ENERGY & ENVIRONMENT AWARDS

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EEA Level 4 End-point Assessment for Electrical Power Protection and Plant Commissioning Engineer

Apprentice Guide

QAN 610/6022/7
ST0157 V1.0

Apprentice Guide for

EEA Level 4 End-point Assessment for Electrical Power Protection and Plant Commissioning Engineer

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Updates to this Guide

Since the first publication of Energy & Environment Awards Electrical Power Protection and Plant Commissioning Engineer Apprentice Guide, the following updates have been made.

Version	Date first published	Section updated	Page(s)
v3.0	April 2025	Rebranded	All
v2.0	August 2023	Rebranded and revised content using new template	All
v1.0	August 2021	First published	All

At A Glance Component 1: Knowledge Assessment

Date(s):	
Time:	
Location:	
Examination Conditions:	Controlled by an invigilator
Additional Requirements:	
Assessed and marked by:	Independent assessor/Energy & Environment Awards

At A Glance Component 2: Technical Interview

Date(s):	
Time:	
Location:	
Examination Conditions:	With an Energy & Environment Awards assessor in your place of work or training environment
Additional Requirements:	
Assessed and marked by:	Technical Expert/Energy & Environment Awards

At A Glance Component 3: Practical Observation

Date(s):	
Time:	
Location:	
Examination Conditions:	With an Energy & Environment Awards assessor in your place of work
Additional Requirements:	
Assessed and marked by:	Technical Expert/Energy & Environment Awards

Introduction

Energy & Environment Awards has been selected by your employer to carry out end-point assessment (EPA) and it is our job to ensure that you are assessed fairly.

How This Apprentice Guide Is Organised

- ✓ Section 1:

  What is in the Apprentice Guide?

- ✓ Section 2:

  An Apprentice's End-point Assessment Journey

- ✓ Section 3:

  End-point Assessment Components

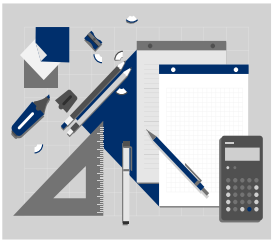
How to Use This Guide

This guide has been split into 3 sections. You can dip into each section that you are working on where you will find useful information, practical advice, tips you need and useful dates to successfully complete your EPA.

Throughout we have used headings and cross referenced to our EPA Electrical Power Protection and Plant Commissioning Engineer (EPPPCE) Specification which provides details of the EPA components.

Section 1: The Basics

What is an Apprenticeship Standard?



An apprenticeship standard is a description of your apprenticeship, and it is based on the Electrical Power Protection and Plant Commissioning Engineer standard, which was written by employers. It contains the Electrical Power Protection and Plant Commissioning Engineer's job profile, and describes the knowledge, skills and behaviours (KSBs):

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

The standard can be accessed via the link below:
https://skillsengland.education.gov.uk/apprenticeship-standards/st0157-v1-0

What is an Assessment Plan?

An Assessment Plan is also written by employers and provides details of what is required for you to pass your end-point assessment. It includes details of what you will be assessed on, how each assessment will take place, what methods will be used and who will assess you.

Energy & Environment Awards designed the end-point assessment (EPA) to meet the requirements of the Assessment Plan. The Assessment Plan can be accessed via the link below:
https://skillsengland.education.gov.uk/media/1171/electrical_power_protection_and_plant_commissioning_engineer.pdf

What is an end-point assessment (EPA)?

The end-point assessment is the assessments you take at the end of your apprenticeship. You will typically spend 36 months on-programme working towards your standard with a minimum of 20% off-the-job training. You are required to spend a minimum of 12 months on-programme with the end-point assessment. After this you have a Gateway meeting with your employer or training provider to confirm you are ready for the end-point assessments. The words end-point means that you will be assessed at the end of your on-programme (training) to confirm you have met the standard. Your EPA period will be in the last 6 months. The end-point assessments consist of 3 components:

- Knowledge Assessment
- Technical Interview Based on a Work Log
- Practical Observation

Each component has a provisional grade and each grade is carried forward to award a final grade. You must pass all 3 components to pass your apprenticeship.

