Australian Government

Assessment Requirements for MARL058 Demonstrate basic knowledge of marine electrical systems

Release: 1

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Modification History

Release 1. This is the first release of this unit of competency in the MAR Maritime Training Package.

Performance Evidence

Evidence required to demonstrate competence in this unit must be relevant to and satisfy all of the requirements of the elements and performance criteria on at least one occasion and include:

- assessing own work outcomes and maintaining knowledge of current codes, standards, regulations and industry practices
- explaining basic principles of alternators, generators and control systems
- identifying and interpreting numerical and graphical information in electrical diagrams and specifications for a commercial vessel
- identifying and suggesting ways of rectifying electrical hazards and emergency situations on a vessel
- identifying methods, procedures and materials needed for operating, maintaining and repairing basic marine electrical systems
- imparting knowledge and ideas through verbal, written and visual means
- providing accurate and reliable information
- providing appropriate level of detail in responses
- reading and interpreting written information related to electrical circuitry and components on commercial vessels
- using electrical measuring and testing instruments.

Knowledge Evidence

Evidence required to demonstrate competence in this unit must be relevant to and satisfy all of the requirements of the elements and performance criteria and include knowledge of:

- alternating current (AC)/direct current (DC) voltage
- alternators:
  - characteristics
  - construction
  - synchronised operation
- automatic control devices, including:
  - process control
  - system control
- electrical:

    - measuring and testing instruments
    - safe working practices
    - symbols, basic electrical diagrams/circuits
- electrical hazards, including:
    - electric shock
    - electrical fire
    - moving and rotating electrical equipment
    - non-compliance with safe working procedures
    - over-speed of electrical machinery
    - poor housekeeping procedures
    - using equipment beyond safe working limits
- electrical motors
- high voltage (HV)
- marine electrical systems, including:
    - earthing
    - instrumentation
    - power distribution boards
    - switchboards
- monitoring systems
- phase angle, power factor and current flow
- procedures for dealing with hazards and emergencies
- protective devices
- resistance, inductance and capacitance
- switchboards and protection, including:
    - equipment removal
    - purpose
    - testing and maintenance
- work health and safety (WHS)/occupational health and safety (OHS) legislation and policies.

Assessment Conditions

Assessors must hold credentials specified within the Standards for Registered Training Organisations current at the time of assessment.

Assessment must satisfy the Principles of Assessment and Rules of Evidence and all regulatory requirements included within the Standards for Registered Training Organisations current at the time of assessment.

Assessment processes and techniques must be appropriate to the language, literacy and numeracy requirements of the work being performed and the needs of the candidate.

Practical assessment must occur in a workplace, or realistic simulated workplace, under the normal range of workplace conditions.

Simulations and scenarios may be used where situations cannot be provided in the workplace or may occur only rarely, in particular for situations relating to emergency procedures and adverse weather conditions where assessment would be unsafe, impractical or may lead to environmental damage.

Resources for assessment must include access to:

- applicable documentation, such as legislation, regulations, codes of practice, workplace procedures and operational manuals
- tools, equipment, machinery, materials and relevant personal protective equipment (PPE) currently used in industry.

Links

Companion Volume implementation guide can be found in VetNet - https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=772efb7b-4cce-47fe-9bbd-ee3b1d1eb4c2