Australian Government

UEENEEG171A Install, set up and commission interval metering

Release 3

INDUSTRY SKILLS COUNCILS
Creating Australia's Future

UEENEEG171A Install, set up and commission interval metering

Modification History

Not Applicable

Unit Descriptor

Unit Descriptor **1)**

1.1) Descriptor

This unit covers the installation, set up and commission of interval metering for measurement of energy use by consumers under choice of supplier arrangement. It encompasses working safely and to installation and set up standards, evaluating the integrity of metering wiring and earthing systems, fixing metering, making power and communication connections, setting meter parameters and completing the necessary documentation.

Application of the Unit

Application of the Unit **4)**

This unit is intended as an additional competency to relevant competencies previously acquired. It is suitable for employment-based programs under an approved contract of training at the aligned AQF 3 level or higher.

- license to practice in the workplace subject to regulations for undertaking of electrical work.

Practice in workplace and during training is also subject to regulations directly related to occupational health and safety and where applicable contracts of training such as apprenticeships.

Note:
1. Compliance with permits may be required in various jurisdictions and typically relates to the operation of plant, machinery and equipment such as elevating work platforms, powder operated fixing tools, power operated tools, vehicles, road signage and traffic control and lifting equipment. Permits may also be required for some work

Application of the Unit **4)**

environments such as confined spaces, working aloft, near live electrical apparatus and site rehabilitation.
2. Compliance may be required in various jurisdictions relating to currency in First Aid, confined space, lifting and risk safety measures.

Licensing/Regulatory Information

1.2) License to practice

The skills and knowledge described in this unit require a license to practice in the workplace subject to regulations for undertaking of electrical work. Practice in workplace and during training is also subject to regulations directly related to occupational health and safety and where applicable contracts of training such as apprenticeships.

Pre-Requisites

Prerequisite Unit(s) **2)**

2.1) Competencies

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

UEENEEE101A	Apply Occupational Health and Safety regulations, codes and practices in the workplace
UEENEEE102A	Fabricate, dismantle, assemble of electrotechnology components
UEENEEE104A	Solve problems in d.c circuits
UEENEEE105A	Fix and secure electrotechnology equipment

Prerequisite Unit(s) **2)**

UEENEEE107A	Use drawings, diagrams, schedules, standards, codes and specifications
UEENEEE137A	Document and apply measures to control OHS risks associated with electrotechnology work
UEENEEG006A	Solve problems in single and three phase low voltage machines
UEENEEG033A	Solve problems in single and three phase electrical apparatus and circuits
UEENEEG063A	Arrange circuits, control and protection for general electrical installations
UEENEEG101A	Solve problems in electromagnetic devices and related circuits
UEENEEG102A	Solve problems in low voltage a.c. circuit
UEENEEG103A	Install low voltage wiring and accessories
UEENEEG106A	Terminate cables, cords and accessories for low voltage circuits
UEENEEG107A	Select wiring systems and cables for low voltage general electrical installations
UEENEEG108A	Trouble-shoot and repair faults in low voltage electrical apparatus and circuits
UEENEEG109A	Develop and connect electrical control circuits
UEENEEG104A	Install appliances, switchgear and associated accessories for low voltage electrical installations

Employability Skills Information

Employability Skills **3)**

This unit contains Employability Skills

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 unit of competency

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 Prepare to install, set up and commission interval metering.	1.1	OHS procedures for a given work area are identified, obtained and understood.
	1.2	Health and safety risks are identified and established risk control measures and procedures in preparation for the work are followed.
	1.3	Safety hazards that have not previously been identified are noted and established risk control measures are implemented. (Note 1.)
	1.4	Switchboard on which the meter is to be installed is inspected and evaluated for compliance with safety and functionality standards. (Note 2)
	1.5	Approval to rectify safety and/or functionality defects of the switchboard is sought from person of higher authority in accordance with established procedures.

ELEMENT	PERFORMANCE CRITERIA	
	1.6	Installation of the meter and rectification work is prepared in consultation with other effected by the work and sequenced appropriately. (Note 3)
	1.7	Material needed for the work is obtained in accordance with established procedures and checked against job requirements.
	1.8	Tools, equipment and testing devices needed to for the work are obtained in accordance with established procedures and checked for correct operation and safety.
2 Install, set up and commission interval metering.	2.1	OHS risk control measures and procedures for carrying out the work are followed.
	2.2	The need to test or measure live is determined in strict accordance with OHS requirements and when necessary conducted within established safety procedures.
	2.3	Existing metering is checked as being isolated in strict accordance OHS requirements and procedures.
	2.4	Approved rectification work is carried out to comply with standards and in accordance with established procedures.
	2.5	Metering is installed to comply with technical standards and job specifications and requirements.
	2.6	Metering power and communication connections are made in accordance with manufacture's specifications and functional and regulatory requirements.
	2.7	Meter operating parameters are set in accordance with manufacture's specifications and functional and regulatory requirements.
	2.8	Unexpected situations are dealt with safely and with the approval of an authorised person
	2.9	Ongoing checks of the quality of installed apparatus are undertaken in accordance with established procedures.
	2.10	Metering installation is carried out efficiently without unnecessary waste of materials or damage to apparatus, circuits, the surrounding environment or services and using sustainable energy principles.