The final grade can be a Fail, Pass or Distinction.

What are the Gateway Requirements?

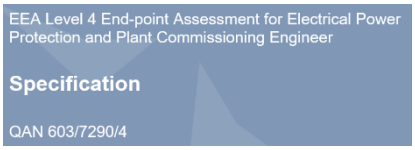
Gateway is a meeting where your employer, training provider and you ensure that you are confident that you can demonstrate all the KSBs defined in the apprenticeship standard and you are ready for EPA. After the meeting, your training provider will confirm the outcomes of the Gateway meeting by sending a signed document to Energy & Environment Awards. The document confirms that you have met the following Gateway requirements:

- achieved English and maths at level 2 or higher
- satisfactorily completed the formal training plan agreed with your employer
- sufficient evidence in the form of a work log so you can consistently demonstrate skills, knowledge and behaviours as described in the standard
- the ability to work safely and competently as a commissioning engineer.

Your training provider will send copies of these documents to Energy & Environment Awards.

What is the EPA Specification?

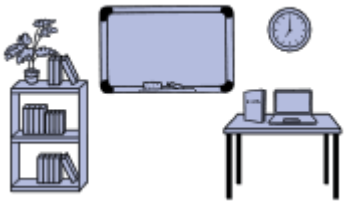
The end-point assessment specification provides details of the assessment methods used in your EPA, which:



- KSBs that are covered by each assessment
- KSBs amplification and guidance

The Specification can be accessed via the link below:
https://energyenvironmentawards.co.uk/epa/electrical-power-protection-and-plant-commissioning-engineer/

Section 2: Apprentice EPA Journey



Let us Begin Your EPA Journey.

Find a quiet place and read on….

Your EPA journey consists of 3 elements:

- A training programme with on the job, off the job elements, typically 36 months
- Gateway meeting window
- End-point Assessment (EPA) typically 6 months

Your journey begins with the training program. Your employer and training provider are responsible for this part. This is where you will gain the required Knowledge, Skills and Behaviours (KSBs).

How will you be assessed in the end-point assessment?

You will be assessed on the following components:

1. **Knowledge Assessment**
2. **Technical Interview Based on a Work Log**
3. **Practical Observation**

The knowledge assessment must be completed first.

The assessments are weighted when the final grade is calculated:

1. **Knowledge Assessment** (20% weighting)
2. **Technical Interview Based on a Work Log** (40% weighting)
3. **Practical Observation** (40% weighting)

It is important for you to keep a record of when your 3 components are scheduled. We suggest you use the ‘At a Glance’ tables on page 5.

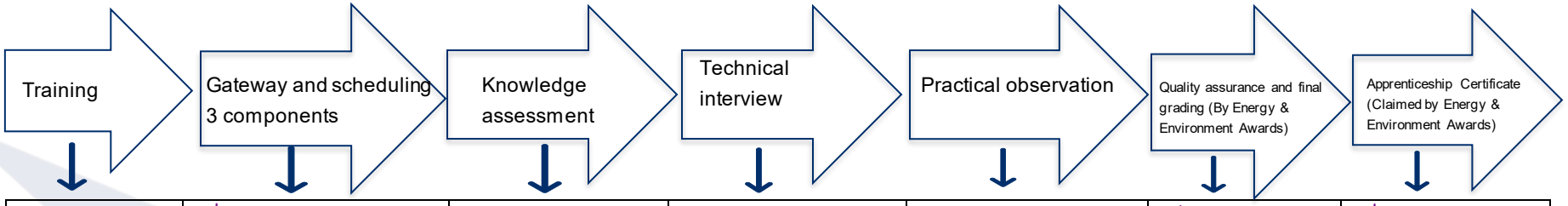
You must pass all 3 components to achieve this qualification. For further guidance refer to Section 3 End-point Assessment Components.

Reasonable adjustments

A reasonable adjustment is any action that helps to reduce the effect of a disability or difficulty that places you at a substantial disadvantage during assessments. If this applies to you make sure you tell your training provider who can make an application for a reasonable adjustment to Energy & Environment Awards on your behalf.

