Australian Government

Department of Education, Employment and Workplace Relations

UEENEEP001B Disconnect and reconnect fixed wired electrical equipment connected to a Low Voltage supply

Release: 1

UEENEEP001B Disconnect and reconnect fixed wired electrical equipment connected to a Low Voltage supply

Modification History

Not Applicable

Unit Descriptor

Unit Descriptor **1**)

1.1) **Descriptor**

This unit covers disconnecting and reconnecting fixed wired electrical equipment. This may be incidental to or a primary and regular function of work related to a principle work function. It encompasses working safely, identifying supply arrangements, following isolation procedures, selecting and using testing and measuring devices, terminating and connecting cables and conductors, safely testing and reporting and excludes disconnecting or reconnecting circuits at a switchboard or to general electrical accessories (including switches, socket outlets, circuit protective devices etc); or installation of or alteration to any part of the fixed electrical wiring system (defined as electrical installing work).

Application of the Unit

Application of the Unit **4**)

This unit applies to any formal recognition for this standard at the aligned AQF 2/3 level or higher.

Licensing/Regulatory Information

1.2) License to practice

The skills and knowledge described in this unit requires a license to practice in the workplace where plant and equipment operate at voltage above 50 V a.c. or 120 V d.c. However other conditions may apply in some jurisdictions subject to regulations related to electrical work. Practice in the 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:
Candidates are to meet regulator eligibility requirements by providing formal confirmation from the relevant state/territory regulator for the respective work class and scope of work prior to developing and being conferred competent.

Pre-Requisites

Prerequisite Unit(s) **2)**

2.1) Competencies

Competencies needed for hot waters servicing, pool servicing, mechanical maintenance, appliance servicing, emergency services and equipment repair.

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 disconnect electrical equipment.	1.1 Disconnection is planned to ensure OHS policies and procedures are followed.
	1.2 Appropriate persons are consulted to ensure work is coordinated effectively with others involved in the work site.
	1.3 Safety hazards which have not previously been electrical characteristics of electrical equipment and electrical supply are determined and recorded in accordance with established procedures.
	1.4 The point of isolation of electrical equipment to be disconnected is determined.
	1.5 Tools, equipment and testing devices needed to carry out the work are obtained in accordance with established procedures and checked for

ELEMENT	PERFORMANCE CRITERIA	
		correct operation and safety.
2 Disconnect electrical equipment.	2.1	OHS policies and procedures are followed.
	2.2	Electrical equipment is isolated in accordance with AS/NZS 4836:2001 and established procedures (see Range Statement).
	2.3	Conductor connection sequence is recorded and labelled in accordance with established procedures.
	2.4	Visual checks of the electrical equipment and associated wiring are carried out in accordance with established procedures to detect any abnormal or obvious damage or fault.
	2.5	Isolated equipment is confirmed as de-energised.
	2.6	Electrical equipment is disconnected from fixed wiring without damage to other components.
	2.7	Approval is obtained in accordance with established procedures from appropriate personnel, before any contingencies are implemented.
	2.8	Disconnected conductors/cables are terminated in accordance with requirements to ensure they are safe and present no potential hazard.
3 Prepare to reconnect electrical equipment.	3.1	Reconnection is planned to ensure OHS policies and procedures are followed.
	3.2	Appropriate personnel are consulted to ensure work is coordinated effectively with others involved in the work site.
	3.3	The point of isolation of the circuit to which the electrical equipment is to be connected is determined.
	3.4	Replacement electrical equipment is selected on the basis of rating and characteristics being the same as that of the original electrical equipment.
	3.5	Appropriate personnel are consulted in the event that replacement electrical equipment is not

ELEMENT	PERFORMANCE CRITERIA	
		available.
	3.6	Original and/or replacement electrical equipment is tested to ensure it is safe to connect to the electrical supply and use.
	3.7	Tools, equipment and testing devices needed to carry out the work are obtained in accordance with established procedures and checked for correct operation and safety.
4 Reconnect electrical equipment.	4.1	OHS policies and procedures are followed.
	4.2	Measures are taken to ensure circuit to which electrical equipment is to be connected remains isolated and de-energised in accordance with AS/NZS 4836:2001.
	4.3	The continuity of the protective earthing conductor is tested to determine whether it is sufficiently low.
	4.4	The resistance between the protective earthing conductor and the neutral conductor is tested to determine whether it is sufficiently low, i.e. not greater than 2 Ohms.
	4.5	The insulation resistance of active conductors is tested to confirm that it is greater than 1 Megohm.
	4.6	An appropriate qualified person is engaged to rectify any non-compliance condition revealed by the testing under item 4.3 to 4.5.
	4.7	Continuity between exposed conductive parts of the equipment and the main earth or metal switchboard enclosure is confirmed.
	4.8	Electrical equipment is connected to comply with requirements.
	4.9	Connections to the equipment are checked to confirm they are correct.

