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| Overview | This standard covers the competence required to safely operate and respond to minor deviations of vessel electrical equipment including alternators, generators and control systems. The machinery is prepared for operation and start up and shut down occurs within defined conditions. Circuit breakers are operated and electrical protection devices reset to match requirements and personnel are informed of the relevant operations.  **Target Group**  This standard applies to individuals at management level with responsibility for operating and adjusting electrical, electronic and control equipment on merchant vessels. |

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| **Performance criteria**  You must be able to: | 1. plan, and prepare for operations to comply with operating instructions, safety and other relevant legislation and guidelines to ensure safety of operations 2. start up and shut down equipment as required for safe and efficient operations 3. confirm that protection devices are reset and enabled as appropriate 4. monitor, record and maintain specified conditions and instrument readings within defined levels and manufacturers recommendations for normal operation 5. ensure performance levels are in accordance with technical specifications 6. adjust electrical, electronic and control equipment to achieve defined conditions and to maintain safe and efficient operation 7. diagnose common faults and take correct action to prevent damage 8. carry out tests according to technical schedules and operating manuals 9. select, interpret and use technical drawings, measuring and calibration instruments correctly 10. give sufficient notice of operations to enable other personnel to carry out their responsibilities safely and efficiently 11. communicate effectively, to those who will use the resources, the care that they must take 12. report on the machinery and electrical supply condition and any irregularities or adjustments made promptly and accurately to the appropriate person |

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| Knowledge and understanding  You need to know and understand: | 1. the working principles and constructional details of electrical, electronic and control equipment 2. the operation of electrical, electronic and control equipment 3. the instruments to monitor conditions 4. the permitted range of electrical supply, effects of adjustments and consequence of deviation beyond specified range 5. how to make adjustments to maintain safe and efficient operation 6. the location, cause and effects of faults in electrical, electronic and control equipment. 7. the testing and maintenance of electrical, electronic, hydraulic and pneumatic control equipment 8. the protection devices and arrangements on electrical systems 9. equipment emergency shut down sequences, timing and hazards 10. statutory and organisational reporting requirements 11. the importance and use of records for commercial and legislative purposes 12. how to evaluate and apply Statutory Regulations and guidelines, organisational instructions and guidance and vessel contingency plans |

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| **Developed by** | Maritime Skills Alliance |
| **Version number** | 2 |
| Date approved | January 2012 |
| Indicative review date | Decemebr 2016 |
| Validity | Current |
| Status | Original |
| Originating organisation | Skills for Justice |
| Original URN | MSA C23 |
| Relevant occupations | Engineer |
| Suite | Maritime |
| Key words | Safely; operate; minor deviations; vessel; electrical equipment; alternators; generators; control systems; |