

COGPEM47 - SQA Unit Code FP7G 04

Assess the performance and condition of mechanical plant and equipment



Overview

This unit is about your competence in assessing the performance and condition of Mechanical plant and equipment using all available sources of information. You will be required to check that you have all the necessary data, complete the assessment and analyse the results by comparing with norms and previous records. To record the results you will follow company procedures and your organisation's safe working practices at all times and working within the work permit procedures.

This unit deals with the following:

- 1 Assess 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 M3.16 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 6.05) which was originally designated MPS Mech 8.

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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 ensure that you have the necessary test data on which to conduct the assessment
- P3 carry out the assessment using all relevant data and valid methods
- P4 check that the assessment provides clear and accurate information
- P5 compare current performances and condition data with that from previous assessments
- P6 identify and report the implications arising from the assessments
- P7 record the results of the assessments in the appropriate format

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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 equipment operating and test specifications including manufacturers' and company specifications
- K4 you must have a working knowledge and understanding of the equipment monitoring methods and procedures including the types of data provided from monitoring, which methods can verify data and why it is important to do so
- K5 you must have a working knowledge and understanding of the assessment methods and techniques for specific data and plant and equipment, and the factors that have to be taken into account when assessing performance of specific plant and equipment
- K6 you must have a working knowledge and understanding of the reporting documentation and control procedures including how to present results of the assessment, and who should receive the results and implications of assessments
- K7 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 assessed involve multiple technology or are of a single technology interacting with other plant and equipment in a dynamic manner. Typical assets could include:
 - 2.1 Prime movers
 - 2.2 Distribution systems
 - 2.3 Transmissions systems and components
- 3 The type of data to be analysed covers:
 - 3.1 Vibration
 - 3.2 Temperature
 - 3.3 Current
 - 3.4 Voltage
- 4 The analysis methods to be used covers:
 - 4.1 Comparison to manufacturers' specification
 - 4.2 Historical
 - 4.3 Maintenance records
 - 4.4 Trend analysis
- 5 The complexity of monitoring information to be used could include motor, plant or equipment tests as advised by company procedures. The information gained will vary in complexity and depend on the assessment being carried out. The information gathered will be used in various ways as dictated by the test or company procedures.
 - 5.1 Run down and up time.

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

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- 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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Suite Process Engineering Maintenance

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