Australian Government

MARC049 Operate 240 to 440 voltage alternating current electrical systems

Release: 1

MARC049 Operate 240 to 440 voltage alternating current electrical systems

Modification History

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

Application

This unit involves the skills and knowledge required to operate a 240 to 440 volt (V) alternating current (AC) electrical system according to technical specifications and safe operating limits.

It includes preparing for operation, operating electrical systems, and checking and completing operations of electrical systems.

This unit applies to people working in the maritime industry in the capacity of:

- Chief Engineer on vessels with inboard engines less than1500 kW within the exclusive economic zone (EEZ)
- Second Engineer on vessels with inboard engines less than 3000 kW within the EEZ
- Chief or Second Engineer on vessels with outboard engines with unlimited propulsion power within the EEZ
- assistant under the direct supervision of the Chief Engineer
- worker in the engine room of a vessel less than 80 metres in length with propulsion power less than 3000 kW.

Licensing/Regulatory Information

Legislative and regulatory requirements are applicable to this unit.

This unit is one of the requirements to obtain Australian Maritime Safety Authority (AMSA) certification as a Marine Engine Driver Grade 1 Near Coastal, as defined in the National Standard for Commercial Vessels (NSCV) Part D.

Note: Relevant state/territory training and qualification requirements must be fulfilled by any persons carrying out installation, maintenance and/or repair of electrical circuits or systems that are 50 V AC or above, or 120 V direct current (DC) or above.

Pre-requisite Unit

Not applicable.

Competency Field

C - Equipment Operations

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Unit Sector

Not applicable.

Elements and Performance Criteria

ELEMENTS		PERFORMANCE CRITERIA	
Elements describe the essential outcomes.		Performance criteria describe the performance needed to demonstrate achievement of the element.	
1	**Prepare for operation**	**1.1**	Risks to self, others and the environment are identified according to organisational procedures
		1.2	Routine pre-operational checks of electrical systems are completed prior to use according to manufacturer specifications and organisational procedures
2	**Operate electrical systems**	**2.1**	Suitable personal protective equipment (PPE) is selected and used according to organisational procedures
		2.2	Electrical systems are operated in a safe and controlled manner
		2.3	Performance of DC and AC electrical systems is monitored
		2.4	AC electrical demand is monitored and additional generators are paralleled or disconnected, as required
		2.5	Ship-to-shore electrical supply is connected and disconnected, when required, following established practices and organisational procedures
		2.6	Faults or malfunctions are identified and reported according to organisational procedures
		2.7	Faults or malfunctions are rectified and corrective actions are taken and recorded according to organisational procedures
		2.8	Procedures to be undertaken in emergencies are recognised and implemented
3	**Complete operations and check electrical systems**	**3.1**	Shutdown procedures are conducted according to manufacturer instructions and organisational procedures
		3.2	Operational records are completed according to organisational procedures

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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.

Unit Mapping Information

This unit replaces and is equivalent to MARC017 Operate 240 to 440 voltage alternating current electrical systems.

Links

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

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