



Australian Government

MARC008 Manage fuel systems

Release: 2

MARC008 Manage fuel systems

Modification History

Release 2. Range of Conditions updated to include relevant information.

Release 1. New unit of competency.

Application

This unit involves the skills and knowledge required to manage the fuel and fuel oil systems of a vessel to ensure safety of operation and to avoid pollution of the marine environment.

This unit applies to engine workers in the maritime industry working as a Marine Engine Driver Grade 2 Near Coastal on vessels up to 750 kW or as a Marine Engine Driver Grade 1 Near Coastal on vessels up to 1500 kW or as a Marine Engine Driver Steam.

This unit has links to legislative and certification requirements.

Pre-requisite Unit

Not applicable.

Competency Field

C - Equipment Operations

Unit Sector

Not applicable.

Elements and Performance Criteria

Elements describe the essential outcomes.

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

- | | |
|--|--|
| 1 Plan refuelling | 1.1 Fuel tanks are dipped to establish current level of fuel |
| | 1.2 Amount of fuel on board vessel is calculated and positioning of fuel is determined |
| | 1.3 Impact of refuelling on vessel safety is determined |
| | 1.4 Fuel is ordered according to organisational procedures |
| 2 Prepare vessel for refuelling | 2.1 Vessel is positioned and secured for refuelling |
| | 2.2 Refuelling equipment is correctly deployed according to |

- organisational procedures
- 2.3 Communication between all people involved in refuelling procedures is established
- 2.4 Tank valves are opened as necessary and refuelling operations are performed according to organisational procedures and regulatory requirements
- 2.5 Tanks are dipped to ensure correct amount of fuel has been received
- 3 Complete refuelling operations**
 - 3.1 Shut-down procedures are conducted according to organisational procedures
 - 3.2 Refuelling equipment is secured according to organisational procedures
 - 3.3 Refuelling records are completed according to organisational procedures and regulatory requirements
 - 3.4 Malfunctions, faults, irregular performance or damage to refuelling equipment are recorded according to organisational procedures
- 4 Manage an emergency**
 - 4.1 Appropriate response is made to emergency situation according to organisational procedures
 - 4.2 All personnel are correctly notified and their activities are managed to ensure their safety, according to organisational procedures
 - 4.3 Waste containment measures are implemented to protect the environment
 - 4.4 Appropriate authorities are notified when applicable
 - 4.5 Incident is recorded according to regulatory requirements and organisational procedures

Foundation Skills

This section describes those language, literacy, numeracy and employment skills that are essential to performance.

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

Range of Conditions

Specifies different work environments and conditions that may affect performance. Essential operating conditions that may be present (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) are included.

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

Impact of refuelling on vessel safety include one of the following:

- ignition of released fuel vapours
- loss of stability

Refuelling equipment include one or more of the following:

- bunding
- bunker flag (B Flag)
- firefighting equipment
- no smoking signs
- scupper plugs
- spill kit

Shut-down procedures include one or more of the following:

- communications with fuel supplier
- valve closure

Refuelling records include one or more of the following:

- logbook
- oil record book
- port authority documentation

Emergency situations include one or more of the following:

- fire
- hose rupture
- spillage

Appropriate authorities include one or more of the following:

- environmental protection authority
- fire and emergency services
- port authority

Unit Mapping Information

This is a new unit. This unit is equivalent to MARC3001A Manage fuel systems.

Links

Companion Volume implementation guides are found in VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=772efb7b-4cce-47fe-9bbd-ee3b1d1eb4c2>

Assessment Requirements for MARC008 Manage fuel systems

Modification History

Release 2. Performance Evidence and Knowledge Evidence amended to include correct information.

Release 1. New unit of competency.

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:

- carrying out accurate and reliable calculations dealing with bunkering capacity, consumption of fuel, speed and range of vessel
- completing required records
- managing refuelling to ensure safety of operation and avoid pollution of marine environment
- measuring tank levels
- reading and interpreting manufacturer specifications and safety data sheets (SDS)/material safety data sheets (MSDS)
- recognising faulty equipment and taking appropriate action
- recognising problems and hazards during refuelling and fuel transfer operations, and taking appropriate action
- selecting and using relevant equipment required for refuelling and fuel transfer operations
- taking appropriate action in response to an accidental spillage or safety incident during refuelling and fuel transfer operations.

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:

- arrangement of fuel oil systems
- calculations involving specific fuel consumption, speed and range
- calculations of volumes
- condensation in fuel tanks
- conversion of volumes to litres
- effect of slack tanks on vessel stability
- environmental protection measures to be applied during refuelling or transfer operations
- fuel oil tank components
- fuel tank filling
- functions and responsibilities of crew during refuelling or transfer operations
- hazards and safety precautions to be observed during refuelling or transfer operations

- methods of fuel oil tank content measurement
- refuelling and fuel transfer procedures applying to commercial vessels
- specific fuel consumption
- specific gravity
- work health and safety (WHS)/occupational health and safety (OHS) and pollution control, legislation and policies.

Assessment Conditions

Assessors must satisfy National Vocational Education and Training Regulator (NVR)/Australian Quality Training Framework (AQTF) assessor requirements.

Assessment must occur in workplace operational situations where it is appropriate to do so; where this is not appropriate, assessment must occur in simulated workplace operational situations that reflect workplace conditions.

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.

Resources for assessment must include access to:

- tools, equipment, machinery, materials and personal protective equipment currently used in industry
- applicable documentation such as legislation, regulations, codes of practice, workplace procedures and operational manuals
- range of relevant exercises, case studies and/or simulations.

Links

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