



Australian Government

UEEEL0053 Maintain operation of electrical marine equipment and systems

Release: 2

UEEEL0053 Maintain operation of electrical marine equipment and systems

Modification History

Release 2. Minor change. Typographic error in prerequisites corrected.

Release 1. This is the first release of this unit of competency in the UEE Electrotechnology Training Package

Application

This unit involves the skills and knowledge required to service electrical systems and equipment on maritime vessels and ships.

It includes working safely, planning to maintain marine electrical systems and equipment, applying logical fault diagnosis procedures, following fault rectification workplace procedures and maintaining the necessary operational documentation.

The skills and knowledge described in this unit require a licence or permit to practice in the workplace where work is carried out on electrical installations which are designed to operate at voltages greater than 50 volt (V) alternating current (a.c.) or 120 V direct current (d.c.).

Competency development activities in this unit are subject to regulations directly related to licensing. Where a licence or permit to practice is not held, a relevant contract of training, such as an Australian Apprenticeship, may be required.

Additional and/or 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 work health and safety (WHS)/occupational health and safety (OHS) regulations.

Pre-requisite Unit

UEECD0007 Apply work health and safety regulations, codes and practices in the workplace

UEECD0019 Fabricate, assemble and dismantle utilities industry components

UEECD0020 Fix and secure electrotechnology equipment

UEECD0051 Use drawings, diagrams, schedules, standards, codes and specifications

UEEEL0003 Arrange circuits, control and protection for general electrical installations

UEEEL0020 Solve problems in low voltage a.c. circuits

UEEEL0023 Terminate cables, cords and accessories for low voltage circuits

UEEEL0019 Solve problems in direct current (d.c.) machines

UEEEL0021 Solve problems in electromagnetic devices

UEEEL0014 Isolate, test and troubleshoot low voltage electrical circuits

UEEEL0008 Evaluate and modify low voltage heating equipment and controls

UEEEL0009 Evaluate and modify low voltage lighting circuits, equipment, and controls

UEEEL0010 Evaluate and modify low voltage socket outlets circuits

UEEEL0024 Test and connect alternating current (a.c.) rotating machines

UEEEL0025 Test and connect transformers

and

UEECD0043 Solve problems in direct current circuits

or

UEECD0044 Solve problems in multiple path circuits

UEECD0046 Solve problems in single path circuits

Competency Field

Electrical

Unit Sector

Electrotechnology

Elements and Performance Criteria

ELEMENTS

Elements describe the essential outcomes.

1 Prepare to maintain operation of electrical marine equipment

PERFORMANCE CRITERIA

Performance criteria describe the performance needed to demonstrate achievement of the element.

- 1.1** WHS/OHS requirements and workplace procedures for a given work area are identified and understood
- 1.2** WHS/OHS risk control measures and workplace procedures in preparation for the work are followed
- 1.3** Scope of electrical work to be undertaken is determined from fault/breakdown reports and/or discussions with appropriate person/s
- 1.4** Advice is sought from work supervisor to ensure work is coordinated effectively with others
- 1.5** Sources of materials required for the work are determined in accordance with workplace procedures

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| | 1.6 | Tools, equipment and testing devices needed to locate fault/s are obtained in accordance with workplace procedures and checked for correct operation and safety |
| 2 Maintain operation of electrical marine equipment | 2.1 | WHS/OHS risk control measures and workplace procedures for carrying out the work are followed |
| | 2.2 | Need to test or measure live electrical work is determined in accordance with WHS/OHS requirements and workplace procedures |
| | 2.3 | Electrical circuits/machines/plant are checked and isolated in accordance with WHS/OHS requirements and workplace procedures |
| | 2.4 | Safety hazards resulting from fault/s or breakdown are documented on job safety assessments, risks assessed and control measures implemented in consultation with appropriate person/s and workplace procedures |
| | 2.5 | Fault-finding analysis is approached methodically using measured and calculated values of electrical circuit/apparatus parameters |
| | 2.6 | Electrical circuit/apparatus components are dismantled, as required, and parts stored to protect against loss or damage |
| | 2.7 | Faulty circuits/components are rechecked and fault status identified |
| | 2.8 | Materials/replacement parts required to rectify faults are sourced and obtained in accordance with workplace procedures |
| | 2.9 | Effectiveness of repair/s is tested in accordance with workplace procedures |
| | 2.10 | Electrical apparatus and circuits are inspected reassembled, tested and prepared for return to service |
| | 2.11 | Unplanned situations are responded to safely and in accordance with workplace procedures with the approval of an authorised person/s |
| | 2.12 | Fault-finding and repair activities are carried out without damage to apparatus, circuits, the surrounding environment or services using sustainable energy |

practices

- 3 Complete work and report on operation of electrical marine equipment**
- 3.1** WHS/OHS work completion risk control measures and workplace procedures are followed
- 3.2** Reusable faulty or worn components are tagged and despatched for repair in accordance with workplace procedures
- 3.3** Maintenance work activities are documented in accordance with workplace procedures

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Range of Conditions

Range is restricted to essential operating conditions and any other variables essential to the work environment.

Non-essential conditions may be found in the UEE Electrotechnology Training Package Companion Volume Implementation Guide.

- Maintaining operation of electrical marine equipment must include rectifying at least four of the following faults in marine equipment:
- open circuit
 - short circuit
 - incorrect connections
 - insulation failure
 - unsafe condition
 - apparatus/component failure
 - related mechanical failure

Unit Mapping Information

This unit replaces and is equivalent to UEENEEG119A Maintain operation of electrical marine equipment and systems.

Links

Companion Volume implementation guides are found in VETNet - -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=b8a8f136-5421-4ce1-92e0-2b50341431b6>