

Overview

This standard identifies the competences you need to carry out corrective maintenance activities on fixed and portable environmental control equipment, in accordance with approved procedures. This will involve dismantling, removing and replacing or repairing faulty components, in line with company procedures, on environmental control equipment such as air pollution, effluent treatment, noise and vibration control, waste and used product storing or recycling equipment.

You will be expected to cover a range of maintenance activities, such as labelling/markings to aid reassembly, dismantling components to the required level, setting, aligning and adjusting components, replacing 'lived' items, replenishing oils, greases or other fluids, torque loading components, and making 'off-load' checks before testing and starting up the maintained equipment, using appropriate techniques and procedures.

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 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 maintenance procedures to environmental control equipment. You will have an understanding of dismantling and reassembly methods and procedures, and their application. You will know how the environmental control equipment functions and the purpose of individual components, in adequate depth to provide a sound basis for carrying out any repair or adjustment. In addition, you will have sufficient knowledge of these components to ensure that they are fit for purpose and meet the specifications, thus providing a sound basis for carrying out reassembly.

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

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protect yourself and others in the workplace.

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 maintenance activities within the limits of your personal authority
- P4 carry out the maintenance activities in the specified sequence and in an agreed time scale
- P5 maintain and/or replace components as required
- P6 deal with issues within your control and report those that cannot be solved
- P7 complete and store all relevant documentation in accordance with organisational requirements
- P8 dispose of waste materials in line with organisational and environmentally safe procedures

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 procedure for obtaining replacement parts, materials and other consumables necessary for the maintenance activities
- K5 the sequence to be adopted for the dismantling/reassembly of various types of assemblies
- K6 the methods and techniques used to dismantle/assemble environmental control equipment
- K7 methods of checking that components are fit for purpose, how to identify defects and wear characteristics, and the need to replace 'lifer' items
- K8 how to make adjustments to components/assemblies to ensure that they function correctly
- K9 the basic principles of how environmental control systems function, their operating sequence, the working purpose of individual units/components and how they interact
- K10 methods of removing and replacing components and units, without damaging the system and infrastructure
- K11 how to check that tools and equipment are free from damage or defects, are in a safe and usable condition, and are configured correctly for their intended purpose
- K12 the generation of maintenance documentation and/or reports following the maintenance activity
- K13 the equipment operating and control procedures to be applied during the maintenance activity
- K14 how to use lifting and handling equipment correctly and safely in the maintenance activity
- K15 the issues associated with the maintenance activity, and how they can be overcome
- K16 the organisational procedure to be adopted for the safe disposal of waste of all types of materials
- K17 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 maintenance activity:
 - 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, schedules)
 - 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. ensure the safe isolation of equipment (such as mechanical, electricity, gas, air or fluids)
 - 1.5. ensure that safe access and working arrangements have been provided for the maintenance area
 - 1.6. carry out the scheduled maintenance tasks, using appropriate techniques and procedures
 - 1.7. re-connect and return the equipment to service on completion of the maintenance activities
 - 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 maintenance activities on one of the following types of environmental control equipment:
 - 2.1. air pollution control equipment (such as decarbonisation (CO₂ reduction), denitrification, deodorising, desulphurisation, dust collectors, smoke filters, scrubbers, and removal of refrigerant gases)
 - 2.2. effluent treatment equipment (such as aerobic and anaerobic biochemical treatment, filter screens and presses, liquid separators, waste oil treatment, sewage treatment, industrial waste water treatment)
 - 2.3. noise and vibration equipment (such as vibration prevention and isolation, noise attenuation and acoustic enclosures)
 - 2.4. waste and used product handling, storing and recycling equipment (such as appliance recycling, battery recycling, incinerators, ash handling, heat recovery, shredders and crushers, conveyors and sorters, compaction)

3. Carry out all of the following maintenance activities:
 - 3.1. dismantling equipment to the required level

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- 3.2. marking/labelling of components
 - 3.3. checking components for serviceability
 - 3.4. replacing 'lified' items (such as filters, seals, gaskets)
 - 3.5. replacing damaged/defective components
 - 3.6. setting, aligning and adjusting components
 - 3.7. checking the correct operation of all safety devices
 - 3.8. replenishing oils, greases or other fluids
 - 3.9. tightening fasteners to the required torque
 - 3.10. functionally testing the completed system
 - 3.11. recording the results of the maintenance activity
 - 3.12. reporting or taking action with regard to any defects that require immediate attention (such as replacing non-'lified' components)
4. Maintain and/or replace six of the following environmental control mechanical components:
- 4.1. actuators
 - 4.2. dampers
 - 4.3. levers and links
 - 4.4. pumps
 - 4.5. bearings
 - 4.6. enclosures and guards
 - 4.7. lubrication systems
 - 4.8. safety devices
 - 4.9. belt drives
 - 4.10. exhaust systems
 - 4.11. mechanical isolators
 - 4.12. seals and gaskets
 - 4.13. burners
 - 4.14. fasteners
 - 4.15. mechanical overloads
 - 4.16. sorting screens
 - 4.17. chains and sprockets
 - 4.18. filters (individual)
 - 4.19. spill kits
 - 4.20. containment booms
 - 4.21. flow measurement

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- 4.22. noise attenuation
- 4.23. storage tanks
- 4.24. conveyor belts
- 4.25. gauges
- 4.26. pipework
- 4.27. test systems
- 4.28. couplings
- 4.29. geared drives
- 4.30. pollution samplers
- 4.31. valves
- 4.32. pulleys and belts

or

maintain and/or replace six of the following environmental control electrical components:

- 4.33. wires and cables
- 4.34. switches and contactors
- 4.35. circuit boards
- 4.36. electrical isolators
- 4.37. electrical trips
- 4.38. motor starters
- 4.39. flow measurement devices
- 4.40. infra-red monitoring devices
- 4.41. interlocks
- 4.42. inverters
- 4.43. level floats and indicators
- 4.44. meters
- 4.45. relays
- 4.46. pollution samplers
- 4.47. resistors
- 4.48. safety devices
- 4.49. switchgear
- 4.50. sensors solenoids
- 4.51. switches
- 4.52. thermistors

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- 4.53. thermocouples
- 4.54. thermostats
- 4.55. timers
- 4.56. transducers
- 4.57. transformers

5. Maintain environmental control equipment, in accordance with one of the following:

- 5.1. organisational guidelines and codes of practice
- 5.2. equipment manufacturer's operation range
- 5.3. company regulations
- 5.4. BS, ISO and/or BSEN standards

6. Complete one of the following maintenance records, and pass it to the appropriate person:

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

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