ECIMPSM08
Diagnose and determine the causes of faults in mechanical plant and equipment

Overview

This standard is about diagnosing and determining the causes of faults in engineering construction mechanical plant and equipment.

You will need to be able to complete fault diagnosis and determine the implications of the fault whilst 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

This standard is for mechanical maintenance technicians.

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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 legislation, regulations, guidelines and local rules or procedures

P2 ensure that the **work environment**, **assets**, material, equipment and tools are suitably prepared for the activities to be undertaken

P3 review and use all relevant information on the symptoms and problems associated with the products or assets

P4 select, use and apply diagnostic techniques, tools and aids to locate faults

P5 complete the diagnosis as required, within the agreed time limit (if relevant) and inform the appropriate people when this cannot be achieved

P6 determine the implications of the fault for other work and for safety considerations

P7 use the evidence gained to draw valid conclusions about the nature and probable cause of the fault

P8 record details on the extent and location of the faults in an appropriate format

P9 **reinstate the work area**

P10 deal promptly and effectively with problems within your control and report those that cannot be solved

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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, and the possible consequences of incorrect actions in these areas

K3 **fault finding methods and techniques** and equipment used

K4 analysis methods and techniques used for fault finding

K5 the likely risks associated with faults

K6 procedures for recording accurate data with regard to the diagnosis including documentation and control procedures

K7 your responsibilities for ensuring care and security of tools and equipment used

K8 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)

Assets

This term could include:

1 components of process systems
2 compressors
3 engines
4 heat exchangers
5 HVAC systems
6 pumps
7 pressure vessels
8 protection devices
9 rotating equipment and tools
10 transmission systems
11 turbines

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

Fault finding methods and techniques

Diagnosis is achieved by applying procedures which are formally specified or which are devised in response to the symptoms of the fault. Typical procedures could include:

1 dimensional
2 performance
3 visual

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