



Australian Government

MARC023 Operate and maintain a boiler

Release: 1

MARC023 Operate and maintain a boiler

Modification History

Release 1. New unit of competency.

Application

This unit involves the skills and knowledge required to operate and perform basic maintenance on a boiler according to relevant workplace practices and codes of practice. It includes operating a boiler, monitoring performance and maintaining its operational condition during use.

This unit applies to engine workers working in the maritime industry as a Marine Engine Driver Steam.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

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 Select and use personal protective equipment

1.1 Personal protective equipment (PPE) is selected for use according to statutory requirements and workplace procedures

1.2 Functions that require use of personal PPE are selected to enable function to be risk assessed

2 Carry out pre-operational safety checks

2.1 Boiler components are identified and operated according to organisational operating procedures

2.2 Boiler pre-operational safety checks are conducted according to statutory requirements and standard operating procedures

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| | 2.3 | Maintenance requirements are identified and reported according to workplace procedures |
| 3 Maintain health and safety standards in work area | 3.1 | Hazards and potential hazards in work area are identified according to statutory requirements and workplace procedures |
| | 3.2 | Hazards are reported according to statutory requirements and workplace procedures |
| | 3.3 | Prevention/control measures are selected according to organisational practice |
| | 3.4 | Boiler chemicals are stored and handled according to statutory requirements, manufacturer recommendations and workplace procedures |
| 4 Operate and monitor boiler | 4.1 | Boiler is started and brought online safely, according to statutory requirements, workplace procedures and organisational safety management systems (SMS) |
| | 4.2 | Operating status of boiler is monitored according to statutory requirements, workplace procedures and organisational SMS |
| | 4.3 | Boiler water quality tests are conducted according to workplace procedures and organisational SMS |
| | 4.4 | Boiler water is adjusted as a result of tests, to meet manufacturer recommendations and workplace criteria |
| | 4.5 | Operating log is maintained clearly and accurately, according to statutory requirements |
| 5 Shut down boiler | 5.1 | Boiler is shut down according to statutory requirements, workplace procedures and organisational SMS |
| | 5.2 | Documentation is maintained according to workplace and organisational requirements |
| 6 Carry out routine maintenance on boiler | 6.1 | Maintenance requirements are identified and reported according to workplace requirements |
| | 6.2 | Boiler is cleaned internally and externally according to statutory requirements and workplace procedures |
| | 6.3 | Boiler valves and fittings are removed for maintenance according to statutory requirements and organisational SMS |
| | 6.4 | Precautions for entry into confined spaces are observed |

according to and organisational SMS

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.

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| Personal protective equipment includes one or more of the following: | <ul style="list-style-type: none">• chemical resistant gloves and apron• ear protection (muffs or plugs)• eye protection• fire-resistant clothing• hard hat head protection• respiratory devices• thermally insulated gloves• working protective gloves |
| Boiler components must include: | <ul style="list-style-type: none">• ash pan and damper• boiler controls and safety devices• lighting and visual warning systems• oil burning apparatus• valves |
| Pre-operational safety checks must include: | <ul style="list-style-type: none">• boiler water level• checks of feed water supply and system• combustion air supply system• combustion equipment• essential fittings• firefighting equipment• fuel supply/heat source system• identifying and managing hazards and maintenance problems• inspecting and locating explosion doors• operation and position of boiler valves• selecting PPE |
| Hazards and potential hazards include one or more of the following: | <ul style="list-style-type: none">• boiler low water condition• chemical hazards• excessive noise |

- hot exposed steam pipe
 - lack of machinery guards
 - leakage of:
 - boiler
 - fuel
 - gas
 - manual handling hazards
 - obstructions and defects in work area
 - poor illumination of work area
 - rubbish and combustibles in area
 - thermal hazards
- Chemicals include one or more of the following:
- extinguishing agent's carbon dioxide
 - feed water additives
 - organic foam and dry powder
 - oxygen scavenger
 - soda acid
- Operating log must include:
- boiler status and operation
 - chemical treatment
 - maintenance/repair requirements
 - steam pressure
 - test results
 - time in use
- Documentation includes one or more of the following:
- boiler certificate
 - boiler operational records and user log books
 - emergency procedures and instructions
 - maintenance notices, records and requests
 - operational instructions, policies and procedures
- Maintenance requirements include one or more of the following:
- blow down valve
 - boiler steam pressure gauge
 - feed water stop valve
 - flame failure detection device
 - gauge glasses
 - main steam stop valve
 - safety valves
 - water level controller

Unit Mapping Information

This unit replaces and is equivalent to MARC3002A Operate and maintain a boiler.

Links

Companion Volume implementation guides are found in VETNet -

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