



ENERGY &
ENVIRONMENT
AWARDS

Skills for a greener world

EEA Level 3 End-point Assessment for Maintenance and
Operations Engineering Technician
(Electrical System and Process Control)

Supporting Documents

QAN 610/6007/0

ST0154 AP02 V1.0 V1.1 V1.2 V1.3

Supporting Documents for

EEA Level 3 End-point Assessment for Maintenance and Operations Engineering Technician (Electrical System and Process Control)

QAN 610/6007/0 V1.0 – V1.3

Updates to the supporting documents	3
Appendix A: Glossary	4
Appendix B: Gateway Eligibility Form.....	5
Appendix D - Practical Observation and Planning Form.....	26
Appendix E: Practice Practical Observation Template	30
Appendix F: Practice Technical Interview Template	61
Appendix G: Portfolio Mapping Document.....	83

Updates to the supporting documents

Since the first publication of Energy & Environment Awards Maintenance and Operations Engineering Technician Supporting Documents Electrical System and Process Control, the following updates have been made.

Version	Date first published	Section updated	Page(s)
v5.0	April 2026	Appendix F: Practice Technical Interview Template	61
v4.0	August 2025	Rebranded	All
v3.0	2023	Appendix C: Sample Answer Sheet	25
		Appendix G: Replaced (Assessor Use Only) with (Apprentice Input)	83 - 86
		Footer for V2.0 below stated V3.0 this has been removed. This version is v3.0	All
v2.0	2023	New template and rebranded	All
v1.0	2020	First published	All

Appendix A: Glossary

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

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

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

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

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

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

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

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

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

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

Appendix B: Gateway Eligibility Form

(Standard Version: ST0154 V1.0 – V1.3; Assessment Plan Version:
ST0154/AP02/V1.0 – V1.3)

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

Apprentice's details

Eligibility requirements:

The apprentice must confirm their achievement of the following:

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

Eligibility requirement	Achieved by the apprentice? Y/N	Evidence (Scans of certificates MUST be included)
Achieved Level 2 English		
Achieved Level 2 Maths		
Satisfactory completion of the formal training plan agreed with apprentice by the employer		
Compiled and submitted a portfolio of evidence, on which the technical interview will be based on		

Gateway Eligibility Declaration

The apprentice, the employer and the training provider must sign this form to confirm that they understand and agree to the following:

1. The apprentice has completed the required on-programme elements of the apprenticeship and is ready for end-point assessment with Energy & Environment Awards.
2. The apprentice will only submit their own work as part of end-point assessment.
3. All parties agree that end-point assessment evidence may be recorded and stored by Energy & Environment Awards for quality assurance purposes.
4. The apprentice has been on-programme for a minimum duration of 365 days.
5. The apprentice has achieved English and maths Level 2 as detailed in this document.
6. The apprentice satisfactorily completed a formal training plan agreed by the employer.
7. The apprentice has produced compiled and submitted a portfolio of evidence, on which the technical interview will be based on.
8. The apprentice, if successful, gives permission for Energy & Environment

Awards to request the apprenticeship. certificate from the ESFA who issue the certificate on behalf of the Secretary of State.

9. The apprentice has been directed to Energy & Environment Awards Appeals Policy and Complaints Policy.
10. The employer/training provider has given Energy & Environment Awards at least three months' notice of requesting this EPA for this apprentice.
11. If the Gateway Eligibility Report is not completed in full, meeting all requirements, and submitted to Energy & Environment Awards, the end-point assessment cannot take place.

Signed on behalf of the employer (print name):	Signature:	Date:
Signed on behalf of the training provider (print name):	Signature:	Date:
Apprentice's name (print):	Signature:	Date:

Energy & Environment Awards use only:	
Energy & Environment Awards Sign off:	
Comments/actions:	

Appendix C: Practice Knowledge Assessments: Electrical System and Process Control

Level: 3

Maintenance and Operations Engineering Technician

Pathway: Electrical System and Process Control

Paper Code: Practice Paper

This examination consists of 30 multiple-choice questions.

The Pass mark is 18 correct answers.

The Merit mark is 23 correct answers.

A mark of 26 or more is a Distinction.

The duration of this examination is 45 minutes.

You must use a **pencil** to complete the answer sheet - pens must NOT be used.

When completed, please leave the examination answer sheet and question paper on the desk.

For this paper the use of a scientific calculator (non-programmable) is permitted.

For each question, fill in ONE answer ONLY.

If you make a mistake, ensure you erase it thoroughly.

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

MARKING INSTRUCTIONS	
<input type="radio"/> A <input type="radio"/> B <input type="radio"/> C <input checked="" type="radio"/>	ANSWER COMPLETED CORRECTLY
Examples of how NOT to mark your examination sheet. These will not be recorded	
<input type="radio"/> A <input type="radio"/> B <input type="radio"/> C <input type="radio"/>	DO NOT partially shade the answer circle.
<input type="radio"/> A <input type="radio"/> B <input checked="" type="radio"/> C <input checked="" type="radio"/>	DO NOT use ticks or crosses.
<input type="radio"/> A <input type="radio"/> B <input type="radio"/> C <input type="radio"/>	DO NOT use circles.
<input type="radio"/> A <input type="radio"/> B <input checked="" type="radio"/> <input checked="" type="radio"/>	DO NOT shade over more than one circle.

This paper must be returned to Energy & Environment Awards with the apprentice answer sheets.

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

Question 1

On what type of installation would a technician fit this design of washer?

Possible answers

a)	High corrosion
b)	High temperature
c)	High vibration
d)	High pressure


Question 2

When checking the pressure of a system the maintenance schedule stipulates that the system pressure should be 10 bar with a tolerance of +/- 0.05 bar, what are the minimum and maximum acceptable pressures?

Possible answers

a)	9.95 to 10.05 bar
b)	9.5 to 10.5 bar
c)	9.05 to 10.5 bar
d)	9.005 to 10.005 bar

Question 3

Safety critical equipment should be maintained:

Possible answers

a)	every twelve months
b)	more frequently than non-safety critical equipment
c)	less frequently than non-safety critical equipment
d)	at the same period as safety non-critical equipment

Question 4

Which statement best describes what is meant by the terminology “specification”?

Possible answers

a)	The capacity to endure continuous force
b)	The standard when measured against another object of similar design
c)	Detailed description of the design and materials of an object
d)	The specified point beyond which certification is invalid

Question 5

What type of maintenance is applied when something stops working?

Possible answers

a)	Planned
b)	Preventative
c)	Corrective
d)	Shutdown

Question 6

What do the initials IP followed by 2 numbers refer to when seen on a piece of equipment?

Possible answers

a)	Internal pressure
b)	Integrity protection
c)	Ingress protection
d)	Increased pressure

Question 7

Which of the following is commonly classed as safety critical?

Possible answers

a)	Control valve
b)	Fuse
c)	Steam trap
d)	Drain valve

Question 8

What does the coloured tag on a piece of rigging equipment mean?

Possible answers

a)	Certification period
b)	Safe working load
c)	Maximum working load
d)	Safe to use

Question 9

When seen on site, what does a green safety sign signify?

Possible answers

a)	Mandatory
b)	Prohibited
c)	Information
d)	Warning

Question 10

What document should be fixed to a scaffold before a technician uses it?

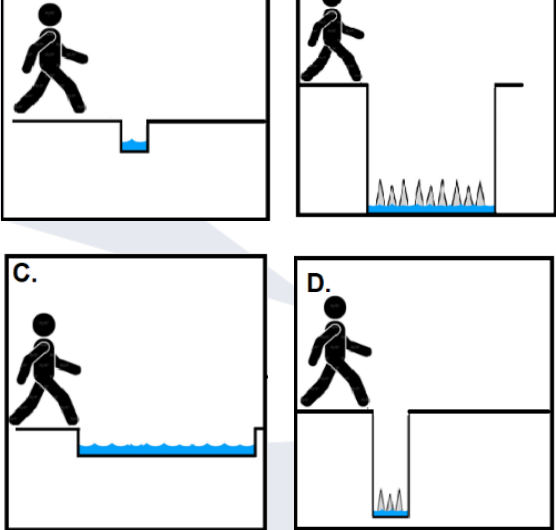
Possible answers

a)	Risk assessment
b)	Safety certificate
c)	Approved Scafftag
d)	Permit to work

Question 11

Looking at the image provided and taking into consideration risk, which task would a technician say is low probability and low in impact?

