Overview

This standard is about the inspecting, commissioning and testing of electrical installations (plant) in engineering construction.

You will need to be able to perform the appropriate tests, ensure that the installation is in accordance with regulations and prepare a test record using the correct tools and techniques and 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 techniques and making variations 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.

This standard is for

Electrical installation engineers and others that install electrical systems and equipment.
ECIICSE03
Inspection, testing and commissioning of electrical installations (plant)

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, equipment and tools are suitably prepared for the activities to be undertaken

P3 identify the people that need to be provided with technical and functional information

P4 obtain and interpret the required information and specification for the job to be done

P5 identify accurately the means of electrical isolation and carry out isolation

P6 confirm that your test instruments are

P6.1 appropriate

P6.2 fit for purpose

P6.3 calibrated

P7 plan and agree the schedule for inspecting and testing procedures

P8 conduct an inspection

P9 conduct the required tests

P10 confirm the installation meets the required regulations and standards

P11 prepare a formal record of testing which confirms the safety and integrity of the installation

P12 commission the installation according to specification and defined parameters

P13 reinstate the work area

P14 deal promptly and effectively with problems within your control and report those that cannot be solved
ECIICESE03
Inspection, testing and commissioning of electrical installations (plant)

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 how to identify people that need to be supplied with technical and functional information relating to the task
K4 risk assessments and method statements (RAMs) and other related documentation and procedures
K5 safe isolation procedures
K6 engineering drawings and related specifications
K7 the tools, terminology and techniques for inspecting, testing and commissioning electrical installations including
  K7.1 identification of inspection requirements
  K7.2 selection of appropriate calibrated testing equipment
  K7.3 sequencing of tests for fault identification
  K7.4 setting up of equipment to predetermined parameters
  K7.5 releasing of equipment into service
K8 your responsibilities for ensuring care and security of tools and equipment used
K9 reporting and documentation procedures
K10 your responsibilities with regard to reporting lines and procedures in your working environment
Additional Information

**Scope/range**

**Work environment**

Typical work environments could 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)

**Electrical isolation**

This could include:

1. getting appropriate authorisation including Permit to Work
2. identifying the correct isolations and disconnections required
3. correct sequence of isolations and disconnections
4. safety methods for maintaining isolations and disconnections

**Testing procedures**

These could include testing:

1. continuity
2. earth fault loop impedance
3. insulation resistance
4. operation of electrical components
5. polarity
Reinstate the work area
This term could include:
1. returning the work area to a safe condition
2. correctly disposing of waste materials
3. storage of re-usable materials, consumables and equipment in accordance with appropriate procedures
4. completion of all necessary documentation

Information relating to the task
This could include knowledge and understanding about:
1. sources of technical and functional information
2. who should receive what information
3. the type of information to supply
4. when to supply information
5. checking relevant people understand those aspects of information that have a bearing on health and safety

Engineering drawings and related specifications
Engineering drawings could include:
1. assembly instruction
2. general arrangement (GAs)
3. isometrics
4. schematics
5. schedules

Specifications could include:
6. method statements
7. manufacturers’ instructions
8. product worksheets
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