



Australian Government

MSS404081 Undertake proactive maintenance analyses

Release: 1

MSS404081 Undertake proactive maintenance analyses

Modification History

Release 1. Supersedes and is equivalent to MSS404081A Undertake proactive maintenance analyses

Application

This unit of competency covers the skills and knowledge required to undertake the most common forms of analyses associated with predictive/preventative/reliability centred maintenance strategies.

This unit applies to a technical expert (usually an engineer, technician or tradesperson) who is required to undertake analyses for the purpose of predictive/preventative/reliability centred maintenance as part of a competitive systems and practices strategy.

This unit primarily requires the application of skills associated with communication, teamwork, problem solving, initiative and enterprise, and planning and organising in order to undertake maintenance analyses. This is normally done in the context of using computer technology, and requires aspects of learning and self-management to ensure team involvement and facilitation of learning.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Pre-requisite Unit

Nil

Competency Field

Competitive systems and practices

Unit Sector

Not applicable

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe the performance needed to demonstrate achievement of the element.

1 Liaise with operator

1.1 Establish a relationship with the operator of equipment/plant.

1.2 Ensure the operator has the required skills and resources to keep the equipment/plant clean.

- 1.3 Ensure the operator is able to effectively monitor the operation of the equipment/plant.
 - 1.4 Regularly communicate with operator about the overall equipment effectiveness (OEE) of their equipment/plant.
 - 1.5 Involve operator, team leader and other key personnel in identification of skill needs and means of skill acquisition to fill any identified gaps.
- 2 **Analyse history**
 - 2.1 Analyse mean time between failures (MTBF) from maintenance records.
 - 2.2 Analyse performance data of the equipment/plant.
 - 2.3 Identify causes of changes to historic trends/status.
 - 2.4 Determine methods of ensuring causes of improvements and resolution of deterioration are locked in.
- 3 **Undertake failure mode effects analysis (FMEA) or similar failure effects analysis**
 - 3.1 Undertake analysis.
 - 3.2 Record results of analysis.
 - 3.3 Investigate methods of eliminating possibility of failure and/or minimising the impact of the failure.
 - 3.4 Liaise with operator, team leader and other key personnel regarding possible solutions.
 - 3.5 Select most appropriate solution.
 - 3.6 Implement selected solutions.
- 4 **Undertake condition monitoring analysis**
 - 4.1 Obtain data for condition monitoring analysis.
 - 4.2 Interpret condition monitoring data.
 - 4.3 Predict required maintenance type and timing from condition monitoring data.
 - 4.4 Liaise with operator, team leader and other key personnel regarding implications of condition monitoring report.

- 4.5 Involve team members in development of changes to maintenance strategy to ensure awareness, learning and commitment.

Foundation Skills

This section describes those required skills (language, literacy and numeracy) that are essential to performance.

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Range of Conditions

This field allows for different work environments and conditions that may affect performance. Essential operating conditions that may be present (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) are included.

Competitive systems and practices include one or more of:

- lean operations
- agile operations
- preventative and predictive maintenance approaches
- statistical process control systems, including six sigma and three sigma
- Just in Time (JIT), kanban and other pull-related operations control systems
- supply, value, and demand chain monitoring and analysis
- 5S
- continuous improvement (kaizen)
- breakthrough improvement (kaizen blitz)
- cause/effect diagrams
- overall equipment effectiveness (OEE)
- takt time
- process mapping
- problem solving
- run charts
- standard procedures
- current reality tree.

Unit Mapping Information

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Links

Companion Volume implementation guides are found in VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=5b04f318-804f-4dc0-9463-c3fb9a3fe998>

Assessment Requirements for MSS404081 Undertake proactive maintenance analyses

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Performance Evidence

Evidence required to demonstrate competence in this unit must be relevant to and satisfy the requirements of the elements and performance criteria and include the ability, for two (2) or more items of equipment/plant, to:

- identify and analyse data and other information on the historical performance of equipment
- undertake MBTF, FMEA and condition monitoring analyses
- involve operators, maintenance and other stakeholders in decisions on proactive maintenance strategies
- identify root cause of failure and deterioration in equipment performance
- select and implement failure elimination or minimisation solutions.

Knowledge Evidence

Must provide evidence that demonstrates knowledge relevant to their job role sufficient to fulfil their job role independently, including:

- cleaning needs, techniques and principles of equipment in area of responsibility
- methods of assessing operator and maintenance skill gaps and filling them
- techniques for determining MTBF or similar
- techniques for undertaking FMEA or similar
- principles of competitive systems and practices strategies being implemented and how to adapt them to maintenance
- root cause analysis
- techniques to analyse condition monitoring data.

Assessment Conditions

- The unit should be assessed holistically and the judgement of competence shall be based on a holistic assessment of the evidence.
- The collection of performance evidence is best done from a report and/or folio of evidence drawn from:
 - a single project which provides sufficient evidence of the requirements of all the elements and performance criteria
 - multiple smaller projects which together provide sufficient evidence of the requirements of all the elements and performance criteria.

- A third-party report, or similar, may be needed to testify to the work done by the individual, particularly when the project has been done as part of a project team.
- Assessment should use a real project in an operational workplace.
- Knowledge evidence may be collected concurrently with performance evidence or through an independent process such as workbooks, written assessments or interviews (provided a record is kept).
- Assessment processes and techniques must be appropriate to the language, literacy and numeracy requirements of the work being performed and the needs of the candidate.
- Conditions for assessment must include access to all tools, equipment, materials and documentation required, including relevant workplace procedures, product and manufacturing specifications associated with this unit.
- Foundation skills are integral to competent performance of the unit and should not be assessed separately.
- Assessors must satisfy the assessor competency requirements that are in place at the time of the assessment as set by the VET regulator.
- The assessor must demonstrate both technical competency and currency.
- Technical competence can be demonstrated through:
 - relevant VET or other qualification/Statement of Attainment AND/OR
 - relevant workplace experience
- Currency can be demonstrated through:
 - performing the competency being assessed as part of current employment OR
 - having consulted with an organisation providing relevant environmental monitoring, management or technology services about performing the competency being assessed within the last twelve months.

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