

# COGPEM46

## Monitor the performance and condition of mechanical plant and equipment



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### Overview

This unit is about your competence in completing performance condition monitoring on operational and static mechanical plant and equipment. You will be required to set-up, monitor and record the results in accordance with company procedures. You will be following your organisation's safe working practices at all times and working within the work permit procedures.

This unit deals with the following:

- 1 Monitor the performance and condition of mechanical plant and equipment

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

### Previous Version:

Adapted from Unit M3.15 of Process Engineering Maintenance NOS – version February 2004. This unit is a tailored version of an Electrical unit produced by the ECITB from the OSC Eng Engineering Competence Standards (ECS 6.04) which was originally designated MPS Mech 7.

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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 and guidelines
- P2 correctly set up and check/calibrate the equipment required for the monitoring being carried out
- P3 carry out the monitoring activities effectively with minimum disruption to normal activities
- P4 record and review the outcomes and take appropriate actions

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### 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 required within your work area
- K3 you must have a working knowledge and understanding of the performance requirements of plant and equipment. This could be expected to include manufacturers' and company specifications on performance requirements
- K4 you must have a working knowledge and understanding of the monitoring methods and procedures for plant and equipment and which data is required to make decisions
- K5 you must have a working knowledge and understanding of the importance of the need for equipment calibration and authorisation procedures including ensuring that the monitoring equipment is set up and calibrated correctly
- K6 you must have a working knowledge and understanding of monitoring equipment setting, operating and care and control procedures. The types of disruption which can occur during monitoring, and how to minimize different types of disruption
- K7 you must have a working knowledge and understanding of the formats for recording and monitoring results in line with company procedures
- K8 you must have a working knowledge and understanding of your responsibilities with regard to the reporting lines and procedures in your working environment

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### Additional Information

#### Scope/range related to performance criteria

- 1 The level and extent of responsibility extends to selecting and modifying methods at your discretion to optimise the effectiveness of the monitoring and assessment undertaken in the conditions applying. In some cases, you may still be expected to refer to others for final authorisations, even though you remain responsible for identifying and implementing decisions.
- 2 The type of assets to be monitored involve multiple technology or are of a single technology interacting with other plant and equipment in a dynamic manner and could include:
  - 2.1 Prime mover
  - 2.2 Distribution systems
  - 2.3 Transmission systems and components
- 3 The monitoring methods and equipment to be used may need to be customised to suit the conditions applying. Typical monitoring methods could include:
  - 3.1 Analysing trends
  - 3.2 Investigating abnormal characteristics
  - 3.3 Researching historical data
  - 3.4 Analysing/reviewing outputs
  - 3.5 Comparison against norm
- 4 The monitoring conditions or operating environment may be normal operating environments which are complex by virtue of access problems and/or the likelihood of disruption to the monitoring process. Conditions may also be abnormal as a result of unusual hazards being present or non-standard demands placed on the operation of the assets.
- 5 The complexity of monitoring to be carried out would include motor tests as advised by company procedures, including:
  - 5.1 Temperature monitoring
  - 5.2 Vibration monitoring
  - 5.3 Current readings
  - 5.4 Run down and up time.

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#### 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 "working knowledge and understanding" indicates you are able to:

- 1 Identify and apply relevant information, procedures and practices to your usual role in your expected working environments needing only occasional recourse to reference materials
- 2 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
- 3 Interpret and apply the information obtained to your role, your working practice and in your expected working environment

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**Relevant occupations** Engineering Professionals; Engineering and manufacturing technologies; Manufacturing technologies

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**Suite** Process Engineering Maintenance

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