Your EPA Journey in a Diagram

The diagram below illustrates the order of your EPA **journey** from the day you register to your final certification:



Typically, 36 months	You have: Attended a Gateway meeting with your employer/provider. Achieved English and maths at level 2. Compiled a work log to demonstrate KSBs as described in the standard	2.5 hours 20 short answer questions. Under exam conditions supervised by an invigilator. Face to face. Closed book.	Typically 2 hours, max 3 hours. Under examination conditions. Face to face or remote as agreed. Technical Expert and Independent assessor. For further details of the technical interview see below*	Typically 1 day. Under examination conditions. Face to face. Technical Expert. For further details of the practical observation see below*	Awarded Final Grading: Distinction, Pass or Fail.	ESFA will send your Certificate to your training provider or employer. Contact your training provider or employer if you do not receive your certificate.

*For further details refer to Section 3 in this Apprentice Guide or Section 2 of the Specification.

Section 3: End-point Assessment Components

Now let us continue your journey through EPA. There are 3 components that you must pass to be awarded a certificate.

Component 1: Knowledge Assessment

Overview

The Knowledge Assessment is paper based. You will have 2.5 hours to complete the test. The test consists of 20 short answer questions.

Step-by-Step Guide

The table below provides a step-by-step guide on how the Knowledge Assessment will be carried out:

Who will start and finish your Knowledge Assessment?	You will sit your Knowledge Assessment in the presence of an invigilator.
How will the question appear?	Here is an example of how the question will appear: c) Identify one **advantage** that Auto-Reclose technology provides. [1 mark]

	You will be presented with a question and a box in which you must write your answer. Each question will also indicate the number of marks awarded for a correct answer. You should use this as an indication of how much you should be writing. In the example above there is one mark available for identifying one advantage. You only need to name one advantage for the mark e.g. “To provide quick and efficient restoration of supplies” **Always have a go even if you are not sure that it is the correct answer.**
Can I take any resources into the exam room?	The test is closed which means that you cannot refer to reference books or any other materials. You will be provided with stationery on the day.
Can I have access to the internet?	No access to the internet is allowed and this means you must not take your SMART watch into the exam room.
How will the Knowledge Assessment be organised for me?	**Locations:** Your Knowledge Assessment will take place at your employer’s or training provider’s premises or a suitable venue. • You will take the test in a quiet space and in the presence of an invigilator • Your test will be scheduled by your employer or training provider with Energy & Environment Awards • If you fail the Knowledge Assessment, you can re-sit or re-take the failed test at your employer’s discretion. There are no limits to the number of re-sits or re-takes you can take but it is important to revise and ensure that you are confident with the knowledge you are being tested on
What criteria will I have to learn? **AND**	The Knowledge Assessment questions are knowledge based and sample the 4 core knowledge criteria. Below is a list of the knowledge criteria, assessed in the Knowledge Assessment along with the range of questions that will be allocated to a Knowledge Assessment paper:

<table>
<tr>
<td>How many questions will be asked on each criterion?</td>
<td>
<table>
<tr><th>Number of Questions</th><th>Knowledge</th></tr>
<tr><td>5</td><td>TK1: a comprehensive understanding of UK electrical power systems</td></tr>
<tr><td>5</td><td>TK5: protection, control and telemetry equipment and the impact on the electrical network of its operation</td></tr>
<tr><td>5</td><td>TK8: high voltage electrical network operations and topologies</td></tr>
<tr><td>5</td><td>TK10: the application of Electricity Supply Standards, regulations and policies</td></tr>
</table>
The knowledge assessment tests both safety critical elements and technical breadth/depth of understanding. The four topic areas are equally weighted, and each area contributes 40/160 marks.
There is one safety critical question for each of the four topic areas. You will need to provide a correct answer for all safety critical questions to achieve a pass. A correct answer is deemed to be one where you have achieved 5 out of 8 marks as a minimum.
Remember the questions have been written to reflect the Electrical Power Protection and Plant Commissioning Engineer role as a whole and are not focussed on specific employer-specific processes. For amplification and guidance refer to Section 3 of the EPPPCE Specification.
</td>
</tr>
<tr>
<td>What should I do to prepare for the knowledge assessment?</td>
<td>
You should be prepared to:

revise the knowledge criteria listed above
ask your employer or training provider for additional questions that they have prepared to support you

