PROMPR24
Carrying out preventative planned maintenance on mechanical equipment

Overview

This standard identifies the competences you need to carry out preventative planned maintenance activities on mechanical equipment, in accordance with approved procedures. You will be required to carry out planned maintenance activities on a range of mechanical equipment, such as machine tools, processing plant and equipment, transfer devices, gear mechanisms, mechanical control devices, pumps, compressors, valves, lifting and handling equipment, and mechanical structures, in order to minimise down time and ensure that they perform at optimum level and function 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 the maintenance process, tools or equipment used that you cannot personally resolve, or that 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 with minimal supervision, taking personal responsibility for your own actions, and for the quality and accuracy of the work that you carry out.

Your underpinning knowledge will provide a good understanding of your work, and will provide an informed approach to applying planned maintenance procedures to mechanical equipment. You will understand the process of developing planned maintenance, and its application, and will know about the maintenance criteria in adequate depth to provide a sound basis for carrying out the activities safely and effectively, and for ensuring that the system is maintained to the required specification and remains compliant with all standards and regulations. In addition, you will be expected to report where the outcome identifies 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 and guidelines

P2 follow the relevant maintenance schedules to carry out the required work

P3 carry out the maintenance activities within the limits of your personal authority

P4 carry out the maintenance activities in the specified sequence and in an agreed timescale

P5 report any instances where the maintenance activities cannot be fully met or where there are identified defects outside the planned schedule

P6 complete relevant maintenance records accurately and pass them on to the appropriate person

P7 dispose of waste materials in accordance with safe working practices and approved procedures

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Knowledge and understanding

You need to know and understand:

K1 the health and safety requirements of the area in which the preventative maintenance activity is to take place, and the responsibility these requirements place on you

K2 the isolation procedures or permit-to-work procedure that applies to the equipment being maintained

K3 the specific health and safety precautions to be applied during the planned maintenance activity, and their effects on others

K4 the importance of wearing protective clothing and other appropriate safety equipment during the maintenance activities

K5 hazards associated with carrying out planned maintenance activities on mechanical equipment (such as handling oils/greases, stored pressure/force, misuse of tools), and how to minimise these and reduce any risks

K6 where to obtain, and how to interpret drawings, specifications, manufacturers' manuals, maintenance schedules and other relevant documents

K7 the various planned maintenance schedules that are generally used (such as condition based maintenance, scheduled maintenance, and total preventative maintenance [tpm])

K8 the procedure for obtaining consumables to be used during the planned maintenance activity

K9 how to make appropriate sensory checks (sight, sound, smell and touch)

K10 the appropriate testing procedures to be adopted during the maintenance activity

K11 how to make adjustments to components/assemblies to ensure they function to specification

K12 the functionality of various mechanical components and their interrelationship with other components and assemblies

K13 how to compile planned maintenance records/logs/reports in accordance with company policy and procedures

K14 the equipment operating and control procedures, and how to apply them in order to carry out planned maintenance

K15 the problems that can occur whilst carrying out the planned maintenance activities, and how they can be avoided

K16 the organisational procedure(s) to be adopted for the safe disposal of waste of all types of materials

K17 the extent of your own authority and to whom you should report if you have problems that you cannot resolve

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Additional Information

Scope/range

The numbers of scope items specified (below) indicate the minimum requirements for this occupational standard. You must:

1 Carry out all of the following during the planned maintenance activities:

1.1 plan and communicate the maintenance activities to cause minimal disruption to normal working
1.2 obtain and use the correct issue of company and/or manufacturers' drawings and maintenance documentation
1.3 adhere to procedures or systems in place for risk assessment, coshh, personal protective equipment and other relevant safety regulations and procedures to realise a safe system of work
1.4 ensure the safe isolation of equipment (such as mechanical, electricity, gas, air or fluids)
1.5 provide and maintain safe access and working arrangements for the maintenance area
1.6 carry out the maintenance activities using appropriate techniques and procedures
1.7 functionally test and adjust equipment to specification
1.8 re-connect and return the system to service on completion of the maintenance activities
1.9 dispose of waste items in a safe and environmentally acceptable manner, and leave the work area in a safe condition

2 Carry out planned maintenance activities on three of the following:

2.1 gearboxes
2.2 machine tools
2.3 lifting and handling equipment
2.4 processing plant
2.5 engines
2.6 pumps
2.7 process control valves
2.8 compressors
2.9 workholding devices
2.10 transfer equipment
2.11 mechanical structures
2.12 company-specific equipment

3 Follow planned maintenance activities using one of the following types of maintenance schedules:

3.1 condition based maintenance
3.2 preventative planned maintenance
3.3 scheduled maintenance
3.4 total preventative maintenance

4 Carry out all of the following planned maintenance activities:

4.1 visual examination and testing of equipment against maintenance schedule
4.2 replacing 'lifed' consumables (such as oils, grease, belts, gaskets and seals)
4.3 checking condition of drive belts, chains, bearings, seals, guards
4.4 checking operation of all gauges and sensors
4.5 monitoring component condition/deterioration
4.6 making sensory checks (such as sight, sound, smell, touch)
4.7 carrying out equipment self analysis checks
4.8 checking alignment of running/sliding components
4.9 making routine adjustments
4.10 carrying out leak checks on all connections
4.11 testing and reviewing system operation removing excessive dirt and grime
4.12 recording the results of the maintenance and reporting any defects found

5 Ensure that the maintained equipment meets all of the following:

5.1 all maintenance activities have been completed to the required schedule
5.2 equipment operates within acceptable limits for successful continuous operation to meet output specification
5.3 equipment remains compliant with appropriate regulations and safety requirements
5.4 any potential defects are identified and reported for future action

6 Complete the relevant paperwork from one of the following, and pass it to the appropriate people:

6.1 job cards
6.2 maintenance log or report
6.3 permit to work/formal risk assessment and/or sign-on/off procedures
6.4 company-specific documentation

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Developed by	Proskills
Version number	1
Date approved	June 2010
Indicative review date	April 2014
Validity	Current
Status	Original
Originating organisation	Semta
Original URN	Unit 9
Relevant occupations	Originators compositors and print preps; Printers; Screen printers; Printing machine minders and assistants; Bookbinders and print finishers; Graphic designers
Suite	Master Printer
Key words	Master Printer; Print Management; Print Production; Processes and Engineering Management