								
1.11	identify whether the upstream supply is low or medium pressure and, if medium pressure, which pressure tier								
1.12	check the siting of the emergency control valve (ECV) and meter inlet valve (MIV) is accessible, correctly labelled and operates correctly								
1.13	check existing installation for unsafe situations, and where necessary apply industry unsafe situations procedures correctly								
1.14	test for the presence of voltage at the meter with a suitable voltage sensing device								
1.15	explain the actions to be taken where defects or deficiencies are identified during pre-installation surveys.								

Type of evidence è									
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O = Observation Q = Oral Question (OQ) or Written Question & Answer (WQ) S = Simulation/RWE
 WT = Witness testimony

Performance evidence required		Portfolio Reference Number (PRN)							
2. Be able to de-commission smart gas meters and regulators (up to 6.0m³/h) on medium pressure fed natural gas systems									
2.1	check the existing installation permits safe de-commissioning								
2.2	select and use correct tools and equipment for de-commissioning activities								
2.3	carry out tightness testing in accordance with current national standards prior to commencing work								
2.4	use designated safe isolation methods, tests and procedures to de-commission the meter installation								
2.5	take precautionary actions to ensure that temporarily de-commissioned gas meters, regulators, equipotential bonding, gas installations and associated components do not present a safety hazard								
2.6	disconnect and remove gas meters, regulators, relief vent pipes, and other associated components ensuring the installation is safe								
2.7	mark any live gas pipes, after permanent removal of a meter, with a notice to indicate the pipe contains gas.								
Type of evidence è									

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 WT = Witness testimony

Performance evidence required		Portfolio Reference Number (PRN)							
3. Be able to install and exchange smart gas meters and regulators (up to 6.0m³/h) on medium pressure fed natural gas systems									
3.1	carry out planned preparatory work to meet the meter installation and exchange requirements								
3.2	select and use correct tools and equipment for the meter installation and exchange activities								
3.3	check existing installation, new gas meter, regulator, relief vent pipe and other associated components for any damage								
3.4	check seals are intact, packaging is removed and gas ways are clear								
3.5	assemble and position the gas meter, regulator, relief vent pipe and other associated components and confirm it meets national standards								
3.6	carry out tightness testing and purging procedures in accordance with national standards								
3.7	check for adequate main equipotential bonding to the gas installation								
3.8	explain the actions to be taken if main equipotential bonding is inadequate								

3.9	apply all necessary labels to the meter installation							
3.10	label and disconnect or seal off from the gas supply with an appropriate fitting, gas equipment where they are not to be commissioned immediately							
3.11	explain where non return valves may be used in conjunction with a meter installation.							
Type of evidence è								

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WT = Witness testimony**

Performance evidence required	Portfolio Reference Number (PRN)							
4. Be able to commission smart gas meters and regulators (up to 6.0m³/h) on medium pressure fed natural gas systems								
4.1	check meter installation has been installed in accordance with national standards							
4.2	select and use correct tools and equipment for the meter installation commissioning activities							
4.3	check the installations operating pressure at the meter and / or regulator outlet is in accordance with national standards							
4.4	check the safe operation of all meter and regulator controls including emergency control valve, meter inlet valve, over pressure shut off, under pressure shut off, excess flow valve and other safety devices in accordance with national standards							
4.5	relight any existing appliances							
4.6	instruct the customer in the use of the gas meter , regulator and other associated components, providing them with all instructions							
4.7	complete all necessary documentation including confirming the safe commissioning of the gas meter, regulator and other associated components							
4.8	safely handle, collect and dispose of all waste, including components that may be hazardous to health or the environment in line with national standards							
4.9	work in accordance with relevant health, safety, environmental and national standards throughout the entire job.							
Type of evidence è								