Possible answers

a)	A	
b)	B	
c)	C	
d)	D	

[Turn to the next page for question 12]

Question 12

When personal protection equipment is identified on the work control document, which of the following statements is correct?

Possible answers

a)	PPE is recommended
b)	PPE is available
c)	PPE is good practice
d)	PPE is mandatory

Question 13

In accordance with HSE regulations, how would a technician know if a substance was regarded as hazardous?

Possible answers

a)	The container will be coloured red
b)	It will be contained in a glass receptacle
c)	It will have a label identifying the hazard
d)	It will give off a strong odour

Question 14

According to the Confined Space Regulations 1997, which of the following locations is not regarded as a confined space?

Possible answers

a)	Storage tank
b)	Termination cabinet
c)	Floor void
d)	Pipe trench

Question 15

In accordance with HSE guidelines, isolations can only be applied by:

Possible answers

a)	competent people
b)	training and authorised people
c)	skilled people
d)	experienced people

Question 16

Which manual handling statement is true?

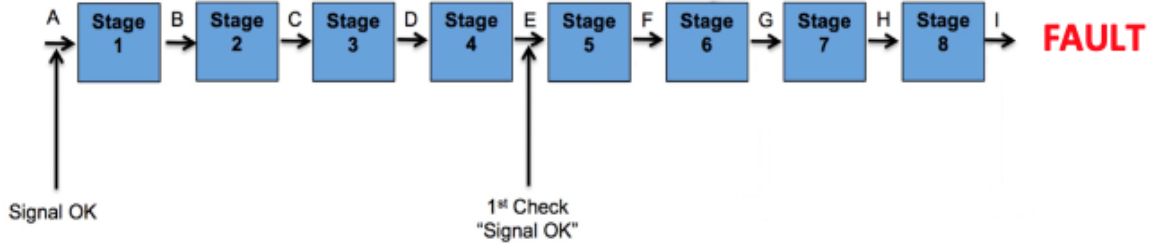
Possible answers

a)	Correct manual handling prevents all accidents
b)	Correct manual handling prevents damage to equipment
c)	Correct manual handling reduces the risk of human injury
d)	Correct manual handling should only be applied in the workplace

[Turn to the next page for question 17]

Question 17

Using the half split principle and referring to image below, at which position should a technician make the next check when fault finding?


Possible answers

a)	Point C
b)	Point F
c)	Point G
d)	Point I

Question 18

What regulation provides guidance on the use of handheld tools?

Possible answers

a)	PUWER
b)	COMAR
c)	LOLER
d)	COSHH

Question 19

What is being measured in this image?

Possible answers

a)	Temperature
b)	Vibration
c)	Pressure
d)	Speed


Question 20

When seen on a British Standard Piping and Instrumentation drawing, what does this symbol represent?

Possible answers

a)	Electrical signal
b)	Pneumatic signal
c)	Hydraulic signal
d)	Instrument signal



Question 21

Ohms law can be expressed as:

Possible answers

a)	$V = I + R$
b)	$V = I \div R$
c)	$V = I \times R$
d)	$V = I - R$

Question 22

What type of sensing device is used on this flow installation?


Possible answers

a)	RF probe
b)	Orifice plate
c)	Venturi tube
d)	Turbine meter

Question 23

What effect would a loose connection have on a 3 wire Resistance Temperature Device temperature loop?

Possible answers

a)	Fluctuating signal	
b)	Low reading	
c)	Static signal	
d)	No effect	

Question 24

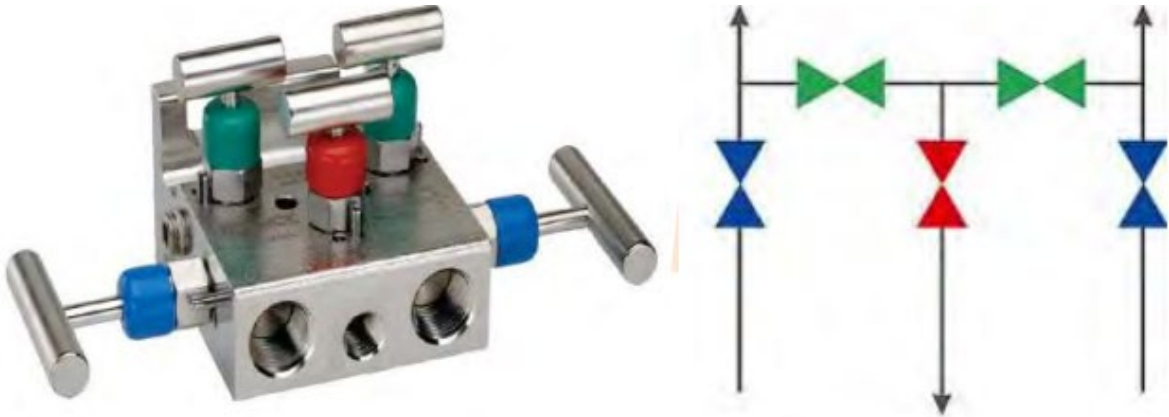
Which ONE of the following hazardous conditions would arise if a loose electrical connection existed on the terminal?

Possible answers

a)	Decrease in temperature
b)	Increase in corrosion
c)	Increase in temperature
d)	Increase in noise

Question 25

On this differential pressure manifold, what is the purpose of the red handle valve?


Possible answers

a)	Isolating pressure to transmitter
b)	Isolating mains pressure
c)	Venting pressure
d)	Equalising pressure

[Turn to the next page for question 26]

Question 26

Assuming a signal range of 4-20 mA. A pressure transmitter with a range of 0-200 mbar is showing a feedback signal of 16mA.

Assuming that the transmitter is calibrated correctly what is the actual line pressure?

Possible answers

a)	100 mbar
b)	120 mbar
c)	150 mbar
d)	160 mbar

Question 27


What is the name given to the process of routinely inspecting electrical appliances?

Possible answers

a)	Resistance testing
b)	PAT testing
c)	Planned maintenance
d)	Breakdown maintenance

[Turn to the next page for question 28]

Question 28	
What does the third wire on a 3 wire Resistance Temperature Device do?	
Possible answers	
a)	Compensates field wire resistance
b)	It acts as a spare sensor wire
c)	It is the power supply wire
d)	Increases lifespan of device



Question 29	
What is the normal output range of a pneumatic transmitter?	
Possible answers	
a)	1 to 1.9 bar
b)	0 to 15 bar
c)	2 to 20 bar
d)	0.2 to 1.0 bar

Question 30	
Following maintenance on a distribution board, how should you re-instate the circuit?	
Possible answers	
a)	By leaving all outgoing circuits on
b)	Leave all outgoing circuits off until asked to re-instate them
c)	By switching all outgoing circuits back on at the same time
d)	By switching all outgoing circuits back on one at a time

End of Questions

Practice Knowledge Assessment

Electrical System and Process Control- Answer scheme

Question	Answer
1	C
2	A
3	B
4	C
5	C
6	C
7	B
8	A
9	C
10	C
11	A
12	D
13	C
14	B
15	B

Question	Answer
16	C
17	C
18	A
19	B
20	B
21	C
22	B
23	A
24	C
25	C
26	C
27	B
28	A
29	D
30	D

SAMPLE ANSWER SHEET

Candidate ID	Attempt
Last Name	
First Name	
Exam Date	Paper
Centre Name	
Centre Number	

MARKING INSTRUCTIONS

Answers should be completed using a HB pencil.

ANSWER COMPLETED CORRECTLY

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

DO NOT partially shade the answer circle.

DO NOT use ticks or crosses.

DO NOT use circles.

DO NOT shade over more than one circle.

1 <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/>	21 <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/>	
2 <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/>	22 <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/>	
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18 <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/>		
19 <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/>		
20 <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/>		

Appendix D - Practical Observation and Planning Form

The practical observation must be designed to meet the requirements of the Maintenance and Operations Engineering Technician standard.

