

ST1499 Level 4 Power industry electrical systems engineer Assessment Plan

Introduction

This Apprenticeship Assessment Plan (AAP) sets out the requirements for the assessment of the Level 4 Power industry electrical systems engineer apprenticeship. It should be read in conjunction with the General Requirements for Apprenticeship Assessment. Where there is conflict between this AAP and the General Requirements, this AAP takes precedence. Assessment organisations must also comply with the relevant regulatory framework for apprenticeship assessment.

It is important that the assessment of apprentices is proportionate, valid, and provides reliable evidence of an apprentice's attainment of the relevant knowledge and skills. As such, assessment organisations must design assessments to ensure:

- employers have confidence that the apprentice has reached the expected performance standard
- apprentices are sufficiently secure in their knowledge and skills, so that they could demonstrate their competence in different contexts (for example, a different workplace)

Assessment Outcomes

The assessment outcomes group and summarise the knowledge and skills that must be demonstrated in assessments. All assessment outcomes must be assessed.

Assessment organisations must ensure for each apprentice that all of the core assessment outcomes **plus** the assessment outcomes for **one** of the following options are assessed:

- Option 1: Asset management engineer
- Option 2: Electrical project engineer
- Option 3: Operational delivery engineer

Knowledge and skills statements in **bold** are mandatory and must be assessed in every version of the assessment that is made available.

Core Assessment Outcome	Mapping
AO1: Planning and carrying out work tasks Applies knowledge of electrical power principles and of the design construction and operation of plant and equipment to plan organise and carry out work tasks, prioritising these and evaluating	K1 K2 K3 K4 K5 K6 K7 K8 , K14, K16, K17, K21

risks and system impact of options to reach decisions. Applies environmental legislation and sustainability principles.	S1, S2, S7, S8, S12
AO2: Health and safety: understanding and planning Plans work to comply with all relevant health and safety regulations and procedures. Knows and understands emergency and incident response procedures and carries out health and safety audits, inspections and briefings.	K9, K10, K11, K13, K15, K20, K31 S4, S6, S11, S23
AO3: Health and safety: carrying out and managing work tasks Undertakes and manages work tasks in accordance with all relevant health and safety policies and network safe systems of work. Carries out risk assessments when completing work tasks.	K12 S3, S5
AO4: Technical documentation and record keeping Interprets and uses information, technical specifications and drawings, and collects, records and interprets data using these to support decisions. Completes documentation required for work activities and technical reports.	K18, K19, K22, K23 S9, S10, S13, S14, S15
AO5: Communication, teamwork and digital technology Establishes effective working relationships with colleagues and external contacts, communicating verbally and in writing and using appropriate techniques for the audience. Uses digital technology complying with GDPR and cyber security policies.	K26, K27, K28, K29 S18, S19, S20, S21
AO6: Problem solving and continuous improvement Uses fault-finding, problem-solving and continuous improvement techniques as required during work activities and makes recommendations for optimisation of systems or processes.	K24, K25, K30, K32 S16, S17
Option 1: Asset management engineer	Mapping
AO7: Asset maintenance, refurbishment and replacement planning Leads on the reverse engineering of components and on the development of maintenance and inspection plans and asset refurbishment specifications. Contributes to the development of asset engineering procedures and their application, and to the development of network resilience or replacement plans managing risks and making recommendations.	K33, K34, K35, K39 S23, S24, S25 S26, S30