ELEMENT	PERFORMANCE CRITERIA	
3 Completion and report metering installation activities.	3.1	OHS work completion risk control measures and procedures are followed and supply is reinstated to the installation.
	3.2	Work site is cleaned and made safe in accordance with established procedures.
	3.3	Final checks are made to that the installed metering conforms to requirements.
	3.4	'As-installed' metering and rectification work is documented and appropriate persons notified in accordance with established procedures.

Note.
1. Examples of hazards likely to be encountered are asbestos reinforced switchboard panels, deteriorating switchgear and cabling and location of the switchboard.
2. Safety and functionality standards include the clear identification of switchboard components and their function, sound electrical insulation of wiring and components, sound MEN and main earth connections, fire integrity and access.
3. Preparation includes arranging for the safe isolation of the installation, access to a telecommunications connection where two-way metering is to be installed and access to a transducer connection where gas metering is to be included.

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

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

Evidence shall show that knowledge has been acquired of safe working practices and installing, setting up and commissioning of interval metering.

All knowledge and skills detailed in this unit should be contextualised to current industry practices and technologies.

KS01-EG171A Interval metering

Evidence shall show an understanding of interval metering to an extent indicated by the following aspects:

T1 Reasons for metering and the regulated market (Regulations)

T2 Metering layouts and requirements

- purpose, types and applications.
- metering equipment.

REQUIRED SKILLS AND KNOWLEDGE

- varying arrangements for metering and meter layouts

T3 Interval metering concepts and installation

- Meter types
- Meter construction – block diagram
- Meter functions
- Importing and exporting energy
- Classes of meters
- Single and polyphase meters
- Purpose, types and applications.
- Installation and power connection arrangements.
- Communication methods and arrangements.
- Connections for gas metering.
- Procedures for setting meter parameters.

Evidence Guide

EVIDENCE GUIDE

9) The evidence guide provides advice on assessment and must be read in conjunction with the Performance Criteria, Required Skills and Knowledge, the Range Statement and the Assessment Guidelines for this Training Package.

The Evidence Guide forms an integral part of this unit. It must be used in conjunction with all parts of this unit and performed in accordance with the Assessment Guidelines of this Training Package.

Overview of Assessment

9.1)

Longitudinal 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 accordance with industry and regulatory policy.

Methods chosen for a particular assessment will be influenced by various factors. These include the extent of the assessment, the most

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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. Sources of evidence need to be 'rich' in nature 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 - UEE07'. Evidence shall also comprise:

- A representative body of performance criteria 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:

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- 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 this unit . It may be required by some jurisdictions that RTOs provide a percentile graded result for the purpose of regulatory or licensing requirements.
- Demonstrate an appropriate level of skills enabling employment
- Conduct work observing the relevant Anti Discrimination legislation, regulations, polices and workplace procedures

- Demonstrated consistent performance across a representative range of contexts from the prescribed items below:
  - Install and set up interval metering as described in 8) and including:

    A Inspecting and evaluating safety and functionality compliance of the switchboard accurately.

    B Following established procedures to obtain approval to rectify non-compliance aspects of the switchboard.

    C Carrying out preparation work effectively.

    D Rectifying compliance defects.

    E Placing and securing metering correctly.

    F Making power and communications connections in accordance with manufacture's specifications and functional and regulatory requirements.

    G Setting meter parameters in accordance with manufacture's specifications and functional and regulatory requirements.

    H Reinstating supply to the installation safely.

    I Documenting metering and rectification work and notifying appropriate persons in accordance with established procedures.

    J Dealing with unplanned events by drawing on essential

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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.

Resources required to assess this unit are listed above in Context of assessment', which should also be used in the formal learning/assessment environment.

Note:

Where simulation is considered a suitable strategy for assessment, conditions must be authentic and as far as possible reproduce and replicate the workplace and be consistent with the approved industry simulation policy.

The resources used for assessment should reflect current industry practices in relation to installing and setting up interval metering.

Method of assessment

9.4)

This unit shall be assessed by methods given in Volume 1, Part 3 'Assessment Guidelines'.

Note:
Competent performance with inherent safe working practices is expected in the industry to which this unit applies. This requires assessment 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 concurrent assessment recommendations for this unit.

Range Statement

RANGE STATEMENT

8) This relates to the unit 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.

This unit shall be demonstrated in relation to the installation of at least:

- a single phase interval meter
- a two-way interval meter
- an interval meter where compliance rectification work is required

Generic terms used throughout this Vocational Standard shall be regarded as part of the Range Statement in which competency is demonstrated. The definition of these and other terms that apply are given in Volume 2, Part 2.1.

Unit Sector(s)

Not Applicable

Competency Field

2.2) Literacy and numeracy skills

Participants are best equipped to achieve competency in this unit if they have reading, writing and numeracy skills indicated by the following scales. Description of each scale is given in Volume 2, Part 3 'Literacy and Numeracy'

Reading	4	Writing	4	Numeracy	4

2.2) Literacy and numeracy skills

Competency Field **5**)

Electrical