- The apprentice will complete a practical observation during which they will be asked questions by the assessor to confirm their understanding of the rationale for actions taken and choices made during the practical observation
- The content of this practical observation will relate to the specific role they are working towards
- The duration of this activity will typically be no longer than one day and the actual time allowed will be based on the comparable time that an industry competent worker would take to achieve successful task(s) completion
- The employer/training provider must devise a practical observation task(s) sufficiently complex to allow the apprentice to demonstrate the required knowledge and skills

Note that the apprentice is only required to demonstrate the main specialist specific skill covered by the practical, and the observation task must be chosen carefully to ensure that the apprentice has opportunity to cover all aspects of the skill.

The activities will need to be able to provide the evidence identified in the checklist in the form below.

Energy & Environment Awards must review the employer/training provider's practical assessment design. To do this complete the 'Level 3 Practical Observation and Planning Form' and submit to the Service Delivery team, for review 1 month before the start of the end-point assessment.

Level 3 Practical Observation and Planning Form

Employer name and site address	
Training provider (if applicable)	
Standard	Maintenance and Operations Engineering Technician
Pathway	Electrical System and Process Control
Level	3
Location of practical	
Contact Details: Employer/training provider representative, email address and contact number overseeing the setup of the practical (documents and site).	
Energy & Environment Awards Date of review:	

Description of the proposed complex task(s):
Special requirements (for example: access arrangements/PPE):

Equipment/tools required:	Resources required:

Practical Observation Checklist

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

Core Skills	Covered on activity
S1 Comply with industry health, safety and environmental working practices and regulations	<input type="checkbox"/>
S2 Communicate with and provide information to stakeholders in line with personal role and responsibilities	<input type="checkbox"/>
S3 Prepare work areas to undertake work related activities and reinstate those areas after the completion of the work-related activities	<input type="checkbox"/>
S4 Assess and test the performance and condition of plant and equipment	<input type="checkbox"/>
S5 Locate, and rectify faults on plant and equipment	<input type="checkbox"/>
S6 Read, understand and interpret information and work in compliance with technical specifications and supporting documentation	<input type="checkbox"/>
S7 Inspect and maintain appropriate plant and equipment to meet operational requirements	<input type="checkbox"/>
S8 Communicate, handover and confirm that the appropriate engineering process has been completed to specification	<input type="checkbox"/>
Core Behaviours	Covered on activity
B1 Health and Safety - Follows health and safety policies and procedures and be prepared to challenge unsafe behaviour using appropriate techniques to ensure the protection of people and property when working alone and/or with appropriate supervision	<input type="checkbox"/>
B2 Quality focused - Ensures that work achieves quality standard both occupationally and personally	<input type="checkbox"/>
B3 Working with others - Has the ability to work well with people from different disciplines, backgrounds and expertise to accomplish an activity safely and on time	<input type="checkbox"/>
B4 Interpersonal skills - Gets along well with others and takes into account their needs and concerns	<input type="checkbox"/>

B6 Sustainability and ethical behaviour - Behaves ethically and undertakes work in a way that contributes to sustainable development	<input type="checkbox"/>
B7 Risk awareness - Demonstrates high concentration, the desire to reduce risks, ability to be compliant and awareness of change, through regular monitoring and checking of information	<input type="checkbox"/>
PLUS select the MAIN Specialist Skill covered by the practical	Covered on activity
Pathway: Electrical System and Process Control Specialist Skills	
EP1 Position, assemble, install and dismantle integrated electrical apparatus, systems and process control equipment	<input type="checkbox"/>
EP2 Carry out planned, unplanned and preventative maintenance procedures on integrated plant and equipment	<input type="checkbox"/>
EP3 Replace, repair and/or remove components within integrated plant and equipment and ensure its return to operational condition	<input type="checkbox"/>
EP4 Diagnose determine the cause of faults within integrated plant and equipment	<input type="checkbox"/>
EP5 Calibrate and configure integrated electrical apparatus, systems and process control equipment	<input type="checkbox"/>
Estimated total duration of practical (must be a minimum of 4 hours)	

Remember:

- The specific detail of the tasks to be undertaken should be **kept confidential from the apprentices**
- You will require differing tasks where you have more than one apprentice to be assessed

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

Expand the box if required.

Energy & Environment Awards Office use only

Date received	
Date signed off	

Appendix E: Practice Practical Observation Template

This document is for use by the person from the employer/training provider playing the role of the assessor during the practice practical observation. It is designed to help replicate the live assessment experience and to enable feedback to be provided to the apprentice.

Full Name of Apprentice	
Location(s) of Practice Practical Observation	
Full Name of Assessor	
Date of Practice Practical Observation	
Start Time	
End Time	
Assessor - Additional comments:	

Please indicate the apprentice's practice practical observation grade (F/P/M/D):	Grade

Please Note:

Pass: Each criteria must be met to achieve a pass.

Merit or Distinction: All Pass criteria must be achieved PLUS a minimum number of merit and distinction as described in Section 3 in this specification.

Fail: The apprentice does not demonstrate the pass criteria.

S1 Comply with industry health, safety and environmental working practices and regulations

Pass Criteria – All to be met		Merit Criteria – Minimum two to be met		Distinction Criteria – Minimum two to be met	
<ul style="list-style-type: none"> • Demonstrate a clear understanding of their own health, safety and environmental responsibilities and that of others • Comply with the required health, safety and environmental working practices and regulations • Conduct a suitable risk assessment and proactively identify workplace hazards • Inspect and wear the correct personal protective equipment (PPE) required to carry out the activity • Inform other relevant parties of matters affecting them where required 	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<ul style="list-style-type: none"> • Demonstrate a deeper understanding of the health, safety and environmental implications of the work e.g. potential effect of failure to comply, environmental, social, financial, company impact • Take a lead role in managing the site safety of self and others • Consistently demonstrate compliance with safety requirements and make suggestions to reduce risks • Identify poor/bad practice in relation to work activities and address the situation 	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<ul style="list-style-type: none"> • Demonstrate exemplary health, safety and environmental knowledge and performance throughout the activity • Identify health, safety and environmental deficiencies and implement appropriate solutions • Challenge unsafe behaviour/ practices using appropriate techniques • Pre-empt risks prior to task commencement and puts actions in place to prevent them occurring • Demonstrate the ability to take a lead in accepting additional responsibility and autonomy to improve safety standards 	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>

S2 Communicate with and provide information to stakeholders in line with personal role and responsibilities				
Pass Criteria – All to be met		Merit Criteria – Minimum two to be met		Distinction Criteria – Minimum two to be met
line with company policies/procedures				
Assessor must ask the following standardised questions.		Assessor must record all additional questions asked for clarification and the responses provided by the apprentice including examples.		Recording timeline.
Questions <i>Develop some open ended questions</i>				Mark awarded.

S3 Prepare work areas to undertake work related activities and reinstate those areas after the completion of the work-related activities				
Pass Criteria – All to be met		Merit Criteria – Minimum two to be met		Distinction Criteria – Minimum two to be met
Demonstrate an understanding of the importance of good preparation and the potential outcomes of poor preparation	<input type="checkbox"/>	<ul style="list-style-type: none"> Take a lead role in the preparation of the work area proactively informing others on matters which affect them 	<input type="checkbox"/>	<ul style="list-style-type: none"> Demonstrate a deeper understanding of the implications of good and poor work preparation. e.g. In terms of cost, time, value, company reputation etc <input type="checkbox"/>
Inspect and prepare the work area and equipment to be	<input type="checkbox"/>	<ul style="list-style-type: none"> Produce a detailed work plan to support the organisation of the work, including 	<input type="checkbox"/>	

S3 Prepare work areas to undertake work related activities and reinstate those areas after the completion of the work-related activities				
Pass Criteria – All to be met		Merit Criteria – Minimum two to be met		Distinction Criteria – Minimum two to be met
<p>worked on in line with company policies/procedures <input type="checkbox"/></p> <p>Identify and implement any special precautions required by the work activity or environment, where required <input type="checkbox"/></p> <p>Maintain good housekeeping practices and a safe working environment throughout the activity <input type="checkbox"/></p> <p>Store tools, equipment, materials in a suitable/secure position and dispose of waste products in line with company policies and Health Safety and Environmental regulations <input type="checkbox"/></p> <p>Reinstate the work area to ensure it is left in a safe and</p>		<p>measures to deal with contingencies <input type="checkbox"/></p> <ul style="list-style-type: none"> Demonstrate their ability to develop positive professional relationships with individuals to support the work activity <input type="checkbox"/> Make valid suggestions/ recommendations to improve the planning/preparation of the work activity 	<ul style="list-style-type: none"> Demonstrate the ability to take a lead in accepting additional responsibility and autonomy to achieve/improve the work being undertaken <input type="checkbox"/> 	

S3 Prepare work areas to undertake work related activities and reinstate those areas after the completion of the work-related activities				
Pass Criteria – All to be met		Merit Criteria – Minimum two to be met		Distinction Criteria – Minimum two to be met
secure condition e.g. locks, notices, documentation				
Assessor must ask the following standardised questions.		Assessor must record all additional questions asked for clarification and the responses provided by the apprentice including examples.		Recording timeline.
Questions <i>Develop some open ended questions</i>				Mark awarded.

