Australian Government

Department of Education, Employment and Workplace Relations

MSAPCII295A Operate manufacturing equipment

Revision Number: 1

MSAPCII295A Operate manufacturing equipment

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This competency covers the operation of production equipment and the resolving of routine problems in a simulated or trial manufacturing environment where there is a high degree of direct supervision. This competency is intended to be applied to any item of routine production equipment. This competency can be performed by operators working either independently or as part of a work team.

Application of the Unit

Application of the unit	This unit applies to a learning and assessment environment where access to normal production operations is not available . A typical environment will be for application in a VET in Schools delivery environment or other simulated or trial manufacturing environment where a high degree of direct supervision exists. The unit covers the making of a product or products to meet established quality standards and workplace requirements using routine manufacturing equipment. It includes: • checking specifications and work requirements • following established OHS and hazard minimisation procedures • monitoring equipment operation and reporting process variations • checking product for quality and conformity to specifications • dealing with non-conforming products/materials in accordance with procedures • identifying and rectifying/reporting on routine process problems • completing pro-forma production logs and reports.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Prerequisite units		

Employability Skills Information

Employability skills	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

ELEMENT	PERFORMANCE CRITERIA
1. Check job requirements.	1.1. Identify ***workplace*** requirements by following established ***procedures*** and practices 1.2. Identify product, materials and ***equipment*** requirements for job(s)
2. Control hazards.	2.1. Identify ***hazards*** in the production work area 2.2. Assess the risks arising from those hazards 2.3. Implement measures to control or avoid those risks in line with procedures and duty of care to fellow workers.
3. Prepare equipment for operation as required	3.1. Perform ***pre-start up checks*** 3.2. Suspected unusual or non standard product, materials and equipment are reported to an appropriate person 3.3. If required notify other team members on the intended equipment function and start up 3.4. Check/supply materials to equipment as required 3.5. Start up the item of equipment as required 3.6. Bring to specified conditions and build operating rate steadily, checking expected performance at various stages in accordance with procedures
4. Operate equipment	4.1. Monitor ***equipment operating conditions*** 4.2. Monitor ***product characteristics*** 4.3. Recognise conditions and characteristics which indicate a ***problem or a potential problem*** 4.4. Take ***appropriate action*** in response to problem or potential problem 4.5. Maintain supply of materials and removal of products as required 4.6. Complete required ***records*** 4.7. Keep equipment and work area in a clean, organised and safe condition
5. Prepare equipment for shut down as required	5.1. Perform emergency pause, stop or shutdown as required 5.2. Ensure equipment is free of product or purged as required 5.3. Shut down equipment in accordance with procedures 5.4. Make sure equipment and area is left in a safe condition and ready for ***need***

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

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

Required skills

- observation
- following procedures for start up, operation and shut down of equipment
- analysis
- problem solving
- communication
- documenting

Required knowledge

- all major components of the equipment and describe the function of each
- principles of equipment operation
- equipment operating parameters
- equipment and product variables and their interactions.
- apply and/or explain:
- impact of materials and properties
- start-up and shutdown processes
- construction and limitations of the equipment
- out of specification situations
- distinguish between causes of faults such as:
- raw materials
- instrument failure/malfunction
- electrical failure/malfunction
- mechanical failure/malfunction
- variations in product parameters (temperature, flows, pressure&levels).

Evidence Guide

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.	
Overview of assessment	The competent person will be able to carry out the day to day operation of a piece of production equipment, meeting the demands of productivity and quality while resolving routine problems.
What critical aspects of evidence is required to demonstrate competency in this unit?	It is essential that the equipment be understood and that the importance of critical material properties, settings and readings is known. Competence must be demonstrated in the ability to recognise and analyse potential or actual problem situations requiring action and then in implementing appropriate corrective action. The emphasis should be on the ability to avoid problems rather than on recovery from a problem. Consistent performance should be demonstrated. In particular look to see that: • process conditions are maintained within limits • quality is monitored to minimise wastage • start-up and shutdown occurs first time • signals and alarms are responded to immediately • process measurements are continually made or observed • all OHS requirements are followed. • early warning signs of equipment/processes needing attention or with potential problems are recognised • the range of possible causes can be identified and analysed and the most likely cause determined • appropriate action is taken to ensure a timely return to full performance • obvious problems in related plant areas are recognised and an appropriate contribution made to their solution • pre-start checks are made to ensure equipment is lined up to the plant in accordance with procedures and/or manufacturers specifications. Besides assessing actual operation of manufacturing equipment many aspects may be also be assessed using a range of scenarios, case studies or what ifs as the assessment method. These assessment activities should

