



Australian Government

Department of Education, Employment and Workplace Relations

MSS405020A Develop quick changeover procedures

Release: 1

MSS405020A Develop quick changeover procedures

Modification History

New unit, superseding MSACMT620A Develop quick changeover procedures - Equivalent

Unit Descriptor

This unit of competency covers the skills and knowledge required to develop/improve changeovers for equipment, processes or operations. It includes critically analysing existing changeovers, applying quick changeover principles, and developing improved changeover procedures.

Application of the Unit

This unit applies to managers, technical specialists or similar in an organisation that has adopted or is adopting a quick changeover approach to its changeovers. The changeovers may be to equipment, processes or operations. This unit applies to the structured development and/or improvement of the changeover procedures.

This unit requires the application of skills associated with communication, problem solving, initiative, enterprise, planning and organising in order to analyse and determine changeover procedures. This unit also requires aspects of self-management and learning to ensure feedback and new learning is integrated into the development of procedures.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Not applicable.

Employability Skills Information

This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.

Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

| | | | |
|---|---|-----|--|
| 1 | Analyse changeover | 1.1 | Critically observe changeover process |
| | | 1.2 | Identify steps in changeover |
| | | 1.3 | Identify start situation and required finish situation for changeover |
| 2 | Apply quick changeover principles | 2.1 | Identify changes to the start situation and required finish situation which are possible |
| | | 2.2 | Identify internal and external changeover activities |
| | | 2.3 | Identify activities which could be improved/eliminated |
| | | 2.4 | Eliminate/reduce adjustments required after changeover |
| | | 2.5 | Develop improved changeover process and recommendations for implementation procedure |
| | | 2.6 | Liaise with relevant people to validate recommendations |
| 3 | Assess and minimise risks in changeover | 3.1 | Analyse hazards and risks from all steps in changeover |
| | | 3.2 | Apply ergonomic principles and hierarchy of control to each equipment and manual hazard |
| | | 3.3 | Assess any regulatory risk in changeover |

- 3.4 Minimise hazards during changeover ensuring final risk profile is acceptable
- 4 Implement improved changeover
 - 4.1 Acquire any required resources and approvals
 - 4.2 Organise trials of improved changeover
 - 4.3 Monitor trial
 - 4.4 Make adjustments to changeover process
 - 4.5 Implement improved changeover process

Required Skills and Knowledge

This section describes the skills and knowledge required for this unit.

Required skills

Required skills include:

- critically analysing an existing changeover, including a detailed examination of all actions and delays and the times taken
- determining key steps in changeover
- identifying regulatory implications and other risks changes to procedures
- differentiating between habitual practice and necessary activity
- identifying opportunities to maximise external set up work
- communicating with others to explain and supervise changed procedures

Required knowledge

Required knowledge includes:

- principles of quick changeover
- equipment and operating environment of activities subject to quick changeover
- regulatory and commercial obligations and risk environment for operations subject to quick changeover analysis
- safe movement and other relevant occupational health and safety (OHS) principles
- relevant procedures
- purposes/requirements of changeover
- sourcing of resources
- trialling procedures

Evidence Guide

The evidence guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.

| | |
|--|---|
| <p>Critical aspects for assessment and evidence required to demonstrate competency in this unit</p> | <p>A person who demonstrates competency in this unit must be able to provide evidence of their ability to:</p> <ul style="list-style-type: none"> • observe and analyse steps in an existing changeover • manage risks in adjusting changeover procedures |
|--|---|

| | |
|---|---|
| | <ul style="list-style-type: none"> • develop changeover adjustments that deliver the greatest overall benefit • supervise changeover procedure trials. |
| Context of and specific resources for assessment | <p>Assessment of performance must be undertaken in a workplace using or implementing one or more competitive systems and practices.</p> <p>Access may be required to:</p> <ul style="list-style-type: none"> • workplace procedures and plans relevant to work area • specifications and documentation relating to planned, currently being implemented, or implemented changes to work processes and procedures relevant to the assessee • documentation and information in relation to production, waste, overheads and hazard control/management • reports from supervisors/managers • case studies and scenarios to assess responses to contingencies. |
| Method of assessment | <p>A holistic approach should be taken to the assessment.</p> <p>Competence in this unit may be assessed by using a combination of the following to generate evidence:</p> <ul style="list-style-type: none"> • demonstration in the workplace • workplace projects • suitable simulation • case studies/scenarios (particularly for assessment of contingencies, improvement scenario, and so on) • targeted questioning • reports from supervisors, peers and colleagues (third-party reports) • portfolio of evidence. <p>In all cases it is expected that practical assessment will be combined with targeted questioning to assess underpinning knowledge.</p> <p>Where applicable, reasonable adjustment must be made to work environments and training situations to accommodate ethnicity, age, gender, demographics and disability.</p> |
| Guidance information for assessment | <p>Assessment processes and techniques must be culturally appropriate and appropriate to the oracy, language and literacy capacity of the candidate and the work being performed.</p> |

