

## PERFORM ELECTRICAL SYSTEM BREAKDOWN MAINTENANCE

**UNIT CODE:** ENG/OS/EI/CR/03/4/A

### UNIT DESCRIPTION

This unit covers the competencies required to perform breakdown maintenance in an electrical installation system. Competencies include fault identification, repairing, testing and generating maintenance report.

### ELEMENTS AND PERFORMANCE CRITERIA

<b>ELEMENT</b> These describe the key outcomes which make up workplace function.	<b>PERFORMANCE CRITERIA</b> These are assessable statements which specify the required level of performance for each of the elements <i>(Bold and italicised terms are elaborated in the Range)</i>
1. Identify system failure	1.1 The necessary information about the <b>failure</b> is obtained from the user, as per set procedures. 1.2 <b>Manuals</b> for the system are referred to identify test points and measured parameters as per established procedure 1.3 Visual inspection to identify system failure is performed as established standards
2. Troubleshoot cause of failure	2.1 Safety procedures are applied in accordance with the safety standards 2.2 System trouble shooting is conducted in accordance with the set procedure 2.3 System is diagnosed for failure according to standard operating procedure 2.4 System failure results are recorded as per established procedure. 2.5 <b>Parameters</b> are compared against the standards values
3. Prepare list of tools, equipment & materials	3.1 Maintenance tools, equipment and materials are identified as per established procedure 3.2 Specifications and functionality of tools, equipment and materials are checked in accordance with established standards 3.3 Safety procedures are observed as per OSHA 3.4 Equipment are calibrated as per manufacturer's specifications
4. Repair the system	4.1 Safety precautions are observed as per OSHA

<b>ELEMENT</b>	<b>PERFORMANCE CRITERIA</b>
These describe the key outcomes which make up workplace function.	These are assessable statements which specify the required level of performance for each of the elements <i>(Bold and italicised terms are elaborated in the Range)</i>
	4.2 System is repaired in accordance with maintenance manual 4.3 Tools and equipment are used as per the manufacture manuals 4.4 Repair activities are recorded according to the established procedure
5. Test the system	5.1 Appropriate tests and test points are identified as per established standards 5.2 Testing is performed in accordance with safety standards 5.3 System is tested as per established procedure 5.4 Test results are recorded according to the established procedures 5.5 Parameters are compared against the standard values 5.6 Maintenance report is prepared according to approved format

## RANGE

This section provides work environments and conditions to which the performance criteria apply. It allows for different work environments and situations that will affect performance

<b>Variable</b>	<b>Range</b>
	<i>May include but is not limited to:</i>
1. Failure include but not limited to:	1.1 Partial 1.2 Total
2. Manuals include but not limited to:	2.1 Maintenance 2.2 Operational 2.3 Installation 2.4 Commissioning 2.5 Technical specification /data sheet
3. Parameters include but not limited to:	3.1 Light intensity 3.2 Sound 3.3 Speed 3.4 Efficiency

Variable	Range
	<i>May include but is not limited to:</i>
	3.5 Temperature
	3.6 Electrical quantities e.g. Voltage, current and resistance levels
	3.7 Expected output

## REQUIRED KNOWLEDGE AND UNDERSTANDING

*The individual needs to demonstrate knowledge and understanding of:*

<b>1. Organisational and legislative requirements including:</b>	
1.1	The manufacturer's warranty requirements relating to maintenance activities for the electrical installation systems and related components.
1.2	The legal and statutory requirements relating to electrical maintenance activities.
1.3	workplace procedures relevant to: 3.1.1 Health and safety; 3.1.2 The environment (including waste disposal); 3.1.3 Appropriate personal and protective equipment; 3.1.4 Appropriate use of service and maintenance manuals
1.4	Workplace procedures for: 1.4.1 Fault identification and diagnosis 1.4.2 Appropriate use of tools and equipment; 1.4.3 Repairing, modifying or replacing defective parts or components. 1.4.4 recording electrical maintenance activities 1.4.5 Reporting of technical challenges
1.5	The importance of documenting maintenance information.
1.6	The importance of working within agreed timelines and sharing progress reports.
1.7	The relationship between time and costs.
1.8	The importance of reporting anticipated delays to relevant parties promptly.
<b>2. The use of technical information including:</b>	
2.1	How to find, interpret and use sources of technical information for maintenance activities
2.2	The importance of using the correct sources of technical information.
2.3	The purpose of and how to use identification codes.

## FOUNDATION SKILLS

The individual needs to demonstrate the following foundation skills:	
• Communications (verbal and written);	• Decision making;

<ul style="list-style-type: none"> <li>• Proficient in ICT;</li> <li>• Time management;</li> <li>• Analytical</li> <li>• Faults troubleshooting;</li> <li>• Problem solving;</li> <li>• Planning;</li> </ul>	<ul style="list-style-type: none"> <li>• First aid;</li> <li>• Report writing;</li> </ul>
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## EVIDENCE GUIDE

This provides advice on assessment and must be read in conjunction with the performance criteria, required knowledge and understanding and range.

1. Critical Aspects of Competency	<p><b>Assessment requires evidence that the candidate:</b></p> <ul style="list-style-type: none"> <li>1.1 Safely used testing equipment and tools</li> <li>1.2 Obtained, recorded and interpreted test results</li> <li>1.3 Documented maintenance report</li> <li>1.4 Repaired and maintained a system</li> </ul>
2. Resource Implications	<p><b><i>The following resources must be provided:</i></b></p> <ul style="list-style-type: none"> <li>2.1 Electrical installation tool kit</li> <li>2.2 Testing equipment</li> <li>2.3 Measuring equipment</li> </ul> <p>Resources the same as that of workplace are advised to be applied</p>
3. Methods of Assessment	<p><b>Competency may be assessed through:</b></p> <ul style="list-style-type: none"> <li>3.1 Oral test</li> <li>3.2 Observation</li> <li>3.3 Practical demonstration</li> </ul>
4. Context of Assessment	<p>Competency may be assessed individually in the actual workplace or through a simulated work place setting</p>
5. Guidance information for assessment	<p>Holistic assessment with other units relevant to the industry sector, workplace and job role is recommended.</p>