S4 Assess and test the performance and condition of plant and equipment				
Pass Criteria – All to be met		Merit Criteria – Minimum two to be met		Distinction Criteria – Minimum two to be met
Demonstrate a clear understanding of the company polices/procedures for the assessment and testing of plant and equipment to be worked on		<input type="checkbox"/>	Demonstrate a detailed technical knowledge of the range of tests available and their specific purpose	<input type="checkbox"/>
Demonstrate a clear understanding of the types and purpose of testing procedures		<input type="checkbox"/>	Take a pro-active, leading role in the testing activity providing clear guidance on the results obtained	<input type="checkbox"/>
				<ul style="list-style-type: none"> Demonstrate a deeper technical understanding of testing procedures and the analysis of results. e.g. testing parameters, performance indicators etc. Demonstrate the ability to take a lead in accepting additional

S4 Assess and test the performance and condition of plant and equipment				
Pass Criteria – All to be met		Merit Criteria – Minimum two to be met		Distinction Criteria – Minimum two to be met
<p>for the plant and equipment to be worked on</p> <p>Assess and test the plant/ equipment to be worked on in line with company procedures</p> <p>Use the correct tools, equipment and techniques to conduct testing in line with company procedures</p> <p>Accurately interpret the results of the tests conducted</p> <p>Record/report the results of the testing in line with company procedures</p>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<p>Make recommendations/ suggestions to improve testing efficiencies</p> <p>Demonstrate a detailed technical knowledge of the outcome of testing procedures and the implications of results obtained</p>	<input type="checkbox"/>	<p>responsibility and autonomy to achieve/improve the work being undertaken</p>
<p>Assessor must ask the following standardised questions.</p>		<p>Assessor must record all additional questions asked for clarification and the responses provided by the apprentice including examples.</p>		<p>Recording timeline.</p>
				<p>Mark awarded.</p>

S4 Assess and test the performance and condition of plant and equipment			
Pass Criteria – All to be met	Merit Criteria – Minimum two to be met	Distinction Criteria – Minimum two to be met	
Questions <i>Develop some open ended questions</i>			

S5 Locate, and rectify faults on plant and equipment				
Pass Criteria – All to be met		Merit Criteria – Minimum two to be met		Distinction Criteria – Minimum two to be met
fault rectification has been successful <ul style="list-style-type: none"> Record the results/outcomes of rectification work in line with company requirements 	<input type="checkbox"/>			
Assessor must ask the following standardised questions.		Assessor must record all additional questions asked for clarification and the responses provided by the apprentice including examples.		Recording timeline.
Questions <i>Develop some open ended questions</i>				Mark awarded.

S6 Read, understand and interpret information and work in compliance with technical specifications and supporting documentation				
Pass Criteria – All to be met		Merit Criteria – Minimum two to be met		Distinction Criteria – Minimum two to be met
<ul style="list-style-type: none"> Read and correctly interpret a range of technical information provided to plan and conduct the work 	<input type="checkbox"/>	<ul style="list-style-type: none"> Demonstrate a detailed knowledge of the range and purpose of the technical information available 	<input type="checkbox"/>	

S6 Read, understand and interpret information and work in compliance with technical specifications and supporting documentation

Pass Criteria – All to be met	Merit Criteria – Minimum two to be met	Distinction Criteria – Minimum two to be met
<ul style="list-style-type: none"> • Demonstrate a clear understanding of the purpose and use of the technical information provided for the work <input type="checkbox"/> • Use and refer to the technical information provided to check/confirm the work conducted meets the required company standards/specifications <input type="checkbox"/> • Where necessary, question/clarify any information which is not clearly understood <input type="checkbox"/> • Complete any technical or supporting documentation in line with company policies/procedures <input type="checkbox"/> 	<ul style="list-style-type: none"> • Identify inaccuracies/deficiencies in the technical information provided and resolve/report the situation <input type="checkbox"/> • Challenge in a professional manner any areas of concern to clarify understanding <input type="checkbox"/> • Identify/suggest methods of improving the system/use of information <input type="checkbox"/> 	

S7 Inspect and maintain appropriate plant and equipment to meet operational requirements

Assessor must ask the following standardised questions.	Assessor must record all additional questions asked for clarification and the responses provided by the apprentice including examples.	Recording timeline.	Mark awarded.
Questions <i>Develop some open ended questions</i>			

S8 Communicate, handover and confirm that the appropriate engineering process has been completed to specification

Pass Criteria – All to be met	Merit Criteria – Minimum two to be met	Distinction Criteria – Minimum two to be met
<ul style="list-style-type: none"> • Demonstrate a clear understanding of their role and responsibilities in returning the system/equipment back to operational service <input type="checkbox"/> • Provide an accurate technical explanation of the company's handover procedure <input type="checkbox"/> • Complete the required checks/tests to confirm the equipment meets the <input type="checkbox"/> 	<ul style="list-style-type: none"> • Demonstrate a detailed understanding of the factors which can support and influence a smooth handover of equipment <input type="checkbox"/> • Take a pro-active lead in effectively communicating the detail of handover arrangements with stakeholders <input type="checkbox"/> • Demonstrate their ability to develop positive professional <input type="checkbox"/> 	<ul style="list-style-type: none"> • Demonstrate the ability to take a lead in accepting additional responsibility and autonomy to achieve/improve the handover process <input type="checkbox"/> • Consult and involve team members and/or other relevant persons to achieve greater understanding and improved performance <input type="checkbox"/> • Demonstrate the ability to build positive relationships and actively address <input type="checkbox"/>

S8 Communicate, handover and confirm that the appropriate engineering process has been completed to specification

Pass Criteria – All to be met		Merit Criteria – Minimum two to be met		Distinction Criteria – Minimum two to be met	
company operational requirements for handover <ul style="list-style-type: none"> • Conduct the handover in compliance with all relevant policies and procedures • Clearly communicate the details of the handover including any additional requirements to the relevant parties • Complete all relevant reporting/recording documentation in line with company procedures • Leave the work area in a safe/secure condition for others 	<input type="checkbox"/> <input type="checkbox"/>	relationships with individuals to support handover process <ul style="list-style-type: none"> • Confidently lead the handover process taking charge of the operation and resolving any issues within their role responsibility • Adapts the method and style of communications to changing circumstances and need 	<input type="checkbox"/> <input type="checkbox"/>	conflict/resolve problems with positive outcomes <ul style="list-style-type: none"> • Demonstrate their ability to effectively communicate technical information across a wide range of stakeholders e.g. colleagues, management, briefings/meetings, external clients 	<input type="checkbox"/>

S8 Communicate, handover and confirm that the appropriate engineering process has been completed to specification

Assessor must ask the following standardised questions.	Assessor must record all additional questions asked for clarification and the responses provided by the apprentice including examples.	Recording timeline.	Mark awarded.
Questions <i>Develop some open ended questions</i>			

B1 Health and Safety

Pass Criteria – All to be met	Merit Criteria – Minimum two to be met	Distinction Criteria – Minimum two to be met	
<ul style="list-style-type: none"> Follows health and safety policies and procedures and be prepared to challenge unsafe behaviour using appropriate techniques to ensure the protection of people and property when working alone and/or with appropriate supervision 	<input type="checkbox"/>		
Assessor must ask the following standardised questions.	Assessor must record all additional questions asked for clarification and the responses provided by the apprentice including examples.	Recording timeline.	Mark awarded.