ELEMENT	PERFORMANCE CRITERIA
5 Test the reconnected electrical equipment for safe operation.	5.1 OHS policies and procedures, and established procedures for the reinstatement of isolated circuits and electrical equipment are followed.
	5.2 Arrangements are made with appropriate personnel to test the operation of the electrical equipment in accordance with established procedures.
	5.3 Operational non-conformances are identified and reported in accordance with established procedures.
6 Identify and report faults	6.1 Electrical equipment is isolated in accordance with established procedures.
	6.2 Other OHS policies and procedures are followed.
	6.3 Visual checks of the equipment to be disconnected and/or reconnected are carried out in accordance with established procedures to detect any abnormal or obvious damage or fault.
	6.4 Fault(s) at point of disconnection and/or reconnection are identified and reported in accordance with established procedures.
	6.5 Approval is obtained in accordance with established procedures from appropriate personnel, before any contingencies are implemented.

ELEMENT	PERFORMANCE CRITERIA
7 Provide status report(s).	7.1 Status report(s) are completed and notified in accordance with established procedures.

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 disconnecting and reconnecting fixed wired electrical equipment connected to a Low Voltage supply.
All knowledge and skills detailed in this unit should be contextualised to current industry practices and technologies.
The extent of the essential knowledge and associated skills (EKAS) required is given in Volume 2 - Part 2.2 EKAS. It forms an integral part of this unit.

2.1.5.1	Power cable and conductor terminations
2.2.2	Enterprise reporting and recording system
2.8.1.1	Basic electrical principles
2.18.1	Occupational Health and Safety principles
2.18.2	Electrical Safe working practices
2.19.29	Disconnect/Reconnect
2.19.28	Fault find - General Principles
2.19.39	Produce Status Reports using established procedures

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 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)
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-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. 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 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 issues inherent in working with electricity, electrical equipment, gas or any other hazardous substance/material present a challenge for those determining competence. Sources of evidence need to be 'rich' in nature to minimise error in judgment.
Activities associated with normal everyday work influence decisions about how/how much 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.

EVIDENCE GUIDE

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 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 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:
  - Disconnect and reconnect fixed wired electrical equipment connected to a Low Voltage supply as described in 8) for each endorsement and including:

    A OHS practice

    B Determining electrical characteristics of equipment

    C Selecting tools, equipment, and testing devices

    D Identifying point of installation

EVIDENCE GUIDE

E Identifying and isolating circuit (including testing for safe isolation)

F Preparing to disconnect electrical equipment

G Undertaking visual checks of the electrical equipment and associated wiring to detect and reporting any abnormal or obvious damage or fault

H Disconnecting of electrical equipment

I Preparing to reconnect electrical equipment

J Reconnection of electrical equipment

K Testing of the reconnected electrical equipment for safe operation including polarity and earth continuity

L Identifying fault(s) at point of disconnection and/or reconnection in accordance with established procedures

M Dealing with unplanned events by drawing on essential knowledge and skills to provide appropriate solutions incorporated in a holistic assessment with the above listed items

Note:
Successful completion of relevant vendor training may be used to contribute to evidence on which competency is deemed. In these cases the alignment of outcomes of vendor training with performance criteria and critical aspects of evidence shall be clearly identified.

EVIDENCE GUIDE

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.
- Workplace evidence to be produced in an industry/regulator approved recording system (logbook) confirming skills development under appropriate supervision

These should be part of 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 disconnecting and reconnecting fixed wired electrical equipment connected to a Low Voltage supply.

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 intended primarily 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.

Competency shall be demonstrated in relation to disconnecting and reconnecting at least one of the following endorsed types of electrical equipment connected to supplies up to 1,000V a.c or 1,500V d.c:

- Appliances (O)
- Pre-assembled types 1 and 2 cold cathode neon signs (N)
- Composite equipment incorporating one or more current-using devices and/or controls (P)

Note:
Examples of composite equipment are a self-contained refrigeration unit, machine tools, and modular telephone booths.

- Control devices (Q)
- Electrical water heaters (R)
- Motors (S)

Note:
1. Each endorsement achieved is to be reported separately.
2. Limitations of this unit. This unit does not cover the knowledge and skills necessary for work:
a) where high fault currents are possible
b) on complex electrical apparatus and circuits
c) associated with fixed wiring other than disconnecting and reconnecting electrical equipment as listed in the Range Statement including locating and rectifying faults of circuits at a switchboard or to general electrical accessories (including switches, socket outlets, circuit protective devices etc); or installation of or alteration to any part of the fixed electrical wiring system (defined as electrical installing work),
d) on luminaires,
d) in hazardous areas or on electrical equipment that is part of an explosion-protection technique.

Safe Working. Safe procedures for working within in the scope of this unit shall be in accordance with AS/NZS 4836:2001 'Safe working on low-voltage electrical installations.'

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

RANGE STATEMENT

and other terms that apply are given in Volume 2, Part 2.1.

Unit Sector(s)

Not Applicable

Custom Content Section

2.2) Literacy and numeracy skills

Participants are best equipped to achieve 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	3	Writing	3	Numeracy	3

Competency Field

Competency Field **5)**

Restricted and Specialisations