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| Overview | This standard covers the competence required to operate vessel propulsion, ancillary, auxiliary and service machinery and systems, and to monitor and respond to any problems arising.  For brevity within the standard, the phrase ‘machinery and systems' is used throughout to signify ‘vessel propulsion, ancillary, auxiliary and service machinery and systems'.  **Target Group**  This standard applies to individuals at the operational level involved in the operation and monitoring of marine propulsion, ancillary, auxiliary and service machinery and systems on vessels in inland or coastal waters. |

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| **Performance criteria**  You must be able to: | 1. prepare and operate machinery and systems in accordance with established safety rules, regulations and operating instructions to prevent damage or pollution 2. prepare the machinery and systems in the required sequence and time-scale 3. start up or shut down machinery and systems safely and efficiently 4. monitor and assess accurately the condition of the machinery and systems in accordance with schedules, operating requirements and instructions, and maintain operating conditions within given limits 5. confirm that electrical protection devices are reset and enabled as appropriate 6. monitor, record and maintain specified conditions, supplies and instrument readings within defined levels and manufacturers' recommendations for normal operations 7. operate the machinery and systems in contingency situations, including the failure of remote control systems 8. identify irregularities, defects or damage and take action promptly to maximise vessel safety 9. carry out emergency shut down and isolating procedures and take multiple alarms in priority order to maximise vessel, machinery and systems' safety 10. give sufficient notice of operations to enable other relevant personnel to carry out their responsibilities safely and efficiently 11. report promptly and accurately to an appropriate authority any malfunction and irregularities |

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| Knowledge and understanding  You need to know and understand: | 1. the working principles and constructional details of machinery and systems 2. the operational checks and procedures to operate machinery and systems, and how to bring each individual system to a state of readiness 3. the preparation, starting, coupling and changeover of alternators or generators 4. the protection devices fitted to machinery and systems 5. the normal operating parameters for machinery and systems, the adjustments required to maintain conditions, and the consequences of deviations beyond specified operating parameters 6. the main duties and responsibilities of onboard personnel, delegation of responsibilities in the machinery space, and the level of supervision required by individuals 7. the location, cause and effects of common faults in machinery and systems, and the action necessary to prevent damage 8. the operation of machinery and systems in the event of failure of remote control systems 9. the shutting down process of machinery and systems on completion of operations 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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