While on-programme, the employer or training provider must ensure you are:
</td>
</tr>
</table>

	• familiar with all areas assessed by the knowledge assessment as listed above • supported in completing a practice test and provide you with constructive feedback to enable you to identify areas you need to carry out further revision in
Provisional Grading	**Fail:** < 104 marks OR at least one safety critical question failed **Pass:** 104 – 142 marks plus all safety critical questions passed and at least 2 questions out of the 5 for each question area answered correctly **Distinction:** 143 – 160 marks plus all safety critical questions passed
Overall grading for this component	Fail, Pass or Distinction

Practice Component 1: Knowledge Assessment

You should have an opportunity to have a practice knowledge assessment which mirrors the real assessment. the practice knowledge assessment would be set up using the structure in the table above by your employer or training provider. The feedback provided will assist you with preparing for the actual knowledge assessment.

Component 2: Technical Interview

Overview

You will be asked to complete and submit a work log in advance of the interview. Your interview will be based on the content of your work log which will contain evidence from the more complex work activities which you will have undertaken during your on-programme work period. The interview allows you to demonstrate how you have met the KSBs to carry out your occupational role as an Electrical Power Protection and Plant Commissioning Engineer effectively and safely. The interview allows for testing of responses where there are a range of potential answers that cannot be tested through the knowledge assessment.

Step-by-Step Guide

The table below provides a step-by-step guide on how the technical interview will be carried out:

Who will assess me?	1 technical expert, who may be from your organisation and known to you, accompanied by 1 independent assessor. The technical expert and the independent assessor are appointed by Energy & Environment Awards.
How will the technical interview be organised?	**Locations:** Your interview will take place at your employer's premises or a suitable venue. **Time:** Your interview will be expected to last 2 hours, but no more than 3 hours **Your interview will be:** • a discussion between you and the technical expert • face to face or remote, as agreed • assessed and outcomes will be recorded by the assessor on official Energy & Environment Awards technical interview documents • recorded using the relevant technology such as Microsoft Teams or an audio recording device You will have access to your work log throughout the interview.

What topics will I have to cover?	The interview will cover the knowledge, skills and behaviours in relation to the following four topic areas. For further details refer to 'Section 2 in the PPPCE Specification for Knowledge, Skills and Behaviours (KSBs) coverage. A link to the EPPPCE Specification is below. https://energyenvironmentawards.co.uk/epa/electrical-power-protection-and-plant-commissioning-engineer/
How many questions will I be asked?	• There is no specified number of questions for the interview. • Follow-up questions may be asked to probe for further clarification. • Wherever possible the questions will be This is in the apwc contextualised to the contents of your work log
Provisional Grading	The technical expert will award a provisional grade. The independent assessor will countersign the documentation to indicate they are satisfied that the interview was conducted in line with Energy & Environment Awards guidance. You must pass **ALL** the pass criteria to achieve a pass.
Overall grading for this component	Fail, Pass or Distinction

Work Log Requirements

The requirements are as follows:

The work log must include:

- a mapping document
- evidence of work from the more complex work activities which you have undertaken during your on-programme work period
- progress review documentation

Work log Mapping Document

You must map your work log of evidence to the KSBs as this evidence will be used by the technical expert to assess you during the technical interview. The work log mapping document must be clearly referenced and included at the front of the work log.

For further guidance on how to map refer to:

- Section below 'How do I organise my work log and map it to the mapping document?'
- Apprentice Guide, Appendix B for the work log mapping document

How do I organise my work log and map my evidence?

Step-by-Step Guide

You must include a work log mapping document and place it at the front of your work log.

Your work log is not assessed. It serves two purposes:

- The technical expert reviews your work log before the interview to help focus and contextualise their questions
- You should carefully prepare, index and map your work log as this will further support you during your interview. Your organised work log will allow you with ease to refer to examples and discuss the evidence with the technical expert

What should I include in my work log?

Quality vs quantity

You should be supported in selecting and mapping evidence for your work log by your employer or training provider.