B1 Health and Safety

Questions

Develop some open ended questions

B2 Quality focused

Pass Criteria – All to be met

- Ensures that work achieves quality standard both occupationally and personally

Merit Criteria – Minimum two to be met

Distinction Criteria – Minimum two to be met

Assessor must ask the following standardised questions.

Assessor must record all additional questions asked for clarification and the responses provided by the apprentice including examples.

Recording timeline.

Mark awarded.

Questions

Develop some open ended questions

B3 Working with others				
Pass Criteria – All to be met		Merit Criteria – Minimum two to be met	Distinction Criteria – Minimum two to be met	
<ul style="list-style-type: none"> Has the ability to work well with people from different disciplines, backgrounds and expertise to accomplish an activity safely and on time 	<input type="checkbox"/>			
Assessor must ask the following standardised questions.		Assessor must record all additional questions asked for clarification and the responses provided by the apprentice including examples.	Recording timeline.	Mark awarded.
Questions <i>Develop some open ended questions</i>				

B4 Interpersonal skills				
Pass Criteria – All to be met		Merit Criteria – Minimum two to be met	Distinction Criteria – Minimum two to be met	
<ul style="list-style-type: none"> Gets along well with others and takes into account their needs and concerns 	<input type="checkbox"/>			

B4 Interpersonal skills			
Assessor must ask the following standardised questions.	Assessor must record all additional questions asked for clarification and the responses provided by the apprentice including examples.	Recording timeline.	Mark awarded.
Questions <i>Develop some open ended questions</i>			

B6 Sustainability and ethical behaviour			
Pass Criteria – All to be met	Merit Criteria – Minimum two to be met	Distinction Criteria – Minimum two to be met	
<ul style="list-style-type: none"> Behaves ethically and undertakes work in a way that contributes to sustainable development <input type="checkbox"/>			
Assessor must ask the following standardised questions.	Assessor must record all additional questions asked for clarification and the responses provided by the apprentice including examples.	Recording timeline.	Mark awarded.
Questions <i>Develop some open ended questions</i>			

B7 Risk awareness				
Pass Criteria – All to be met		Merit Criteria – Minimum two to be met		Distinction Criteria – Minimum two to be met
<ul style="list-style-type: none"> • Demonstrates high concentration, the desire to reduce risks, ability to be compliant and awareness of change, through regular monitoring and checking of information 	<input type="checkbox"/>			
Assessor must ask the following standardised questions.		Assessor must record all additional questions asked for clarification and the responses provided by the apprentice including examples.		Recording timeline.
Questions <i>Develop some open ended questions</i>				Mark awarded.

Pathway: Electrical System and Process Control Role Specialist Skills

EP1 Position, assemble, install and dismantle integrated electrical apparatus, systems and process control equipment				
Pass Criteria – All to be met		Merit Criteria – Minimum two to be met		Distinction Criteria – Minimum two to be met
<ul style="list-style-type: none"> • Demonstrate a clear understanding of their role and responsibilities in 	<input type="checkbox"/>	<ul style="list-style-type: none"> • Demonstrate a detailed technical knowledge of the 	<input type="checkbox"/>	<ul style="list-style-type: none"> • Demonstrate deeper technical/commercial knowledge of the

EP1 Position, assemble, install and dismantle integrated electrical apparatus, systems and process control equipment				
Pass Criteria – All to be met		Merit Criteria – Minimum two to be met		Distinction Criteria – Minimum two to be met
responsibilities, where necessary	<input type="checkbox"/>			
<ul style="list-style-type: none"> Complete the required checks and tests to confirm the work meets the accuracy, finish and quality standards required 				
Assessor must ask the following standardised questions.		Assessor must record all additional questions asked for clarification and the responses provided by the apprentice including examples.		Recording timeline.
Questions <i>Develop some open ended questions</i>				Mark awarded.

EP2 Carry out planned, unplanned and preventative maintenance procedures on integrated plant and equipment				
Pass Criteria – All to be met		Merit Criteria – Minimum two to be met		Distinction Criteria – Minimum two to be met
<ul style="list-style-type: none"> Demonstrate a clear understanding of their role and responsibilities in relation to the work to be conducted 	<input type="checkbox"/>	<ul style="list-style-type: none"> Demonstrate a detailed understanding of the process and principles of preventative maintenance 	<input type="checkbox"/>	<ul style="list-style-type: none"> Demonstrate deeper technical/commercial knowledge of the maintenance operation being undertaken e.g. installation costs,
				<input type="checkbox"/>

EP2 Carry out planned, unplanned and preventative maintenance procedures on integrated plant and equipment

Pass Criteria – All to be met		Merit Criteria – Minimum two to be met		Distinction Criteria – Minimum two to be met	
<ul style="list-style-type: none"> • Provide an accurate technical explanation for the purpose of the maintenance work <input type="checkbox"/> • Demonstrate a clear plan for the work to be undertaken and an understanding of any safety/ technical information given <input type="checkbox"/> • Use tools and equipment to competently achieve the quality standards required by the company in a timely manner <input type="checkbox"/> • Conduct the work in compliance with all relevant regulatory requirements and company policies and procedures <input type="checkbox"/> • Deal effectively with any issues within their role <input type="checkbox"/> 		<ul style="list-style-type: none"> • Pro-actively works with others to identify areas for improvement and follows through on agreed implementation <input type="checkbox"/> • Make recommendations/ suggestions to improve work efficiencies <input type="checkbox"/> • Produce a detailed work plan to support the maintenance operation including measures to deal with contingencies <input type="checkbox"/> 		<ul style="list-style-type: none"> technical requirements, planning, corrective/preventative <input type="checkbox"/> • Identify and implement tangible changes that improve the efficiency of the work being conducted <input type="checkbox"/> • Identify and take action to report or deal with issues of nonconformity/compliance <input type="checkbox"/> • Demonstrate the ability to take a lead in accepting additional responsibility and autonomy to achieve/improve the work being undertaken <input type="checkbox"/> 	

EP2 Carry out planned, unplanned and preventative maintenance procedures on integrated plant and equipment				
Pass Criteria – All to be met		Merit Criteria – Minimum two to be met		Distinction Criteria – Minimum two to be met
responsibilities, where necessary				
<ul style="list-style-type: none"> Complete the required checks and tests to confirm the work meets the accuracy, finish and quality standards required 				
Assessor must ask the following standardised questions.		Assessor must record all additional questions asked for clarification and the responses provided by the apprentice including examples.		Recording timeline.
Questions <i>Develop some open ended questions</i>				Mark awarded.

EP3 Replace, repair and/or remove components within integrated plant and equipment and ensure its return to operational condition				
Pass Criteria – All to be met		Merit Criteria – Minimum two to be met		Distinction Criteria – Minimum two to be met
<ul style="list-style-type: none"> Demonstrate a clear understanding of their role and responsibilities in 	<input type="checkbox"/>	<ul style="list-style-type: none"> Demonstrate a detailed understanding of the causes 	<input type="checkbox"/>	<ul style="list-style-type: none"> Demonstrate deeper technical/commercial knowledge of the repair/replacement work being
				<input type="checkbox"/>

EP3 Replace, repair and/or remove components within integrated plant and equipment and ensure its return to operational condition

Pass Criteria – All to be met		Merit Criteria – Minimum two to be met		Distinction Criteria – Minimum two to be met	
<p>relation to the work to be conducted</p> <ul style="list-style-type: none"> • Provide an accurate technical explanation for the purpose of the maintenance work • Demonstrate a clear plan for the work to be undertaken and an understanding of any safety/technical information given • Use tools and equipment to competently carry out the removal/replacement of components in a logical sequence and timely manner • Conduct the work in compliance with all relevant 	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<p>and principles of component degradation</p> <ul style="list-style-type: none"> • Demonstrate a detailed understanding of the limits/restrictions of component replacement or repair e.g. In terms of reliability, certification of instruments/systems etc. • Pro-actively works with others to identify areas for improvement and follows through on agreed implementation • Make recommendations/suggestions to improve work efficiencies • Produce a detailed work plan to support the maintenance operation including measures to deal with contingencies 	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<p>undertaken e.g. costs, effect on maintenance periods, equipment sustainability</p> <ul style="list-style-type: none"> • Identify and implement tangible changes that improve the efficiency of the work being conducted • Identify and take action to report or deal with issues of nonconformance/compliance • Demonstrate the ability to take a lead in accepting additional responsibility and autonomy to achieve/improve the work being undertaken 	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>

