Overview

This standard is about diagnosing and determining faults in electrical plant and equipment in engineering construction.

You will need to be able to diagnose faults by investigating and establishing fault symptoms and the likely cause using approved tools, equipment and methods to restore the system to an operable condition. You must also be able to determine the implications of a fault with regards to connected or adjacent equipment, and identify any wider safety factors whilst adhering to health and safety legislation, regulations and safe working practices.

In the context of this standard, your responsibility is to interpret and work within given specifications, selecting methods and techniques to achieve the best possible result. In some cases, you may still be expected to refer to others for final authorisation, even though you remain responsible for identifying and implementing decisions.

Who this standard is for
This standard is for Electrical Maintenance Technicians and those that maintain electrical plant and equipment.
Diagnose and determine the causes of faults in electrical plant and equipment

**Performance criteria**

You must be able to:

P1  work safely at all times, complying with health and safety and other relevant legislation, regulations, guidelines and local rules or procedures

P2  ensure that the work environment, material, tools and equipment are suitably prepared for the work activities to be undertaken

P3  review and use all relevant information on the symptoms and problems associated with the electrical plant and equipment

P4  investigate and establish the most likely causes of the faults

P5  select, use and apply diagnostic techniques, tools and aids to locate faults

P6  complete the fault diagnosis within the agreed time and inform the appropriate people when this cannot be achieved

P7  determine the implications of the fault for other work and for safety considerations

P8  use the evidence gained to draw valid conclusions about the nature and probable cause of the fault

P9  record details on the extent and location of the faults in an appropriate format

P10  **reinstate the work area**

P11  deal promptly and effectively with problems within your control and report those that cannot be solved
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Knowledge and understanding

You need to know and understand:

K1 relevant legislative, regulatory and local requirements or procedures and safe working practices
K2 preparation and reinstatement requirements in respect of the work area, material, and equipment, and the possible consequences of incorrect actions in these areas
K3 fault diagnostic aids, tools and equipment
K4 fault finding methods and techniques
K5 analysis methods and techniques
K6 likely risks arising from plant and equipment faults
K7 documentation used in the reporting, recording and diagnosis of faults and their location
K8 your responsibilities for ensuring the care and security of tools and equipment that you use
K9 your responsibilities with regard to reporting lines and procedures in your working environment
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Additional Information

**Scope/range**

**Work environment**
Typical work environments that you could be expected to prepare include:
1. at height
2. confined spaces
3. controlled operational and offshore installations
4. designated work areas
5. engineering construction sites
6. existing plants and structures
7. fabrication workshops
8. nuclear sites
9. onshore and offshore installations
10. potential explosive atmospheres
11. shafts
12. shipyards
13. tunnels
14. working inside plant and systems
15. working on access structures (scaffold)

**Diagnostic techniques**
This could include:
1. comparison diagnosis
2. examination of failed components
3. function testing
4. operational performance testing
5. sectional isolation
6. substitution
7. timed monitoring

**Reinstate the work area**
This term could include:
1. returning the work area to a safe condition
2. correctly disposing of waste materials
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<tr>
<td>3</td>
<td>storage of re-usable materials, consumables and equipment in accordance with appropriate procedures</td>
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**Recording**

This could include:

1. company procedures
2. data sheets
3. test results
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