We would advise you to choose the best pieces of evidence and map them to each KSB which will be covered during your interview. To be confident of meeting the KSB, you should aim to have two/three pieces of evidence mapped to each KSB.

Examples of acceptable evidence that is mapped against the relevant KSBs that will be assessed by the interview:

- progress review documentation
- workplace documentation/records, for example job task sheets/job card/times sheets, equipment maintenance /service records related to the apprentice
- situations that have been difficult and challenging, and how these have been overcome e.g. equipment breakdown which has results in a change in working practice while still adhering to company procedures
- witness statements signed and dated by coaches/trainers
- any employer contributions should focus only on direct observation of evidence (for example witness statements) rather than opinions
- annotated photographs/diagrams
- video clips (maximum total duration 10-minutes); the apprentice must be in view and identifiable

The above is not a definitive list. You can include other relevant evidence sources.

You **must not** include in your work log any methods of self-assessment.

Evidence must be:

- produced by you (authentic)
- relevant to the standard (K, S or B) that it is mapped to
- produced during the time you were carrying out your on-programme training

What can I do to prepare for the interview?

You should:

- be familiar with the structure of your work log
- know the KSBs covered by the interview
- know where you have mapped your KSBs by referring to your work log mapping document
- ensure there is quality evidence to cover every KSB in the interview
- practise mapping evidence and completing the evidence mapping grid
- know how you will be graded

The role of your employer or training provider

Employers or training providers are expected to support you in preparing your work log by:

- clarifying responsibility for supporting you in selecting and mapping evidence for your work log, including the role of employer coaches/mentors where applicable
- advising you on which pieces of evidence you should select to ensure that when it is looked at as a whole, your evidence provides coverage of all the required elements of the standard (KSBs) assessed in the interview
- supporting the mapping of your evidence and production of your mapping document
- authenticating evidence you provide is valid
- signing off your work log
- submitting your work log to Energy & Environment Awards as part of Gateway

Practice Component 2: Technical Interview Based on Your Work Log

You should have an opportunity to have a practice interview which mirrors the real assessment. The practice interview based on your work log would be set up using the structure in the table above by your employer or training provider.

Component 3: Practical Observation

Overview

A Practical Observation involves a technical expert, appointed by Energy & Environment Awards observing and questioning you undertaking a set task or a series of set tasks in a working environment. The practical observation will involve

you being observed carrying out a range of activities which typically include the installation, testing and commissioning of protection systems to prove the integrity of power system plant and equipment.

Step-by-Step Guide

The table below provides a step-by-step guide on how the Practical Observation will be carried out:

Structure of your Practical Observation	The total assessment time is typically 1 day. The actual time will be based on the comparable time a competent worker in the industry would take to achieve successful task(s) completion • Breaks may be taken during the Practical Observation to allow you to move from one location to another and for meal/comfort breaks
Where will the assessment take place?	• Your employer's premises
What knowledge, skills and behaviours (KSBs) do I have to demonstrate during the Practical Observation?	**Core Skills**: **S1** Applies appropriate engineering and analytical processes to both normal and abnormal conditions on high voltage power generation, transmission or distribution plant and equipment **S2** Demonstrate application of safe working practices in line with company processes and legislative requirements **S3** Use of a wide range of test equipment to confirm the suitability of the high voltage plant for conformity and operational service **S4** Accurately reads and interprets a wide range of engineering diagrams and drawings **S6** Effectively communicate with others to confirm that the tests meet the required standards/specifications **Skill-Specific Activities: Plant Skills** **PL1** Undertake testing, commissioning and maintenance activities on electrical power systems and equipment. This could

