



Australian Government

Department of Education, Employment and Workplace Relations

UEPOPS452A Conduct operational checks and carry out corrective action on in-service electrical plant

Release: 1

UEPOPS452A Conduct operational checks and carry out corrective action on in-service electrical plant

Modification History

Not applicable.

Unit Descriptor

Unit Descriptor

1) Scope:

1.1) Descriptor

This unit deals with the skills and knowledge required to conduct operational checks and carry out any necessary corrective action on in-service electrical plant.

Application of the Unit

Application of the Unit 2)

This unit is intended to augment formally acquired competencies. It is suitable for employment-based programs under an approved contract of training.

Licensing/Regulatory Information

License to practice 3)

The skills and knowledge described in this unit do not require a licence to practise in the workplace. However, practice in this unit is subject to regulations directly related to Occupational Health and Safety.

Pre-Requisites

Prerequisite Unit(s) 4)

Competencies 4.1)

Granting of competency in this unit shall be made only after competency in the following unit(s) has/have been confirmed.

Where pre-requisite pathways have been identified. All competencies in the Common Unit Group must be have been completed.

There are no prerequisite units.

Literacy and numeracy skills 4.2)

Participants are best equipped to achieve this unit if they have reading, writing and numeracy skills indicated by the following levels. A description of what each level entails is provided in Section 2.3.1 Language, Literacy and Numeracy.

Reading 4 Writing 4 Numeracy 4

Employability Skills Information

Employability Skills 5)

The required outcomes described in this unit of competency contain applicable facets of Employability Skills. The Employability Skills Summary of the qualification in which this unit of competency is packaged will assist in identifying Employability Skill requirements.

Elements and Performance Criteria Pre-Content

6) Elements describe the essential outcomes of a competency standard unit

Performance Criteria describe the required performance needed to demonstrate achievement of the element.
Assessment of performance is to be consistent with the Evidence Guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1 Plan for plant in-service checks	1.1 Safety issues are identified to comply with enterprise/site requirements
	1.2 Work, plant and resource requirements are identified from relevant information, requests, work orders or equivalent and documentation.
	1.3 Plant status and work requirements are clarified/confirmed with appropriate parties or by site inspection
	1.4 Equipment is check for correct calibration, operation. correct size, type and quantity of materials/components are determined, obtained and inspected for compliance with the job specifications
	1.5 Potential hazards are identified and prevention and/or control measures are selected in accordance with the work plan and site procedures
	1.6 Pre access checks are carried out in accordance with enterprise and site requirements
	1.7 Where appropriate, the teams and individuals roles and responsibilities within the team are identified and, where required, assist in the provision of the on-the-job training
2 Carry out in-service electrical checks	2.1 Systems/plant is operated in accordance with enterprise/site and manufacturer operating procedures
	2.2 In-service electrical checks are done in conjunction with others involved in, or affected by, the work in accordance with the work plan
	2.3 Plant checks are monitored and observed to detect deviations from normal operation
	2.4 In-service checks are performed in accordance with defined enterprise procedures.
	2.5 System/plant integrity and personnel safety are maintained through consultation with

ELEMENT	PERFORMANCE CRITERIA
3 Carry out necessary corrective actions	appropriate personnel, and reference to plant, technical and operational documentation
	3.1 Corrective actions are identified after analysing plant operations in accordance with manufacturer and enterprise/site procedures
	3.2 Required isolations are confirmed where appropriate in accordance with site requirements
	3.3 Equipment is modified using appropriate plans, drawings and texts in accordance with the work plan
	3.4 Equipment is modified in conjunction with others involved in, or affected by, the work in accordance with the work plan
	3.5 Corrective actions are carried out, mindful of effects on, or unnecessary loss of, other equipment in accordance with the work plan
	3.6 Modified equipment is set up to suit operational requirements and in accordance with manufacturer specifications and the work plan
3 Complete the work	3.7 Final plant inspection is performed and permits relinquished as required in accordance with the work plan
	3.1 When checks and corrective actions are completed, control measures are returned to required operational status where appropriate.
	3.2 Appropriate personnel are notified of the completion of work in accordance with enterprise/site procedures
	3.3 Plant problems and corrective actions are reported and logged in accordance with enterprise/site procedures
	3.4 Check results and corrective actions are interpreted and documented in accordance with enterprise/site procedures

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

8) This describes the essential skills and knowledge and their level, required for this unit.