EVIDENCE GUIDE	
	include a range of problems, including new, unusual situations that may have been generated from past history
In what context should assessment occur?	Assessment will need to occur on an operating item of production equipment although some aspects especially problem solving may be assessed through simulation.
Are there any other units which could or should be assessed with this unit or which relate directly to this unit?	This unit could be assessed concurrently with other relevant units.
What method of assessment should apply?	Assessors must be satisfied that the person can consistently perform the unit as a whole, as defined by the elements, performance criteria, skills and knowledge. A holistic approach should be taken to the assessment. The assessee will have access to all techniques, procedures, information, resources and aids which would normally be available in the workplace. The method of assessment should be discussed and agreed with the assessee prior to the commencement of the assessment.
What evidence is required for demonstration of consistent performance?	Assessors should gather sufficient, fair, valid, reliable, authentic and current evidence from a range of sources. Sources of evidence may include direct observation, reports from supervisors, peers and colleagues, project work, samples, organisation records and questioning. Assessment should not require language, literacy or numeracy skills beyond those required for the unit.
What are the specific resource requirements for this unit?	Access to an operating item of production equipment over an extended time.

Range Statement

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.	
Workplace	Workplace for this unit covers a manufacturing environment specifically established for learning introductory manufacturing skills. It may be: • a school classroom or workshop equipped to teach manufacturing principles and practices • RTO premises equipped to teach manufacturing principles and practices • an enterprise environment where above average supervision exists and training is occurring. The normal production imperatives have been modified to take into account the training being delivered.
Procedures	Procedures includes all work instructions, standard operating procedures, formulas/ recipes, batch sheets, temporary instructions and similar instructions provided for the smooth running of equipment and processes. They may be written, verbal, computer based or in some other form. For the purposes of this Training Package, ' procedures' also includes good operating practice as may be defined by industry codes of practice (eg Good Manufacturing Practice (GMP), Responsible Care) and government regulations.
Equipment	Equipment for the purposes of this unit covers routine or common manufacturing equipment suitable for students operating in a simulated or trial manufacturing environment where there is a high degree of direct supervision. examples include but are not limited to: • guillotines • bending and folding machines • non CNC lathes, especially bench and training lathes

RANGE STATEMENT	
	• soldering equipment • pedestal drills • bench grinders
Hazards	Workplace hazards include: • hazardous materials • gases and liquids under pressure • moving machinery • cutting edges • electrical equipment • materials handling • environments subject to heat, noise, dusts or vapours.
Pre-start up checks	Pre-start up checks include: • visual checks • completing checklists • checking that safety guards, gates etc are in position and are operational • other checks required by standard operating procedures and manufacturer's instructions
Equipment operating conditions	Equipment operating conditions will be monitored using a range of techniques including: • monitoring of measured or indicated data as shown by gauges, charts etc., (eg. speed, hours on line, pressure, temperature, flow, vibration) • the senses of smell, sight, sound and feel as appropriate.
Product characteristics	Product characteristics includes: • product quality • production rate • defect rate
Problem/potential problem	Problem/potential problem includes: • changes to operating conditions • adverse changes to product characteristics • adverse changes to waste
Appropriate action	Appropriate action includes: • making adjustments in accordance with procedures

RANGE STATEMENT	
	• stopping the equipment in accordance with procedures • reporting to appropriate person.
Records	Records include: • log sheets/books • job/work sheets • electronic/paper records • verbal/voicemail/email reports
Need	Need includes: • leaving the equipment ready for restart • leaving it safe for maintenance • preparing for a medium/long term shut down

Unit Sector(s)

Unit sector	Manufacturing Pathways

Competency field

Competency field	

Co-requisite units

Co-requisite units		