

Assisting in implementing engineering activities

Overview

This standard identifies the competences you need to support colleagues in the implementation of engineering activities, in accordance with approved procedures. You will assist in gathering all the information necessary to carry out the implementation activities, in accordance with the implementation plan. You will be required to assist in applying appropriate methods and procedures to implement the engineering activity, and to ensure that the resources and systems available to you are used effectively and efficiently.

Your responsibilities will require you to comply with organisational policy and procedures for the implementation of the engineering activities, and to report any problems that you cannot personally resolve, or that are outside your permitted authority, to the relevant people. You will be expected to work to instructions, either 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 implementing engineering activities. You will have an understanding of your organisation's methods of operation and quality assurance systems, in sufficient depth to enable you to carry out the implementation activities to the required standard.

You will be aware of any company, legislative or regulatory health, safety and environmental requirements applicable to the engineering activity being implemented. You will also understand the safety precautions required when carrying out the implementation activities, especially those involved with moving machinery/equipment. You will be required to demonstrate safe working practices throughout, and will 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:

1. confirm that conditions are suitable to implement engineering methods and procedures
2. provide clear and accurate instructions to all the relevant people
3. obtain accurate information on the activities being undertaken
4. ensure that quality assurance systems are correctly implemented
5. ensure that engineering support systems are operating correctly
6. control the use of resources to achieve the most effective results
7. identify opportunities to improve the engineering methods and procedures
8. ensure that the implementation of engineering methods and procedures complies with all relevant regulations and guidelines

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Knowledge and understanding

You need to know and understand:

1. how to access information on health and safety regulations and guidelines relating to the engineering activities to be implemented
2. the implications of not taking account of legislation, regulations, standards and guidelines when implementing the engineering activities
3. the personal protective equipment (PPE) that is required for the work area and process being implemented
4. how to obtain information on the engineering requirements, and the types of information that are available (such as customer requirements and instructions, quality control requirements, product specification, manufacturing methods)
5. how to access and use the appropriate information and documentation systems
6. the types of information that you will require in order to implement the engineering activity (such as the activities to be carried out, the sequence in which they must be carried out, timescales, resource requirements, health and safety issues)
7. how to extract information from drawings, documents and related specifications (to include symbols and conventions to appropriate BS or ISO standards and, where appropriate regulations) in relation to work being implemented
8. the factors to be taken into account when implementing the engineering activity (especially those covering working conditions and safety)
9. the main types of resource involved with different types of engineering activity, and the typical timescales for providing them
10. how to verify that resources are suitable, and are available within or to the organisation
11. the timescales for carrying out specific engineering activities, and why they must be adhered to
12. the use of the engineering plans and instruction (to include working instructions), along with their purpose and content
13. the procedures for changing the plans, to take account of changed circumstances or improvements in the process
14. the importance of maintaining records; what needs to be recorded, and where records are kept
15. the quality assurance systems that are being used
16. the importance of providing the right information at the right time
17. the roles and responsibilities of key personnel associated with the engineering activity
18. the types of problem that can occur during the implementation of the engineering activity, and how these problems can be avoided or

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rectified
19.

the extent of your own authority and to whom you should report in the event of problems that you cannot resolve

Scope/range related to performance criteria

1. Carry out **all** of the following when implementing the engineering activities:
 1. check that all essential information and data needed to implement the engineering activity are available
 2. collect relevant information on the customer requirements and engineering operations and methods
 3. use the information collected to assist in determining an implementation plan
 4. identify potential problems which may influence the implementation of the engineering activity
 5. check that the appropriate resources will be available at the time they are required
 6. ensure that health and safety regulations and safe working practices are taken into account
2. Assist in carrying out the implementation of **one** of the following engineering activities:
 1. drawing/design activities (such as mechanical, electrical/electronic, motor vehicle, aerospace, marine)
 2. manufacturing activities (such as machining, detail fitting, fabrication of components, pressing)
 3. material processing activities (such as heat treatment, casting, injection moulding, purification)
 4. composite manufacture (such as wet lay-up, pre-preg laminating, resin infusion, blow moulding)
 5. finishing activities (such as stripping finishes, painting, plating, anodising, veneering, lacquering)
 6. assembly activities (such as mechanical, structural, fluid power, electrical/electronic, woodworking)
 7. installation activities (such as mechanical, electrical/electronic, avionic, structural, environmental equipment)
 8. plant and equipment (such as site preparation, plant layout, equipment changeover, equipment replacement)
 9. equipment capability studies/performance measurement
 10. movement of materials, components or finished goods
 11. engineering safety audits or risk assessments
 12. business improvement activities
 13. quality control/quality assurance
 14. maintenance activities
 15. modification and repair activities
 16. commissioning/decommissioning
 17. testing and trialling

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18. research and development
 19. engineering support services
3. Obtain information on activities and resources required for the engineering activity to be implemented, from **two** of the following
1. design office
 2. production engineering
 3. process engineering
 4. sales department
 5. quality engineering
 6. contractor
 7. planning department
 8. plant engineering
 9. customer
 10. management/directors
 11. health and safety/environmental engineering
 12. other specific areas or persons
4. Confirm **all** of the following during the implementation:
1. appropriate plant and equipment is available
 2. health and safety requirements can be met
 3. materials and components are ready for use
 4. environmental conditions are suitable
 5. required resources are available
 6. work area/site is suitably prepared
 7. timescales for undertaking the activities are as planned
 8. relevant people are informed
 9. quality control systems and procedures are in place
5. Provide clear and accurate information/instructions to all relevant parties, using **one** of the following methods:
1. specific company documentation
 2. verbal report
 3. written or typed report
 4. electronic mail
6. Ensure that quality assurance systems are implemented correctly, and confirm that support systems are operating effectively, including **one** of the following:
1. resource supply (such as materials, equipment and people)
 2. transport
 3. logistics
 4. procurement
 5. utilities

7. Ensure that implementation methods and procedures used comply with relevant regulations and guidelines, from **one** of the following:
 1. organisational guidelines and codes of practice
 2. equipment manufacturer's operating specification/range
 3. health, safety and environmental requirements
 4. recognised compliance agency/body's standards
 5. customer standards and requirements

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