	include transformers, switchgear, conductors, battery systems and ancillary equipment **Skill-Specific Activities: Protection Skills** **PR1** Undertake protection, testing, commissioning and maintenance activities involving functionality testing and the injection of currents and voltages into high voltage equipment and their associated protection and control systems to simulate the range of fault conditions and scenarios that can occur on the electrical system **PR2** Use appropriate test equipment to verify protection and control settings and ensure correct installation and operation of modern microprocessor and numerical based protection as well as older electromechanical relays **PR3** Ensure that protection systems interface correctly with the associated high voltage equipment and, where necessary, coordinates effectively with the wider high voltage system **For amplification and guidance refer to the EPPPCE Specification:** https://energyenvironmentawards.co.uk/epa/electrical-power-protection-and-plant-commissioning-engineer/
What tasks will I have to cover?	The task(s) must allow you to undertake the activities required for a Practical Observation. For further details refer to 'Knowledge, Skills and Behaviours (KSBs) Coverage' in the specification, refer to link above .
What resources can I use?	Equipment and resources needed for the observation must be: • provided by the employer or training provider • the tools, equipment and PPE required for the job • in good and safe working condition Relevant work instructions/manuals must be available in hard copy or electronically.
How many questions will I be asked?	You will be asked questions to confirm your understanding of the rationale for actions taken and the choices made to complete the tasks.

Who will assess me?	A technical expert, appointed by Energy & Environment Awards.
Provisional Grading	The technical expert will award a provisional grade. You must pass **ALL** the pass criteria to achieve a pass.
Overall grading for this component	Fail, Pass or Distinction.

Practice Component 3: Practical Observation

You should have an opportunity to have a practice Practical Observation which mirrors the real assessment. A practice practical would be set up for you using the structure in the table above by your employer or training provider.

Overall grading

The 3 assessment components have a weighted contribution to your overall EPA grade.
Grades from individual assessment components will be combined in the following way to determine your overall EPA grade.

Knowledge Assessment	Technical Interview	Practical Observation	Overall grading
Fail	Any grade	Any grade	Fail
Any grade	Fail	Any grade	Fail
Any grade	Any grade	Fail	Fail
Pass	Pass	Pass	Pass
Distinction	Pass	Pass	Pass
Pass	Distinction	Pass	Pass
Pass	Pass	Distinction	Pass
Distinction	Distinction	Pass	Pass
Distinction	Pass	Distinction	Pass
Pass	Distinction	Distinction	Distinction
Distinction	Distinction	Distinction	Distinction

Any grade = fail, pass or distinction

Section 4: Resits and retakes

If you fail one or more EPA components, you can re-sit/re-take the failed component at your employer's discretion. Your employer needs to agree that a re-sit/re-take is appropriate. A re-sit does not need further learning, but a re-take does. You should have a supportive action plan to prepare for your re-sit/re-take. Further re-takes/re-sits would be at the discretion of the employer following a 1:1 review with you to determine your suitability for further testing

You may re-take/re-sit one or more elements within the six month end-point assessment period. Re-take/re-sits outside of the six-month end-point assessment period would require all elements to be re-assessed.

You cannot achieve higher than a pass for the EPA element that you have had to retake.

Re-sits and re-takes will not be offered to you if you wish to move from pass to a higher grade.

Energy & Environment Awards resit and re-take policy can be found at: https://energyenvironmentawards.co.uk/policies-and-fees/

Section 5: Appendices

Appendix A: Glossary

Appendix B: Work Log Mapping Document

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 –mindsets, attitudes or approaches needed for competence. Whilst these can be innate or instinctive, they can also be learnt. Behaviours tend to be very transferable. They may be more similar across occupations than knowledge and skills. For example, team worker, adaptable and professional

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

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

Gateway – the stage of the apprenticeship where the apprentice, employer and trainer determine whether the apprentice is ready to undertake the End-Point Assessment

Independent Assessor / Technical Expert – Will holistically assess the knowledge, skills and behaviours (KSBs) that you have been taught throughout the apprenticeship. Their role would involve assessing components 1 (Knowledge Assessment), 2 (Technical Interview) and 3 (Practical Observation)

Knowledge – the information, technical detail, and 'know-how' that someone needs to have and understand to successfully carry out the duties. Some knowledge will be occupation-specific, whereas some may be more generic

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

Skills – the practical application of knowledge needed to successfully undertake the duties. They are learnt through on and/or off-the-job training or experience

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. The occupational standards are developed by employers for occupations that meet the Institute for Apprenticeships & Technical Education current criteria. For further details refer to:
https://skillsengland.education.gov.uk/apprenticeship-standards/st0157-v1-0

