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| MSA Unit 137 | **RQF Ref: XXXXX** |
| Title: | **Principles of marine auxiliary electrical plant** |
| Level: | **2** |
| Credit value: | **3** |
| Learning outcomes - The learner will: | Assessment criteria - The learner can: |
| 1. Understand electrical plant components
 | * 1. Identify the main components fitted to main switchboard
	2. Describe the types and function of switchboard protection devices.
	3. List the rules pertaining to emergency power supplies
	4. Describe the shore power connection unit
	5. List the essential and non-essential consumers fitted to a switchboard
	6. Describe the construction and operation of 3 and single phase AC motors
	7. Describe the construction and testing of storage batteries
	8. List the main characteristics of insulated neutral and earthed neutral distribution systems
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| 1. Understand electrical plant operations
 | * 1. Describe the role of earth lamps / detection systems
	2. Describe how earth fault tracing is undertaken to locate a fault
	3. Describe the synchronisation and load sharing operations between two generators
	4. Describe the operation of a range of motor starters
	5. Describe the safe connection sequence of a shore power connection unit
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| **Additional information about the unit** |  |
| Unit aim(s) | To develop the knowledge and understanding of basic electrical concepts, magnetic and electromagnetic theory in a marine engineering context |
| Unit expiry date |  |
| Details of the relationship between the unit and relevant national occupational standards (if appropriate) | MNTB NOS C01 Monitor and Operate Engine Room MachineryC13 Operate and adjust vessel electrical equipment |
| Details of the relationship between the unit and other standards or curricula (if appropriate) | Maritime and Coastguard Agency Marine Guidance Notice regarding Certificates of Competency – Engine Department,  |
| Assessment requirements specified by a sector or regulatory body (if appropriate) |  |
| Endorsement of the unit by a sector or other appropriate body (if required) |  |
| Location of the unit within the subject/sector classification system | Transportation Operations and Maintenance |
| Name of the organisation submitting the unit | Scottish Qualifications Authority |
| Availability for use | XX 2016 |
| Availability for delivery | XX 2016 |
| Guided Learning Hours | 30 |