Evidence shall show that knowledge has been acquired of conducting operational checks on in-service electrical plants.

The extent of the Essential Knowledge and Associated Skills required follows:

KS01-PO452A Operational checks and corrective action on in-service electrical plant

T1 Evidence shall show that knowledge has been acquired for safe working practices of:

- Relevant environmental, occupational health and safety legislation and regulations
- Enterprise procedures
- Plant drawings and manufacturers manuals
- Introduction to and typical arrangements of power production plant
- Relevant plant and equipment, its location and operating parameters
- Electric motor types and characteristics
- Switchgear types and characteristics
- Electrical protection types and characteristics
- Electrical fundamentals
- Transformers, types and characteristics
- Isolation procedures
- Modification techniques
- Test and measurement instruments;
- Circuit plan appreciation;
- Engineering and workshop practice;
- Plant status
- Enterprise recording procedures

T2 Specific skills needed to achieve the Performance Criteria:

- Interpret plant drawings and manufacturers manuals
- Apply enterprise recording procedures
- Identify plant status
- Prepare plant/equipment for checks
- Communicate effectively
- Maintain plant integrity
- Apply data analysis techniques and tools
- Recognise abnormal plant operating conditions
- Apply or determine appropriate corrective actions required
- Carry out appropriate corrective actions
- Plan and prioritise work

REQUIRED SKILLS AND KNOWLEDGE

- Interpret remote indication of plant status and condition

Evidence Guide

EVIDENCE GUIDE

9) This provides essential advice for assessment of the unit of competency and must be read in conjunction with the Performance Criteria and the Range Statement of the unit and the Training Package Assessment Guidelines.

The Evidence Guide forms an integral part of this Competency Standard Unit and shall be used in conjunction with all components parts of this unit and, performed in accordance with the Assessment Guidelines of this Training Package.

Overview of Assessment

9.1)

Longitude competency development approaches to assessment, such as Profiling, require data to be reliably gathered in a form that can be consistently interpreted over time. This approach is best utilised in Apprenticeship programs and reduces assessment intervention. It is the Industry's preferred model for apprenticeships. However, where summative (or final) assessment is used it is to include the application of the competency in the normal work environment or, at a minimum, the application of the competency in a realistically simulated work environment. It is recognised that, in some circumstances, assessment in part or full can occur outside the workplace. However, it must be in accord with Industry and, Regulatory policy in this regard.

Methods chosen for a particular assessment will be influenced by various factors. These include the extent of the assessment, the most effective locations for the assessment activities to take place, access to physical resources, additional safety measures that may be required and the critical nature of the competencies being assessed.

The critical safety nature of working with electricity, electrical equipment, gas or any other hazardous substance/material carries risk in deeming a person competent. Hence, sources of evidence need to be 'rich' in nature so as to minimise error in judgment. Activities associated with normal every day work have a bearing on the decision as to how much and how detailed the data gathered will contribute to its 'richness'. Some skills are more critical to safety and operational requirements while the same skills may be more or less frequently practised. These points are raised for the

assessors to consider when choosing an assessment method and developing assessment instruments. Sample assessment instruments are included for Assessors in the Assessment Guidelines of this Training Package.

**Critical aspects
of evidence
required to
demonstrate
competency in
this unit** **9.2)**

Before the critical aspects of evidence are considered all prerequisites shall be met.
Evidence for competence in this unit shall be considered holistically. Each element and associated Performance Criteria shall be demonstrated on at least two occasions in accordance with the “Assessment Guidelines – UEP12”. Evidence shall also comprise:

- A representative body of work performance demonstrated within the timeframes typically expected of the discipline, work function and industrial environment. In particular this shall incorporate evidence that shows a candidate is able to:
 - Implement Occupational Health and Safety workplace procedures and practices including the use of risk control measures as specified in the Performance Criteria and Range Statement
 - Apply sustainable energy principles and practices as specified in the Performance Criteria and Range Statement
 - Demonstrate an understanding of the essential knowledge and associated skills as described in 6) Essential Knowledge and Associated Skills of this unit
 - Conduct work observing the relevant Anti-Discrimination legislation, regulations, policies and workplace procedures
- Demonstrated performance across a representative range of contexts from the prescribed items below:
 - Knowledge and application of relevant sections of: Occupational Health and Safety legislation; Statutory legislation; Enterprise/site safety procedures; Enterprise/site emergency procedures
 - Dealing with an unplanned event by drawing on essential knowledge and skills to provide appropriate solutions incorporated in the holistic assessment with the above listed items

Context of and specific resources for assessment **9.3)**

This unit should be assessed as it relates to normal work practice using procedures, information and resources typical of a workplace. This should include:

- OHS policy and work procedures and instructions.
- Suitable work environment, facilities, equipment and materials to undertake actual work as prescribed by this unit.

Competency Standards should be assessed in the workplace or simulated workplace and under the normal range of workplace conditions.

Assessment of this unit will be supported with documentary evidence, by means of endorsement stating type and application of work.

In addition to the resources listed above in Context of assessment', evidence should show competency working, in limited spaces, with different types of plant and equipment as well as different structural/construction types and methods and in a variety of environments.

Method of assessment **9.4)**

This unit shall be assessed by methods given in Section 1.3.00 Assessment Guidelines.

Note: Competent performance with inherent safe working practices is expected in the Industry to which this unit applies. This requires that the specified essential knowledge and associated skills are assessed in a structured environment which is primarily intended for learning/assessment and incorporates all necessary equipment and facilities for learners to develop and demonstrate the essential knowledge and skills described in this unit.

Concurrent assessment and relationship with other units **9.5)**

There are no recommended concurrent assessments with this unit, however in some cases efficiencies may be gained in terms of

learning and assessment effort being concurrently managed with allied competency standard units where listed.

Nil

Range Statement

RANGE STATEMENT

10) This relates to the unit of competency as a whole providing the range of contexts and conditions to which the Performance Criteria apply. It allows for different work environments and situations that will affect performance.

Operational Checks may include fault finding, performance checking, indication and protection checks and work on control and trip circuits and minor testing.

Work may be performed with equipment on line.

Key indicators may include frequency, machine/ equipment voltage and current, plant temperatures, reactive power flows, power factor, plant load capabilities, protection settings, visual and audible indicators, analogue and digital displays.

Plant and/or equipment may include electrical plant associated with turbines; generators; fans; pumps; heat exchangers; cooling systems; chemical treatment and water quality system; fuel delivery system; auxiliary plant; fire protection system; and motors; transformers; switchgear; electrical/electronic control systems; generator excitation system; and switchboards.

Safety standards may include relevant sections of Occupational Health and Safety legislation, enterprise safety rules, national standards for plant, relevant state and federal legislation and Australian standards.

Information and documentation sources may include verbal or written communications; enterprise safety rules documentation; enterprise operating instructions; equipment and alarm manuals; dedicated computer equipment; enterprise standing instructions and plant notes; enterprise log books; manufacturer operation and maintenance manuals.

Technical and operational indicators may include stimuli (audio, smell, touch, visual), remote or local indicators and recorders, computers and alarms (visible and or audible)

Appropriate personnel for consultation, to give or receive direction may include supervisor/team leader or equivalent; other coordinators of energy production; other operating staff; technical and engineering officers or equivalent; maintenance personnel; and contractor staff.

Work completion details may include plant and maintenance records, job cards, check sheets and on device labelling updates.

Work site environment may be affected by nearby plant or processes, e.g. heat, noise, dust, oil, water and chemical.

Isolations can refer to electrical/mechanical or other associated processes.

Generic terms are used throughout this Training Package for vocational standard shall be regarded as part of the Range Statement in which competency is demonstrated. The definition of these and other terms are given in Section 2.1 Preliminary Information and Glossaries.

Unit Sector(s)

Not applicable.

Competency Field

Competency Field **11)**
Operations.