EP3 Replace, repair and/or remove components within integrated plant and equipment and ensure its return to operational condition

Pass Criteria – All to be met		Merit Criteria – Minimum two to be met		Distinction Criteria – Minimum two to be met	
regulatory requirements and company procedures • Deal effectively with any issues within their role responsibilities, where necessary • Complete the required checks and tests to confirm the work meets the accuracy, finish and quality standards required	<input type="checkbox"/>				
Assessor must ask the following standardised questions.		Assessor must record all additional questions asked for clarification and the responses provided by the apprentice including examples.		Recording timeline.	Mark awarded.
Questions <i>Develop some open ended questions</i>					

EP4 Diagnose and determine the cause of faults within integrated plant and equipment				
Pass Criteria – All to be met		Merit Criteria – Minimum two to be met		Distinction Criteria – Minimum two to be met
<ul style="list-style-type: none"> • Correctly analyse and interpret the results of the fault-finding techniques conducted • Conduct the work in compliance with all relevant regulatory requirements and company policies and procedures • Complete the required checks and tests to confirm the work meets the accuracy, finish and quality standards required 	<input type="checkbox"/>			
Assessor must ask the following standardised questions.		Assessor must record all additional questions asked for clarification and the responses provided by the apprentice including examples.		Recording timeline.
Questions <i>Develop some open ended questions</i>				Mark awarded.

EP5 Calibrate and configure integrated electrical apparatus, systems and process control equipment

Pass Criteria – All to be met		Merit Criteria – Minimum two to be met		Distinction Criteria – Minimum two to be met	
<ul style="list-style-type: none"> • Demonstrate a clear understanding of their role and responsibilities for the calibration/configuration activity to be undertaken <input type="checkbox"/> • Provide an accurate technical explanation for the purpose and process of the calibration work <input type="checkbox"/> • Demonstrate a clear plan which takes into consideration the effects of calibration on the operation of interacting systems <input type="checkbox"/> • Competently use the correct tools, equipment and technical data technical data to calibrate and configure instruments and/or systems in a timely manner <input type="checkbox"/> • Conduct the required tests/checks to confirm the <input type="checkbox"/> 		<ul style="list-style-type: none"> • Demonstrate a detailed understanding of the theory/principles of system/equipment calibration <input type="checkbox"/> • Demonstrate a detailed understanding of methods to prevent unplanned shutdown of interacting equipment when conducting calibration <input type="checkbox"/> • Pro-actively works with others to identify areas for improvement and follows through on agreed implementation <input type="checkbox"/> • Make recommendations/ suggestions to improve work efficiencies <input type="checkbox"/> • Produce a detailed work plan to support the maintenance operation including measures to deal with contingencies <input type="checkbox"/> 		<ul style="list-style-type: none"> • Demonstrate deeper technical knowledge of equipment calibration and configuration e.g. system / equipment parameters, tolerances, settings <input type="checkbox"/> • Identify and implement tangible changes that improve the efficiency of the work being conducted <input type="checkbox"/> • Identify and take action to report or deal with issues of nonconformity/compliance <input type="checkbox"/> • Demonstrate the ability to take a lead in accepting added responsibility and autonomy to achieve/improve the work being undertaken <input type="checkbox"/> 	

EP5 Calibrate and configure integrated electrical apparatus, systems and process control equipment				
Pass Criteria – All to be met		Merit Criteria – Minimum two to be met		Distinction Criteria – Minimum two to be met
consistency and accuracy of calibrated instruments/systems <ul style="list-style-type: none"> Record the results/outcomes of calibration work in line with company requirements 	<input type="checkbox"/>			
Assessor must ask the following standardised questions.		Assessor must record all additional questions asked for clarification and the responses provided by the apprentice including examples.		Recording timeline.
Questions <i>Develop some open ended questions</i>				Mark awarded.

Appendix F: Practice Technical Interview Template

Assessment Conditions – Technical Interview

The technical interview is based on the apprentice’s submitted portfolio of evidence and is designed to test the validity, currency and coverage of the evidence against the knowledge, skills and behaviours of the standard.

During the technical interview, the apprentice may refer to their submitted portfolio of evidence. No other reference materials or resources are permitted.

This document is for use by the employer/provider person playing the role of the assessor during a practice technical interview. It is designed to help replicate the live assessment experience and to enable feedback to be provided to the apprentice. The practice technical interview must be conducted under examination conditions and recorded. The apprentice must be asked questions.

There are a maximum of **100 marks** for the interview.

To achieve a Pass for the technical interview, a Pass is required in ALL relevant elements, including all skills from the specialist pathway.

To achieve a Merit or Distinction for the technical interview, all Pass criteria must be achieved PLUS a minimum number of merit and distinction marks as described in Section 3 in the Specification ‘Grading and Grading Criteria – Component 3: Technical Interview.’

Apprentice Full Name:				
Employer and location:				
Assessor Full Name:				
Date of Interview:		Start time:		Finish time:

K2 Relevant industry health and safety standards, regulations, and environmental and regulatory requirements			
Pass Criteria – All to be met		Merit Criteria – Minimum two to be met	
<ul style="list-style-type: none"> • A knowledge of the company process/s and/or procedures for achieving and maintaining safety when working on systems within their work role and how they impact the work e.g. safe systems of work, documentation <input type="checkbox"/> • A clear understanding of the purpose of conducting risk assessments and the factors which affect the critical reasoning when making risk assessment decisions <input type="checkbox"/> • A knowledge of the Company procedure/s for reporting safety concerns and emergencies 		<ul style="list-style-type: none"> • How they have readily accepted additional health, safety and environmental responsibility/autonomy to maintain/improve work safety standards 	<ul style="list-style-type: none"> • How they have challenged unsafe behaviour/practices using appropriate techniques <input type="checkbox"/>

K2 Relevant industry health and safety standards, regulations, and environmental and regulatory requirements			
Assessor must ask the following standardised questions.	Assessor must record all additional questions asked for clarification and the response provided by the apprentice including examples.	Recording timeline.	Mark awarded.
Questions <i>Develop some open ended questions</i>			

K3 Maintenance and operational practices, processes and procedures covering a range of plant and equipment					
Pass Criteria – All to be met		Merit Criteria – Minimum two to be met		Distinction Criteria - Minimum two to be met	
<ul style="list-style-type: none"> • A working knowledge of the maintenance requirements for the range of plant/ equipment worked on within their job role <input type="checkbox"/> • A working knowledge of the company’s operational processes and procedures and how these have affected/influenced their maintenance work <input type="checkbox"/> • Their planning process for conducting maintenance operations and the factors which have influenced their critical reasoning/decision <input type="checkbox"/> 		<ul style="list-style-type: none"> • A detailed knowledge of the company maintenance practices by explaining additional technical detail for maintenance procedures on plant/equipment <input type="checkbox"/> • A detailed knowledge of the company operational processes and procedures which affect maintenance operations by explaining additional operational detail <input type="checkbox"/> • A detailed knowledge of the range of testing procedures <input type="checkbox"/> 		<ul style="list-style-type: none"> • An excellent and thorough knowledge and understanding of relevant maintenance and operational practices/procedures for their job role <input type="checkbox"/> • An ability to analyse and provide valid justification for the company’s maintenance procedures and/or operational practices for maintenance work on plant and equipment <input type="checkbox"/> • A detailed technical/commercial understanding of the effects of conducting maintenance procedures on <input type="checkbox"/> 	