Range Statement

The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.

| | |
|---|---|
| <p>Competitive systems and practices</p> | <p>Competitive systems and practices may include, but are not limited to:</p> <ul style="list-style-type: none"> • lean operations • agile operations • preventative and predictive maintenance approaches • monitoring and data gathering systems, such as Systems Control and Data Acquisition (SCADA) software, Enterprise Resource Planning (ERP) systems, Materials Resource Planning (MRP) and proprietary systems • 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 <p>Competitive systems and practices should be interpreted so as to take into account:</p> <ul style="list-style-type: none"> • the stage of implementation of competitive systems and practices • the size of the enterprise • the work organisation, culture, regulatory |
|---|---|

| | |
|-------------------------|---|
| | environment and the industry sector |
| Changeover | <p>Changeover may refer to:</p> <ul style="list-style-type: none"> • equipment exchanges, such as an exchange of dies/tools (traditional) • change between batches • change between campaigns (process manufacturing) • quantum equipment/process change to produce a different product |
| Quick changeover | <p>Quick changeovers may be known by a number of alternative titles depending on the industry sector. In manufacturing quick changeovers may be referred to as:</p> <ul style="list-style-type: none"> • single minute exchange of die (SMED) • single-digit set-up – performing a set-up activity in a single-digit number of minutes (i.e. fewer than ten) • one touch exchange of die (OTED) – literally, changing a die with one physical motion, such as pushing a button – broadly, an extremely simple procedure for performing a set-up activity <p>While the term die is the traditional term, organisations that require changeovers using other equipment are also covered by this unit.</p> <p>This unit may not be applicable to a totally continuous operation producing only the one product, or simultaneous range of products. This is not applicable to a maintenance/pressure vessel inspection (PVI) shutdown as experienced by the continuous process manufacturers. However, where there are continuous operations on a campaign basis, it may be applied to the development of changeover procedures between campaigns or similar changeovers</p> |
| Set-up work | <p>Set-up time is the work required to change over a machine or process from one item or operation to the next item or operation. It can be divided into two types:</p> <ul style="list-style-type: none"> • internal set-up work that can be done only when the machine or process is not actively engaged • external set-up work that can be done concurrently with the machine or process performing productive duties |
| Principles | <p>The principles of quick changeover include:</p> <ul style="list-style-type: none"> • the principles of efficient movement as well as an understanding of equipment features and aids, including jigs, fixtures, locating devices and |

| | |
|----------------------------|---|
| | mechanical aids which will reduce human effort and time required |
| Improved/eliminated | <p>Activities which should be improved/eliminated include:</p> <ul style="list-style-type: none"> • those which take time or are unreliable in terms of outcome • those which are difficult to do or have adverse OHS implications (e.g. repetitive strain injury, back injury and finger injuries) |
| Hazards and risks | <p>Hazards and risks include those related to:</p> <ul style="list-style-type: none"> • OHS • regulatory compliance • environment • commercial and contractual obligations <p>An acceptable risk profile for changeovers is one which, at the minimum, meets regulatory and organisation requirements and does not increase the current risk profile</p> |
| Procedures | <p>Procedures may include:</p> <ul style="list-style-type: none"> • work instructions • standard operating procedures • formulas/recipes • batch sheets • temporary instructions and similar instructions provided for the smooth running of the plan • good operating practice as may be defined by industry codes of practice (e.g. good manufacturing practice (GMP) and responsible care) • government regulations <p>Procedures may be:</p> <ul style="list-style-type: none"> • written, verbal, computer-based or in some other format |

Unit Sector(s)

Unit sector

Competitive systems and practices

Custom Content Section

Not applicable.