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

Appendix B: Work Log Mapping Document

Introduction

Use this document to map the work log of evidence to the KSBs assessed during the interview

Your 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. Use several different types of evidence to demonstrate your competence as described in Section 3 of this Apprentice Guide – 'What to include in the work log?'. For further guidance, you must seek advice from your 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 work log e.g., work based evidence Job 1 (J1) page 5 paragraph 2. This will allow the technical expert and independent assessor to locate the section or specific piece of evidence being discussed and referred to during the technical interview.
4. Place the work log mapping document at the front of your work log of evidence.

Your training provider must make arrangements for Energy & Environment Awards to have access to your work log including the work log mapping document at Gateway. For apprentices using e-work logs such as ONEFILE, SMARTASSESSOR, the reference used must simply be the file or folder name you used when uploading the evidence to such systems.

Work Log Mapping Document

Place the work log mapping document at the front of the work log of evidence.

Mapping Sign off on Work Log Completion:

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

Core Knowledge:

Ref. (KSB)	Apprenticeship Standard Criteria	WORK LOG EVIDENCE REFERENCE (Apprentice Input)		
		1	2	3
TK1	A comprehensive understanding of UK electrical power systems			
TK2	The application and operation of system plant & equipment			
TK3	Fault analysis methods and how to interpret results			
TK4	How high voltage power generation, transmission and distribution plant & equipment operates			
TK5	Protection, control and telemetry equipment and the impact on the electrical network of its operation			
TK6	Commissioning and testing procedures & processes on high voltage apparatus			
TK7	Failure mode(s) of plant and equipment, their impact on the electrical network and the required remedial actions			
TK9	High voltage safe systems of work and risk management			

Ref. (KSB)	Apprenticeship Standard Criteria	WORK LOG EVIDENCE REFERENCE (Apprentice Input)		
		1	2	3
TK10	The application of the UK power standards, regulations and policies			
TK11	The type and application of test equipment used for commissioning purposes			

Core Skills

Ref. (KSB)	Apprenticeship Standard Criteria	WORK LOG EVIDENCE REFERENCE (Apprentice Input)		
		1	2	3
S1	Applies appropriate engineering and analytical processes to both normal and abnormal conditions on high voltage power generation, transmission or distribution plant & equipment			
S2	Demonstrate application of safe working practices in line with company processes and legislative requirements			
S3	Use of a wide range of test equipment to confirm the suitability of the high voltage plant for conformity and operational service			
S4	Accurately reads and interprets a wide range of engineering diagrams and drawings			
S5	Prepares and checks technical reports			
S6	Effectively communicate with others to confirm that the tests meet the required standards/specifications			

Core Behaviours

Ref. (KSB)	Apprenticeship Standard Criteria	WORK LOG EVIDENCE REFERENCE (Apprentice Input)		
		1	2	3
B4	Problem solving: pro-actively identifies and solves problems, within personal area of expertise, by using a logical and systematic approach			
B5	Methodical: identifies and applies procedures and processes as appropriate to the situation			

Specific Skills – Plant:

Ref. (KSB)	Apprenticeship Standard Criteria	WORK LOG EVIDENCE REFERENCE (Apprentice Input)		
		1	2	3
PL1	Undertake testing, commissioning and maintenance activities on electrical power systems and equipment. This could include transformers, switchgear, conductors, battery systems and ancillary equipment			

Specific Skills – Protection:

Ref. (KSB)	Apprenticeship Standard Criteria	WORK LOG EVIDENCE REFERENCE (Apprentice Input)		
		1	2	3
PR1	Undertake protection, testing, commissioning and maintenance activities involving functionality testing and the injection of currents and voltages into high voltage equipment and their associated protection and control systems to simulate the range of fault conditions and scenarios that can occur on the electrical system			
PR2	Use appropriate test equipment to verify protection and control settings and ensure correct installation and operation of modern microprocessor and numerical based protection as well as older electromechanical relays			
PR3	Ensure that protection systems interface correctly with the associated high voltage equipment and, where necessary, coordinates effectively with the wider high voltage system			