K4 The relevant engineering theories and principles relative to their occupation					
Pass Criteria – All to be met		Merit Criteria – Minimum two to be met		Distinction Criteria – Minimum two to be met	
<ul style="list-style-type: none"> • A working knowledge of the range of relevant operational theories and principles which underpin their work 	<input type="checkbox"/>	<ul style="list-style-type: none"> • A detailed knowledge of the relevant operational theories and principles which have supported and/or influenced their work activities 	<input type="checkbox"/>	<ul style="list-style-type: none"> • An excellent and thorough knowledge and understanding of the relevant operational theories and principles relative to plant and equipment in their job role 	<input type="checkbox"/>
<ul style="list-style-type: none"> • A working knowledge of the basic effect/influence of the relevant operational theories and principles which directly underpin their work activities 	<input type="checkbox"/>	<ul style="list-style-type: none"> • How they have used relevant operational theories and principles to support / influence their work decisions/activities 	<input type="checkbox"/>	<ul style="list-style-type: none"> • How they have used their understanding of relevant operational theories and principles to make suggestions which have influenced or led to an improved performance 	<input type="checkbox"/>
<ul style="list-style-type: none"> • The benefits of being able to identify and apply the differing operational theories and principles in relation to their job role e.g. maintenance inspections, fault finding 	<input type="checkbox"/>	<ul style="list-style-type: none"> • Their inclusion of operational formulae/theories/principles to support their technical explanations in relation to their work activities 	<input type="checkbox"/>	<ul style="list-style-type: none"> • How they have conducted further technical research which is based on relevant operational theories and principles to support the effects of current or future technologies 	<input type="checkbox"/>
<ul style="list-style-type: none"> • A working knowledge of how to apply the relevant operational formulae which can be used to support their work activities 	<input type="checkbox"/>				

K4 The relevant engineering theories and principles relative to their occupation			
Assessor must ask the following standardised questions.	Assessor must record all additional questions asked for clarification and the response provided by the apprentice including examples.	Recording timeline.	Mark awarded.
Questions <i>Develop some open ended questions</i>			

S5 Locate, and rectify faults on plant and equipment					
Pass Criteria – All to be met		Merit Criteria – Minimum two to be met		Distinction Criteria – Minimum two to be met	
<ul style="list-style-type: none"> • A working knowledge of the company policies and procedures for the location of faults on plant and equipment worked on <input type="checkbox"/> • A clear understanding of the company policies and procedures in relation to achieving the safe isolation of equipment from relevant sources of energy and maintaining safety from the system <input type="checkbox"/> • How they have used tools/ equipment/techniques to <input type="checkbox"/> 		<ul style="list-style-type: none"> • A detailed knowledge of the company processes and procedures by explaining additional technical detail for the fault location methods/procedures conducted on plant/ equipment/systems <input type="checkbox"/> • A detailed understanding of the tools and equipment that can be used to identify and locate faults on plant/equipment/systems <input type="checkbox"/> • Their ability to take a lead in fault finding/rectification activities and accept additional <input type="checkbox"/> 		<ul style="list-style-type: none"> • An excellent knowledge/understanding in relation to fault location/rectification procedures within their job role <input type="checkbox"/> • How they have used a range of methods to locate, and rectify faults on plant and equipment, with a detailed explanation/justification of their chosen methods <input type="checkbox"/> • How they have used their knowledge of fault location/rectification to improve/influence work outcomes <input type="checkbox"/> 	

S8 Communicate, handover and confirm that the appropriate engineering process has been completed to specification				
Pass Criteria – All to be met		Merit Criteria – Minimum two to be met		Distinction Criteria – Minimum two to be met
<ul style="list-style-type: none"> How they have confirmed the recipient/s of the handover process fully understand any critical information given How they have completed the company process for reporting/ recording the handover of plant/equipment back into service in line with company procedures 	<input type="checkbox"/>			
Assessor must ask the following standardised questions.		Assessor must record all additional questions asked for clarification and the response provided by the apprentice including examples.		Recording timeline.
Questions <i>Develop some open ended questions</i>				Mark awarded.

Pathway: Electrical System and Process Control Role Specialist Skills

EP1 Position, assemble, install and assemble, install and dismantle integrated electrical, systems and process control equipment					
Pass Criteria – All to be met		Merit Criteria – Minimum two to be met		Distinction Criteria – Minimum two to be met	
<ul style="list-style-type: none"> • A working knowledge of their responsibilities for the range of work activities within their job role <input type="checkbox"/> • How they have used company policies/procedures/specifications to conduct a range of position, assemble, install and dismantle work activities <input type="checkbox"/> • How they have used tools and equipment to conduct a range of position, assemble, install and dismantle activities in compliance with specifications and regulatory requirements <input type="checkbox"/> • How they have conducted the required checks/test procedures to confirm the completed work meets company/operational requirements <input type="checkbox"/> • How they have used critical reasoning to identify and resolve <input type="checkbox"/> 		<ul style="list-style-type: none"> • A detailed understanding of the range and technical requirements of the plant and equipment worked on <input type="checkbox"/> • A detailed technical understanding for the range of methods/techniques used for their position, assemble, install and dismantle work activities <input type="checkbox"/> • A detailed technical understanding for the factors which can affect their critical reasoning when making decisions to resolve technical problems <input type="checkbox"/> • How they have taken a proactive lead in organising/controlling their conducted work activities <input type="checkbox"/> 		<ul style="list-style-type: none"> • An excellent knowledge and understanding in relation to the range and technical requirements of the plant and equipment worked on <input type="checkbox"/> • Their ability to explain/justify the Company methods /processes/procedures used for the range of plant and equipment worked on <input type="checkbox"/> • How they have taken a lead in accepting additional responsibility/autonomy to improve the outcome of their position/assemble/install/dismantle work activities <input type="checkbox"/> 	

EP1 Position, assemble, install and assemble, install and dismantle integrated electrical, systems and process control equipment				
Pass Criteria – All to be met		Merit Criteria – Minimum two to be met		Distinction Criteria – Minimum two to be met
technical problems within their control effectively during their range of work activities <ul style="list-style-type: none"> How they have reported/recorded the work conducted and returned the work area to a safe condition in line with company procedures 	<input type="checkbox"/>	which has led to a successful completion		
Assessor must ask the following standardised questions.		Assessor must record all additional questions asked for clarification and the response provided by the apprentice including examples.		Recording timeline.
Questions <i>Develop some open ended questions</i>				Mark awarded.

EP2 Carry out planned, unplanned and preventative maintenance procedures on integrated plant and equipment				
Pass Criteria – All to be met		Merit Criteria – Minimum two to be met		Distinction Criteria – Minimum two to be met
<ul style="list-style-type: none"> A working knowledge of their responsibilities for the range of work activities within their job role 	<input type="checkbox"/>	<ul style="list-style-type: none"> A detailed understanding of the range and technical requirements of the plant and equipment worked on 	<input type="checkbox"/>	<ul style="list-style-type: none"> An excellent knowledge and understanding in relation to the range and technical maintenance

EP2 Carry out planned, unplanned and preventative maintenance procedures on integrated plant and equipment

Pass Criteria – All to be met		Merit Criteria – Minimum two to be met		Distinction Criteria – Minimum two to be met	
<ul style="list-style-type: none"> • How they have used company policies/procedures/specifications to conduct a range of maintenance procedures work activities 	<input type="checkbox"/>	<ul style="list-style-type: none"> • A detailed technical understanding for the range of methods/techniques used for maintenance work undertaken 	<input type="checkbox"/>	<ul style="list-style-type: none"> • requirements of the plant and equipment worked on 	<input type="checkbox"/>
<ul style="list-style-type: none"> • How they have used tools and equipment to conduct a range of maintenance procedures in compliance with all company health, safety and environmental processes, policies and regulatory requirements 	<input type="checkbox"/>	<ul style="list-style-type: none"> • A detailed technical understanding for the factors which can affect their critical reasoning when making decisions to resolve technical problems 	<input type="checkbox"/>	<ul style="list-style-type: none"> • Their ability to explain/justify the company maintenance methods/processes/procedures used for the range of plant and equipment worked on 	<input type="checkbox"/>
<ul style="list-style-type: none"> • How they have conducted the required checks/test procedures to confirm the completed maintenance work meets company requirements 	<input type="checkbox"/>	<ul style="list-style-type: none"> • How they have taken a proactive lead in organising/controlling their conducted work activities which has led to a successful completion 	<input type="checkbox"/>	<ul style="list-style-type: none"> • How they have taken a lead in accepting additional responsibility/autonomy to improve the outcome of their maintenance work activities 	
<ul style="list-style-type: none"> • How they have used critical reasoning to identify and resolve technical problems within their control effectively during their range of work activities 	<input type="checkbox"/>				