AO8: Asset and network performance Carries out performance analysis on single assets and the network, identifying assets for refurbishment or replacement, evaluating proposals and making recommendations. Takes part in the investigation of asset, system or process failures and compiles information and data for regulatory returns.	K36, K37, K38, K40, K41 S27, S28, S29, S31, S32, S33
Option 2: Electrical project engineer	Mapping
AO9: Electrical project planning Prepares prioritised project plans and monitors their implementation applying knowledge of design, construction, installation and commissioning of power industry plant and equipment including underground cables and overhead lines. Takes account of land access and planning consent and resource requirements.	K43, K46, K47, K48, K51, K52 S34, S37
AO10: Electrical project management Establishes and leads project teams, co-ordinating project activities, monitoring costs and contributing to the overall management of the project budget and contracts. Writes and agrees work specifications and variations to these and signs off completed work.	K42, K43, K45, K49, K50 S35, S36, S38, S39, S40
Option 3: Operational delivery engineer	Mapping
AO11: Work planning, safety documentation and asset records Issues, clears and cancels safety documents and briefs documents' recipients. Operates system apparatus and carries out pre-energisation checks. Plans network outages and maintains asset records, ensuring these are up to date.	K53, K54, K55, K56, K60, K61 S41, S42, S47, S51
AO12: Work management Directs and issues work instructions and monitors working party activities and equipment to ensure work is carried out in line with specifications, requirements and safety procedures. Carries out pre-energisation checks.	K57, K58, K59, S43, S44, S45, S46, S48, S49, S50

Assessment requirements

Assessment organisations must set apprenticeship assessments. Assessment organisations should consider how technology and digital tools can support innovation and efficiency.

Assessment organisations must design assessments to include at least one **observation**.

Any additional assessment(s) must be selected from the following list of methods to ensure the assessment outcomes are met in full:

- **additional observation**
- **interview**
- **professional discussion**
- **question and answer**
- **written assessment**
- **project**
- **portfolio**

Assessment must be conducted in accordance with the relevant safety rules and procedures.

Apprentices may be assessed at any appropriate point during their apprenticeship programme.

Assessors undertaking on-site observation must have the necessary permissions to access the site and to oversee the work being observed

AO3 and AO11 must be assessed in person through on-site observation.

Performance descriptors

Performance descriptors describe the level of performance required to achieve a pass or distinction grade. Assessment organisations must design assessments that align with these descriptions.

Performance Category	Pass	Distinction
Applied Knowledge	Demonstrates sound application of electric power systems engineering knowledge in a broad range of complex or technical work activities, performed in a variety of contexts.	Demonstrates precise application of electric power systems engineering knowledge in a broad range of complex or technical work activities, performed in a variety of contexts.
Applied Skills	Selects and applies practical electric power	Adapts and applies practical electric power

	systems engineering skills consistently in a broad range of complex or technical work activities, performed in a variety of contexts. Solves complex and non-routine electric power network engineering problems which are normally fairly well defined, with sound reasoning.	systems engineering skills with flexibility and operational fluency in a broad range of complex or technical work activities performed in a variety of contexts. Solves complex and non-routine electric power systems engineering problems which are normally fairly well defined, to improve outcomes.
Regulatory and Procedural Awareness	Analyses and interprets electricity network safety regulations, legislation and organisational procedures relevant to the electric power network engineering context with sound judgement.	Applies evaluation of electric safety regulations, legislation and organisational procedures relevant to the electric power network context with insight and flexibility.
Communication and Collaboration	Communicates clearly and collaborates effectively with colleagues and stakeholders, adapting communication approaches to meet different needs or contexts. Contributes effectively to team working.	Communicates confidently with colleagues and stakeholders, tailoring communication approaches effectively for different needs or contexts. Actively supports team working.
Information Use and Decision Making	Analyses and interprets electric power systems engineering information from diverse sources relevant to the role, making well supported conclusions with sound reasoning	Applies evaluation of electric power systems engineering information from diverse sources relevant to the role, making informed conclusions, providing insightful justification for decisions that improve outcomes.
Responsibility and Autonomy	Takes responsibility for courses of action in the electric power systems engineering context, including, where relevant, taking responsibility for the	Proactively takes responsibility for courses of action in the electric power systems engineering context, with confident autonomy and

	work of others and allocation of resources. Exercises responsibility, autonomy and judgement within broad but generally well-defined parameters.	sound judgement within broad but generally well-defined parameters.
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Professional recognition

This apprenticeship aligns with the professional body recognition detailed in the occupational standard.

Please contact the relevant professional body for further information.

Additional qualification

The qualification detailed in the occupational standard must be completed before the end of the apprenticeship.