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| Overview | This standard covers the competence to plan and prepare for operating propulsion machinery and ancillary systems and to monitor and respond to any problems arising.  It includes preparing, starting up, monitoring during running and shutting down of machinery to meet operational requirements. Procedures are followed for changes in demand, deviations from normal running, emergency shut down and isolation and avoidance of pollution of the marine environment.  **Target group**  This standard applies to individuals at an operational level involved in the preparation, operation and monitoring of marine propulsion machinery on vessels of any type and of any registered power.  It applies to all types of propulsion machinery, internal combustion (with separate or integrated ancillary systems),steam turbine, gas turbine or electrical propulsion utilising one or more of the previously mentioned primary power sources. |

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| **Performance criteria**  You must be able to: | 1. prepare and operate machinery in accordance with established safety rules, regulations and operating instructions to prevent damage or pollution 2. prepare the machinery and control systems in the required sequence and time- scale 3. carry out the required checks, start up and shut down the plant and machinery 4. monitor and accurately assess the condition of the propulsion plant and machinery in accordance with schedules, operating requirements and instructions and maintain operating conditions within given limits 5. adjust the propulsion plant and machinery output to meet bridge orders and vessel requirements 6. identify, take action on and report malfunctions 7. carry out emergency shut down and isolating procedures to ensure vessel and machinery safety 8. operate the propulsion plant and machinery in contingency situations, including the failure of remote control systems 9. inform relevant personnel of the operations to enable them to continue their responsibilities safely |
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| Knowledge and understanding  You need to know and understand: | 1. the working principles and constructional details of main and ancillary machinery 2. planning of operations, planning methods, sources of information – statutory, company and manufacturers. 3. the main duties and responsibilities of shipboard personnel, delegation of responsibilities in the machinery space and the level of supervision required by individuals. 4. the operational checks and procedures to operate each individual propulsion and ancillary system and how to bring each individual system to state of readiness. 5. the location, cause and effects of common faults in marine propulsion plant and ancillary machinery and action necessary to prevent damage. 6. the permitted range, effects of adjustments and consequence of deviation beyond specified range to main propulsion plant and ancillary machinery. 7. the operation of propulsion plant and ancillary systems in the event of failure of remote control systems 8. the shutting down of systems and equipment on completion of operations 9. the use of internal communication systems, communicating with engineroom and bridge personnel and effective forms of communication. 10. the importance and use of records for commercial and legislative purposes. 11. the application of Statutory Regulations and guidelines, organisational instructions and guidance and vessel contingency plans |

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