EP3 Replace, repair and/or remove components within integrated plant and equipment and ensure its return to operational condition

AND

EP4 Diagnose and determine the cause of faults within integrated plant and equipment

Pass Criteria – All to be met		Merit Criteria – Minimum two to be met		Distinction Criteria – Minimum two to be met	
<p>procedures/specifications to conduct a range of replace/repair work procedures</p> <ul style="list-style-type: none"> • How they have used tools and equipment to conduct a range of replace/repair procedures in compliance with all company health, safety and environmental processes, policies and regulatory requirements <input type="checkbox"/> • How they have conducted the required checks/test procedures to confirm the plant/equipment worked on can be returned to operational service <input type="checkbox"/> • How they have used critical reasoning to identify and <input type="checkbox"/> 		<ul style="list-style-type: none"> • A detailed technical understanding for the range of causes and effects which lead to plant and equipment being replaced/repared <input type="checkbox"/> • A detailed technical understanding for the factors which can affect their critical reasoning when making decisions to resolve technical problems <input type="checkbox"/> • How they have taken a pro-active lead in organising/controlling their conducted replace/repair work activities which has led to a successful completion 		<ul style="list-style-type: none"> • Their ability to explain/justify the company methods/processes/ procedures used for the range of plant and equipment replaced/repared <input type="checkbox"/> • How they have taken a lead in accepting additional responsibility/autonomy to improve the outcome of their replace/repair work activities <input type="checkbox"/> 	

EP3 Replace, repair and/or remove components within integrated plant and equipment and ensure its return to operational condition

AND

EP4 Diagnose and determine the cause of faults within integrated plant and equipment

Pass Criteria – All to be met		Merit Criteria – Minimum two to be met		Distinction Criteria – Minimum two to be met	
resolve technical problems within their control <ul style="list-style-type: none"> How they have returned plant/equipment worked on to operational service in line with company procedures 					
Assessor must ask the following standardised questions.	Assessor must record all additional questions asked for clarification and the response provided by the apprentice including examples.			Recording timeline.	Mark awarded.
Questions <i>Develop some open ended questions</i>					

EP5 Calibrate and configure integrated electrical apparatus, systems and process control equipment				
Pass Criteria – All to be met		Merit Criteria – Minimum two to be met		Distinction Criteria – Minimum two to be met
<ul style="list-style-type: none"> • A working knowledge of their responsibilities for the range of diagnostic activities undertaken <input type="checkbox"/> • How they calibrated instruments to a given specification <input type="checkbox"/> • How they planned calibration activities to minimise operational conditions <input type="checkbox"/> • How they selected the appropriate tools and equipment for specific calibration and/or configuration activities <input type="checkbox"/> • A working knowledge of the company procedures and regulatory requirements that must be followed when calibrating and/ or configuring instruments <input type="checkbox"/> • How they applied a calibration that was both accurate and consistent <input type="checkbox"/> 		<ul style="list-style-type: none"> • A detailed knowledge of the principles of calibration and/or configuration of plant and equipment <input type="checkbox"/> • Detailed knowledge of the ways to minimise risk of all planned shutdowns during calibration and/or configuration activities <input type="checkbox"/> • How they would work with in a team to identify improvements on calibration and/or configuration activities <input type="checkbox"/> • How they would report any potential improvements associated with calibration and/or configuration activities <input type="checkbox"/> 	<ul style="list-style-type: none"> • How they would identify and implement potential changes to improve the efficiency of calibration and/or configuration activities <input type="checkbox"/> • How they reported or dealt with instruments that failed to meet calibration and/or configuration compliance <input type="checkbox"/> • How they took an autonomous role during calibration and/or configuration activities <input type="checkbox"/> 	

EP5 Calibrate and configure integrated electrical apparatus, systems and process control equipment				
Pass Criteria – All to be met		Merit Criteria – Minimum two to be met		Distinction Criteria – Minimum two to be met
<ul style="list-style-type: none"> How they recorded the outcomes of calibration and/or configuration activities 				
Assessor must ask the following standardised questions.		Assessor must record all additional questions asked for clarification and the response provided by the apprentice including examples.		Recording timeline.
Questions <i>Develop some open ended questions</i>				Mark awarded.

Appendix G: Portfolio Mapping Document

Introduction

Throughout the on-programme part of the apprenticeship, the apprentice will need to compile a portfolio of evidence to support the requirements of the technical interview which is based on the portfolio. The evidence within the portfolio will need to be mapped by the apprentice to the KSB requirements using the portfolio mapping document below.

The independent assessor will use the portfolio mapping document to review the evidence in the apprentice's portfolio in preparation for the technical interview.

The portfolio mapping document below consists of the core requirements and specialist skills.

Apprentices next steps

1. Complete all the details on the first page and include employer details of where relevant competencies from their experience at work was gained.
2. Ensure each piece of evidence is signed off by their tutor/supervisor/mentor and training provider. The apprentice can use a number of different types of evidence to demonstrate their competence as described in Section 5 of the Specification – 'What to include in the portfolio of evidence'. For further guidance, the apprentice must seek advice from their tutor/supervisor/mentor and training provider.
3. Map evidence to the criteria in the following pages using a referencing system indicating where the evidence for the criteria is located in the portfolio e.g., work based evidence Job 1 (J1) page 5 paragraph 2. This will allow the independent assessor, appointed by Energy & Environment Awards to locate the section or specific piece of evidence being discussed and referred to during the interview.
4. Place the portfolio mapping document at the front of the portfolio of evidence.

The apprentice's training provider must make arrangements for Energy & Environment Awards to have access to the apprentice's portfolio including the portfolio mapping document at Gateway. For those using e-portfolios such as ONEFILE or SMARTASSESSOR the reference used must simply be the file or folder name you used when uploading the evidence to such systems.

Portfolio Mapping Document

This document must be placed at the front of the Portfolio and submitted to Energy & Environment Awards with the Portfolio.

Mapping Sign off on Completion:

Apprentice Full Name (Print)	Apprentice Signature	Training Provider (Company)	Training Provider Full Name of Signatory	Date of Sign Off

Core Knowledge

Ref.	Apprenticeship Standard Criteria	PORTFOLIO REVIEW (Apprentice Input)		
		1	2	3
K1	First principles relating to operation and maintenance of plant and equipment			
K2	Relevant industry health and safety standards, regulations and environmental and regulatory requirements			
K3	Maintenance and operational practices, processes and procedures			
K4	Relevant engineering theories and principles			
Assessor Comments:				

Core Skills

Ref.	Apprenticeship Standard Criteria	PORTFOLIO REVIEW (Apprentice Input)		
		1	2	3
S5	Locate, and rectify faults on plant and equipment			
S6	Read, understand, interpret and work to technical information			
S7	Inspect and maintain plant and equipment			
S8	Communicate, handover and confirm that the appropriate engineering process has been completed			
Assessor Comments:				

Core Behaviours

Ref.	Apprenticeship Standard Criteria	PORTFOLIO REVIEW (Apprentice Input)		
		1	2	3
B5	Critical reasoning			
Assessor Comments:				

Pathway: Electrical System and Process Control Specific Skills

Ref.	Apprenticeship Standard Criteria	PORTFOLIO REVIEW (Apprentice Input)		
		1	2	3
EP1	Position, assemble, install and dismantle integrated electrical apparatus, systems and process control equipment			
EP2	Carry out planned, unplanned and preventative maintenance procedures on integrated plant and equipment			
EP3	Replace, repair and/or remove components within integrated plant and equipment and ensure its return to operational condition			
EP4	Diagnose and determine the cause of faults within integrated plant and equipment			
EP5	Calibrate and configure integrated electrical apparatus, systems and process control equipment			
Assessor Comments:				

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