



Australian Government

Assessment Requirements for MARL026 Demonstrate intermediate knowledge of marine control systems and automation

Release: 1

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Modification History

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, performance criteria and range of conditions on at least one occasion and include:

- accessing information and sketch diagrams to interpret and explain testing requirements related to control systems on commercial vessels
- applying relevant work health and safety/occupational health and safety (WHS/OHS) requirements and work practices
- assessing own work outcomes and maintaining knowledge of current codes, standards, regulations and industry practices
- explaining principles of marine automation and process control
- identifying and interpreting numerical and graphical information, including schematic diagrams, relevant to control systems on commercial vessels
- identifying and suggesting ways of rectifying faults and malfunctions in control systems on commercial vessels
- identifying methods, procedures and materials needed to operate and maintain control systems on commercial vessels
- imparting knowledge and ideas through verbal, written and visual means
- reading and interpreting written information related to operate control systems on commercial vessels.

Knowledge Evidence

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

- actuators and control valves
- Australian standards for drawing symbols/layouts for schematic diagrams
- bridge control systems
- concepts of unmanned machinery spaces (UMS), and automated monitoring and control of machinery
- control and monitoring of ship machinery
- differential pressure transmitters
- electronic systems circuit diagrams
- engine room monitoring systems
- machinery space control loops and UMS requirements
- mechanical and electrical sensors
- open and closed loop systems
- operation of hydraulic governors
- operation of pneumatic 3-term controller and controller adjustment procedures
- operation of programmable logic controllers
- pneumatic and electrical instrumentation transmitters
- principles and operation of pneumatic control element and systems
- principles of basic pneumatic systems and action of pneumatic instruments
- principles of process control
- temperature transmitters
- tests and procedures required to meet UMS requirements
- total bridge control
- transmitter calibration
- WHS/OHS legislation, policies and procedures.

Assessment Conditions

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

Assessment must satisfy the National Vocational Education and Training Regulator (NVR)/Australian Quality Training Framework (AQTF) standards.

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.

Assessment must occur in workplace operational situations or where these are not available, in an industry-approved marine operations site where intermediate knowledge of marine control systems and automation can be demonstrated.

Resources for assessment include access to:

- applicable documentation including workplace procedures, regulations, codes of practice and operation manuals
- technical reference library with current publications on automation and process control

- tools, equipment, materials and personal protective equipment currently used in industry.

Performance should be demonstrated consistently over time and in a suitable range of contexts.

Links

Companion Volume implementation guides are found in VETNet -

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