COGPEM19

Replace components in electrical process plant and equipment

Overview

This standard is about your competence you need to replace components in electrical process plant and equipment using the correct methods and techniques. You will be following your organisation's safe working practices at all times and working within your organisations work permits procedures.

This standard deals with the following:
1 Replace components in electrical process plant and equipment

During this work you must take account of the relevant installation procedures and safe working practices AS THEY APPLY TO YOU.

Performance criteria

You must be able to:

P1 work safely at all times, complying with health and safety and other relevant regulations and guidelines including the requirements for isolating and locking off the electrical supply and checking for zero electrical supply to the work area P2 obtain all the required components and ensure that they are in a suitable condition for replacement and fit for purpose P3 ensure that any replacement components used meet the required specification P4 take adequate precautions to prevent damage to components, tools and equipment during replacement P5 replace the components in the correct sequence using appropriate tools and techniques P6 make any necessary settings or adjustments to the components to ensure they will function correctly P7 deal promptly and effectively with problems within your control and report those that cannot be solved P8 maintain documentation in accordance with organisational requirements

Knowledge and understanding

You need to know and understand:

K1 you must have a working knowledge and understanding of what your responsibilities are in respect of Health, Safety and Environment. This should include the limits of your personal responsibility, your legal responsibility for your own health and safety and the health and safety of others K2 you must have a working knowledge of the relevant regulations and the safe working practices and procedures including the requirements for isolating and locking off the electrical supply and checking for zero electrical supply within your work area K3 you must have an appreciation of engineering drawings and related specifications and the specifications to which you will be expected to work, including technical drawings (component, assembly, general arrangements, isometrics, 1st and 3rd angle projections), method statements and product worksheets, tolerances K4 you must have working knowledge of the component replacement methods and techniques including the types of reconnection that have to be made, and which tools, equipment and methods can be used to replace specific components in specific products/assets K5 you must have working knowledge of handling e.g. methods and techniques. This could be expected to include manual handling pressure and thermal methods and techniques K6 you must have an appreciation of what your responsibilities are for ensuring the security of tool and equipment care and control procedures that you use. This could be expected to include ingress protection ratings, explosion protection rating, corrosion, portable appliance testing, heating and ventilation and permit systems K7 you must have an appreciation of your responsibilities with regard to the reporting lines and procedures in your working environment

Scope/range related to performance criteria

1 The level and extent of responsibility in the context of this standard, extends to working with a detailed specification, varying techniques and activities and applying appropriate methods to achieve the best possible result in the conditions applying. You will be accountable for the integrity of the work site and ensuring the work is recorded in a formal manner albeit you will be expected to refer to others. Authorisation for proceeding with the work will be given by authorised signatories within the Permit to Work system

2 The Equipment to be worked on could include:
2.1 Low Voltage rotating equipment
2.2 Protection methods
2.3 Low Voltage electrical distribution systems

3 The type of components to be replaced will be robust. Robust components are those which are resistant to most forms of damage or disruption during their working lives.
Typical robust components could be:
3.1 Components of power/lighting transmission
3.2 Motors/components of motors
3.3 Components of process control systems
3.4 Heat exchangers
3.5 Components of electrical back-up systems

4 The assembly methods and techniques to be used may require a sequential series of steps to complete the removal. The component may be difficult to access and may be surrounded by other fragile/valued components and may need specialised tooling requirements. The specifications to which a candidate would be expected to work to could include:
4.1 Product worksheets
4.2 Technical drawings (components, assembly, general arrangement, isometrics)
4.3 Method statements
4.4 Maintenance schedules

5 The assembly operations will be simple. Simple replacement of components refers to situations where the component is quickly and easily removed from its position. Typical examples could include lifting out of plug-in components and undoing threaded fasteners to release the component
6 The quality standards and accuracy to be achieved are as set down in

Scope/range related to knowledge and understanding

The Knowledge and Understanding levels expressed indicate the minimum level of knowledge and understanding sufficient to perform your role in a manner that would normally be associated with the minimum acceptable performance of a competent person undertaking your role.

The expression “an appreciation” is intended to indicate a level of knowledge and understanding equating to:
1 An awareness of the existence, the scope and the background to the content covered by the knowledge and understanding statement
2 How and where to find further detail and information that you will need
3 Having obtained the information, you will be expected to check your interpretation and then to be able to apply it to your situation

The expression ”working knowledge and understanding” indicates you are able to:
4 Identify and apply relevant information, procedures and practices to your usual role in your expected working environments needing only occasional recourse to reference materials
5 Describe, in your own words, the principles underlying your working methods. This does not mean the ability to quote “Chapter and verse”. Rather you must know what supporting information is available, how and where to find it and from whom to seek further guidance and information confirm any additional required detail

6 Interpret and apply the information obtained to your role, your working practice and in your expected working environment

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