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WT = Witness testimony**

Performance evidence required	Portfolio Reference Number (PRN)							
5. Be able to liaise with other persons and resolve problems relating to decommissioning, installing, exchanging and commissioning smart gas meters and regulators (up to 6.0m³/h) on medium pressure fed natural gas systems								
5.1	communicate with customers, line managers or other appropriate person throughout the job							
5.2	identify any deficiencies, unsafe or 'not to current standards' situations that may exist, and rectify or apply industry unsafe situations procedure							
5.3	identify an unsafe situation and apply industry unsafe situations procedure							
5.4	resolve problems encountered during the job, referring matters that cannot be resolved to appropriate person(s).							
Type of evidence è								

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Appendix 1 Summary of City & Guilds Assessment Policies

Health and Safety

All City & Guilds centres have to make sure that they provide a safe and healthy environment for training, including induction and assessment. City & Guilds Qualification Consultants check this when they visit assessment centres.

You are responsible for making sure that you understand, and comply with, the Health and Safety practices and policies in the workplace where you will be assessed. Your assessment may be stopped if you do not comply, and your assessor will explain the problem to you. You may need to retake your assessment at a later date.

Equal Opportunities

Your centre will have an equal opportunities policy. Your centre will explain this to you during your induction, and may give you a copy of the policy.

The City & Guilds equal opportunities policy is available from our website www.cityandguilds.com, City & Guilds Customer Relations Team or your centre.

Access to assessment

City & Guilds NVOs are open to all candidates, whatever their gender, race, creed, age or special needs. Some candidates may need extra help with their assessment, for example, a person with a visual impairment may need a reader.

If you think you will need alternative assessment arrangements because you have special needs, you should discuss this with your centre during your induction, and record this on your assessment plan. City & Guilds will allow centres to make alternative arrangements for you if you are eligible and if the NVQ allows for this. This must be agreed before you start your NVQ.

The City & Guilds guidance and regulations document *Access to assessment and qualifications* is available on the City & Guilds website www.cityandguilds.com, from the City & Guilds Customer Relations Team or your centre.

Complaints and appeals

Centres must have a policy and procedure to deal with any complaints you may have. You may feel you have not been assessed fairly, or may want to appeal against an assessment decision if you do not agree with your assessor.

These procedures will be explained during induction and you will be provided with information about the Quality Assurance Co-ordinator within your centre who is responsible for this.

Most complaints and appeals can be resolved within the centre, but if you follow the centre procedure and are still not satisfied you can complain to City & Guilds.

Our complaints policy is on our website www.cityandguilds.com or is available from the City & Guilds Customer Relations Team or your centre.

City & Guilds
Believe you can



www.cityandguilds.com

Useful contacts

UK learners
General qualification information T: +44 (0)844 543 0033
E: learnersupport@cityandguilds.com

International learners
General qualification information T: +44 (0)844 543 0033
F: +44 (0)20 7294 2413
E: intcg@cityandguilds.com

Centres
Exam entries, Registrations/enrolment, Certificates, Invoices, Missing or late exam materials, Nominal roll reports, Results T: +44 (0)844 543 0000
F: +44 (0)20 7294 2413
E: centresupport@cityandguilds.com

Single subject qualifications
Exam entries, Results, Certification, Missing or late exam materials, Incorrect exam papers, Forms request (BB, results entry), Exam date and time change T: +44 (0)844 543 0000
F: +44 (0)20 7294 2413
F: +44 (0)20 7294 2404 (BB forms)
E: singlesubjects@cityandguilds.com

International awards
Results, Entries, Enrolments, Invoices, Missing or late exam materials, Nominal roll reports T: +44 (0)844 543 0000
F: +44 (0)20 7294 2413
E: intops@cityandguilds.com

Walled Garden
Re-issue of password or username, Technical problems, Entries, Results, GOLLA, Navigation, User/menu option, Problems T: +44 (0)844 543 0000
F: +44 (0)20 7294 2413
E: walledgarden@cityandguilds.com

Employer
Employer solutions, Mapping, Accreditation, Development Skills, Consultancy T: +44 (0)121 503 8993
E: business_unit@cityandguilds.com

Publications
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F: +44 (0)20 7294 2413

If you have a complaint, or any suggestions for improvement about any of the services that City & Guilds provides, email:
feedbackandcomplaints@cityandguilds.com

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