

ELECTRICAL BREAKDOWN MAINTENANCE

UNIT CODE: ENG/CU/PO/CR/07/5/A

Relationship to Occupational Standards

This unit addresses the unit of competency: Conduct Electrical Breakdown Maintenance

Duration of Unit: 60 hours

Unit Description

This unit specifies the competencies required to conduct breakdown maintenance of an electrical installation. The competencies include; Identifying the system failure, preparing the list of tools, equipment and materials, Troubleshooting the cause of failure, repairing the system, testing the system, and documenting the maintenance report.

Summary of Learning Outcomes

1. Identify system failure
2. Prepare list of tools, equipment, and materials
3. Troubleshoot cause of failure
4. Repair the system
5. Test the system
6. Document maintenance report

Learning Outcomes, Content and Suggested Assessment Methods:

Learning Outcome	Content	Suggested Assessment Methods
1. Identify system failure	<ul style="list-style-type: none">• Gathering information<ul style="list-style-type: none">• Principle of operation• Visual inspection• Interview of users• Types of failures e.g<ul style="list-style-type: none">• Partial• Total• Electrical• Mechanical• Referring to as-built drawings, Manuals	<ul style="list-style-type: none">• Oral questioning• Written tests• Observation
2. Prepare list of tools, equipment and materials	<ul style="list-style-type: none">• Identification of tools, equipment and materials for troubleshooting and repair/replace	<ul style="list-style-type: none">• Observation• Oral questioning• Practical tests

	<ul style="list-style-type: none"> • Specification of tools e.g troubleshooting tools. 	<ul style="list-style-type: none"> • Written tests
3. Troubleshoot cause of failure.	<ul style="list-style-type: none"> • Safety standards <ul style="list-style-type: none"> • PPE • Troubleshooting procedure • Conducting fault diagnosis e.g. <ul style="list-style-type: none"> • Open circuit • Short circuit • Earth fault • Mechanical fault • Recording of system failure results <ul style="list-style-type: none"> • Parameters e.g. <ul style="list-style-type: none"> ➤ Voltage ➤ Current ➤ Resistance 	<ul style="list-style-type: none"> • Oral questioning • Practical tests • Written tests
4. Repair the system	<ul style="list-style-type: none"> • Repair/Replace <ul style="list-style-type: none"> • Meaning • Isolating the faulty part • Conducting repair/replace activities • Recording repair activities • Waste disposal 	<ul style="list-style-type: none"> • Observation • Oral questioning • Practical tests • Written tests
5. Test the system	<ul style="list-style-type: none"> • Identification of test and test points <ul style="list-style-type: none"> • Test parameters e.g. <ul style="list-style-type: none"> ➤ Voltage ➤ Resistance ➤ Current • Testing, documenting results and maintenance report writing 	<ul style="list-style-type: none"> • Practical tests • Observation • Oral questioning
6. Document maintenance report	<ul style="list-style-type: none"> • Maintenance report • Preparation of maintenance report • Filing of maintenance report • Importance of maintenance reports. 	<ul style="list-style-type: none"> • Written tests • Oral questioning • Practical tests

Suggested Methods of Instructions

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

Recommended Resources

- Set of screw drivers
- Pliers
- Phase testers
- Multimeter
- PPE –hand gloves, dust coat, dust masks
- Multimeter
- Clamp meter
- Earth electrode resistance meter
- Phase sequence meter
- Stationery
- Cables
- Lubricants
- Service parts

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