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## Overview

This standard identifies the competences you need to carry out scheduled maintenance tasks on electrical equipment, in accordance with approved procedures. You will be required to carry out maintenance on electrical equipment such as control systems, motors and starters, switchgear and distribution panels, electrical plant, wiring enclosures and luminaires, portable appliances and other specific electrical equipment, in order to minimise downtime, and ensure that the equipment performs at optimal levels and functions to specification.

Your responsibilities will require you to comply with organisational policy and procedures for the maintenance activities undertaken, and to report any problems with these activities, or with the tools and equipment that are used, that you cannot personally resolve, or are outside your permitted authority, to the relevant people. You must ensure that all tools, equipment and materials used in the maintenance activities are removed from the work area on completion of the activities, and that all necessary job/task documentation is completed accurately and legibly. You will be expected to work to instructions, alone or in conjunction with others, taking personal responsibility for your own actions, and for the quality and accuracy of the work that you carry out.

Your underpinning knowledge will be sufficient to provide a sound basis for your work, and will enable you to adopt an informed approach to applying scheduled maintenance procedures to electrical equipment. You will have an understanding of the process of implementing scheduled maintenance tasks, the importance of carrying them out at specific times, and of recording their outcomes and actions taken. In addition, you will be expected to report where the outcomes identify the need for further investigation or maintenance work.

You will understand the safety precautions required when carrying out the maintenance activities, especially those for isolating the equipment. You will also understand your responsibilities for safety, and the importance of taking the necessary safeguards to protect yourself and others in the workplace.

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## Performance criteria

*You must be able to:*

- P1 work safely at all times, complying with health and safety and other relevant regulations, directives and guidelines
- P2 follow the relevant maintenance schedules to carry out the required work
- P3 carry out the scheduled maintenance activities within the limits of your personal authority
- P4 carry out the scheduled maintenance activities on electrical equipment in the specified sequence and in an agreed time scale
- P5 deal with problems within your control and report those that cannot be solved
- P6 complete and store all relevant documentation in accordance with organisational requirements
- P7 dispose of waste materials in line with organisational requirements

## Knowledge and understanding

### *You need to know and understand:*

- K1 how to work safely at all times, complying with health and safety and other relevant regulations, directives and guidelines
- K2 the importance of wearing the appropriate personal protective equipment (PPE), and of keeping the work area clean and tidy
- K3 how to obtain and interpret information from job instructions and other documentation used in the maintenance activities
- K4 the various checks to be carried out during the scheduled maintenance procedure
  
- K5 the procedure for obtaining the consumables to be used during the scheduled maintenance activity
- K6 methods of checking that components are fit for purpose, and the need to replace 'lifer' items
- K7 how to check that any replacement components meet the required specification/operating conditions
- K8 how to make appropriate sensory checks
- K9 the appropriate testing instructions to be adopted during the maintenance activity
- K10 how to make adjustments to components/assemblies to ensure they function to specification
- K11 the basic principles of how the equipment functions, its operating sequence, the working purpose of individual units/components, and how they interact
- K12 how to complete scheduled maintenance records/logs/reports, in accordance with company policy and procedures
- K13 the equipment operating and control procedures, and how to apply them in order to carry out scheduled maintenance
- K14 the issues that can occur whilst carrying out the scheduled maintenance tasks, and how they can be avoided
- K15 the extent of your own responsibility and to whom you should report if you have problems that you cannot resolve

## Scope/range related to performance criteria

1. Carry out all of the following during the scheduled maintenance activities:
  - 1.1. undertake the maintenance activities to cause minimal disruption to normal working
  - 1.2. use the correct issue of maintenance documentation (such as drawings, manuals, maintenance records)
  - 1.3. adhere to procedures or systems in place for risk assessment, personal protective equipment and other relevant safety regulations and procedures to realise a safe system of work
  - 1.4. confirm with the authorised person that the equipment is ready for carrying out the scheduled maintenance
  - 1.5. ensure the safe isolation of equipment (such as mechanical, electricity, gas, air or fluids)
  - 1.6. ensure that safe access and working arrangements have been provided for the maintenance area
  - 1.7. carry out the scheduled maintenance tasks, using appropriate techniques and procedures
  - 1.8. dispose of waste items in a safe and environmentally acceptable manner
  - 1.9. leave the work area in a safe and tidy condition
2. Carry out scheduled maintenance tasks on two of the following groups of electrical equipment:
  - 2.1. electrical plant
  - 2.2. wiring enclosures
  - 2.3. portable appliances
  - 2.4. motors and starters
  - 2.5. luminaires
  - 2.6. switchgear and distribution panels
  - 2.7. control systems and components
  - 2.8. other specific electrical equipment
3. Carry out ten of the following scheduled maintenance activities:
  - 3.1. visual examination of condition and security of wiring enclosures (conduit, trunking, traywork)
  - 3.2. checking and replacing 'lived' items (such as batteries, emergency lights, motor brushes)

- 3.3. checking the integrity of connections
  - 3.4. removing excessive dirt and dust from panels
  - 3.5. inspecting and cleaning sensors
  - 3.6. checking the condition of cables
  - 3.7. monitoring condition/deterioration of contactors
  - 3.8. making routine adjustments
  - 3.9. sensory checks (such as sight, sound, smell, touch)
  - 3.10. testing and reviewing system function
  - 3.11. making insulation resistance checks
  - 3.12. checking the integrity and security of earth bonding
  - 3.13. carrying out portable appliance testing (PAT) or arranging for it to be completed (as applicable)
  - 3.14. recording the results of the maintenance and reporting any defects found
4. Maintain electrical equipment, in accordance with one of the following:
    - 4.1. organisational guidelines and codes of practice
    - 4.2. current wiring regulations
    - 4.3. equipment manufacturers' operation range
    - 4.4. BS, ISO and/or BSEN standards
5. Complete one of the following maintenance records, and pass it to the appropriate person:
    - 5.1. job cards
    - 5.2. permit to work/formal risk assessment and/or sign- on/off procedures
    - 5.3. maintenance log or report
    - 5.4. organisational-specific documentation
    - 5.5. electronic reports

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