

ELECTRICAL INSTALLATION BREAKDOWN MAINTENANCE

UNIT CODE: ENG/CU/EIT/CR/07/6/A

Relationship to Occupational Standards

This unit addresses the unit of competency and meets the requirements specified by the Occupational Standards: Conduct Electrical Installation Breakdown Maintenance

Duration of Unit: 140 hours

Unit Description

This unit specifies the competencies required to conduct breakdown maintenance of an electrical installation. It includes fault identification, repairing, testing and generating maintenance report

Summary of Learning Outcomes

1. Identify system failure
2. Troubleshoot cause of failure
3. Prepare list of tools, equipment & materials
4. Repair the installation
5. Test the repaired system

Learning Outcomes, Content and Suggested Assessment Methods

Learning Outcome	Content	Suggested Assessment Methods
1. Identify installation failure	<ul style="list-style-type: none"><input type="checkbox"/> Meaning of terms<input type="checkbox"/> Gathering information<input type="checkbox"/> Principle of operation<ul style="list-style-type: none">➤ Visual inspection➤ Interview of users<input type="checkbox"/> Types of failures<ul style="list-style-type: none">➤ Partial➤ Total<input type="checkbox"/> Referring to as-built drawings, Manuals	<ul style="list-style-type: none"><input type="checkbox"/> Observation<input type="checkbox"/> Written tests<input type="checkbox"/> Oral questioning<input type="checkbox"/> Practical tests
2. Troubleshoot cause of failure	<ul style="list-style-type: none"><input type="checkbox"/> Meaning of terms<input type="checkbox"/> Identification of tools, equipment and materials for repair<input type="checkbox"/> Conducting fault diagnosis e.g.<ul style="list-style-type: none">➤ Open circuit	<ul style="list-style-type: none"><input type="checkbox"/> Observation<input type="checkbox"/> Written tests<input type="checkbox"/> Oral questioning<input type="checkbox"/> Practical tests

Learning Outcome	Content	Suggested Assessment Methods
	<ul style="list-style-type: none"> ➤ Short circuit ➤ Earth fault ➤ Mechanical fault <input type="checkbox"/> Recording of installation failure results <input type="checkbox"/> Parameters e.g. <ul style="list-style-type: none"> ➤ Voltage ➤ Current ➤ Resistance 	
3. Prepare list of tools, equipment & materials	<ul style="list-style-type: none"> <input type="checkbox"/> Safety in use of maintenance tools <input type="checkbox"/> Maintenance tools, equipment and materials <input type="checkbox"/> Specification of maintenance tools and equipment 	<input type="checkbox"/>
4. Repair the installation	<ul style="list-style-type: none"> <input type="checkbox"/> Meaning of terms <ul style="list-style-type: none"> ➤ Repair/Replace <input type="checkbox"/> Isolating the installation <input type="checkbox"/> Conducting repair activities <input type="checkbox"/> Recording repair activities 	<ul style="list-style-type: none"> <input type="checkbox"/> Observation <input type="checkbox"/> Written tests <input type="checkbox"/> Oral questioning <input type="checkbox"/> Practical tests
5. Test the repaired system	<ul style="list-style-type: none"> <input type="checkbox"/> Meaning of terms <input type="checkbox"/> Identification of test and test points <input type="checkbox"/> Test parameters e.g. <ul style="list-style-type: none"> ➤ Voltage ➤ Resistance ➤ Current <input type="checkbox"/> Testing, documenting results and maintenance report writing 	<ul style="list-style-type: none"> <input type="checkbox"/> Observation <input type="checkbox"/> Written tests <input type="checkbox"/> Oral questioning <input type="checkbox"/> Practical tests

Suggested Methods of Instruction

- Demonstration by trainer
- Practice by the trainee
- Discussions
- Projects
- Demonstration by trainer
- Field trips
- On-job training

Recommended Resources

Tools

- Set of screw drivers

- Pliers
- Phase testers
- Multimeter

Equipment

- PPE –hand gloves, dust coat, dust masks
- Multimeter
- Clamp meter
- Earth electrode resistance meter
- Phase sequence meter

Materials and supplies

- Stationery
- Cables
- Lubricants
- Service parts

Reference materials

- IEE regulations
- Organizational procedures manual

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