Australian Government

Department of Education, Employment and Workplace Relations

PMAOPS204B Use utilities and services

Revision Number: 1

PMAOPS204B Use utilities and services

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit covers the use of a range of utilities and services in the plant. It includes the selection of the appropriate utility/service from those provided to the plant and recognizing and responding to operational problems as required.

Application of the Unit

Application of the unit	In a typical scenario an operator will be able to identify and select utilities and services used on a day to day basis. These will be provided to a process plant and will consist of instrument and plant air, nitrogen, plant water, steam, flushing oil and other utilities/ services required for a particular process. The operator uses these utilities/services as required. The correct use and application of these substances is essential to plant and operator safety and the continued performance of the process. Generally the operations technician would be part of a team during start-up and shutdown procedures and may be expected to be capable of performing all parts of this unit, but only for those utilities/services required by their plant. At all times they would be liaising and cooperating with other members of the team. This unit does not cover the provision or generation of utilities or services which are covered by: • *PMAOPS224B Provide fluids for utilities and support,* ***OR*** • *UTPNEG162A Operate and monitor boiler steam/water cycle.*

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. Prepare for work.	1.1. Identify work requirements 1.2. Identify and control hazards 1.3. Coordinate with appropriate personnel
2. Select and use utilities and services.	2.1. Identify utilities and services available in the plant 2.2. Identify key properties, applications and limitations of each utility and service 2.3. Select appropriate utility/service for the required duty 2.4. Use selected utility/service to procedures.
3. Respond to problems.	3.1. Monitor use of utility/service frequently and critically throughout shift using measured/indicated data and senses (sight, hearing, etc) as appropriate. 3.2. Recognise operational problems 3.3. Analyse cause of operational problems within scope of skill level 3.4. Take timely and appropriate action to solve operational problems.

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This describes the essential skills and knowledge and their level, required for this unit.

Required skills

- efficient and effective operation of plant/equipment
- hazard analysis
- completing plant records
- communication
- problem solving.

Ability to isolate the causes of problems to an item of equipment within the production system and to distinguish between causes of problems/alarm/fault indications such as:

- instrument failure/malfunction
- electrical failure/malfunction
- mechanical failure/malfunction
- variations in product parameters (temperature, flows, pressure and levels).

Required knowledge

Understanding of service utilities which form part of the utilities system. In particular it includes a knowledge of:

- names and functions of all items on a schematic of the utilities system
- differences in use and methods between each service and utility
- hazards in operation of services
- differences between grades/types of services, eg grades of steam, air and nitrogen
- physics and chemistry relevant to the utility and its use
- process parameters and limits, eg temperature, pressure, flow, pH
- duty of care obligations
- hierarchy of control
- communication protocols, eg radio, phone, computer, paper, permissions/authorities
- routine problems, faults and their resolution
- relevant alarms and actions
- plant process idiosyncrasies
- all items on a schematic of the plant item and the function of each
- correct methods of starting, stopping, operating and controlling utility
- corrective action appropriate to the problem cause
- function and troubleshooting of major components and their problems, such as steam traps, lubricators, moisture pots
- types and causes of futility problems within operator's scope of skill level and responsibility.

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, the Range Statement and the Assessment Guidelines for the Training Package.	
Overview of assessment	Assessment of this unit should include demonstrated competence on actual plant and equipment in a work environment. The unit will be assessed in as holistic a manner as is practical and may be integrated with the assessment of other relevant units of competency. Assessment will occur over a range of situations, which will include disruptions to normal, smooth operation. Simulation may be required to allow for assessment of parts of this unit. Simulation should be based on the actual plant and will include walk-throughs of the relevant competency components. Simulations may also include the use of case studies/scenarios, role plays and 3D virtual reality interactive systems. In the case of evacuation training or training for competencies practised in life-threatening situations, simulation may be used for the bulk of the training. This unit of competency requires an application of the knowledge contained in the use of the equipment, to the level needed to maintain control and recognise and resolve problems. This can be assessed through questioning and the use of what-if scenarios both on the plant (during demonstration of normal operations and walk throughs of abnormal operations) and off the plant.
Critical aspects for assessment and evidence required to demonstrate competency in this unit	Competence must be demonstrated in the ability to recognise and analyse potential situations requiring action and then in implementing appropriate corrective action. The emphasis should be on the ability to stay out of trouble rather than on recovery from a disaster. Consistent performance should be demonstrated. In particular look to see that: • 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

EVIDENCE GUIDE	
	to full performance • obvious problems in related plant areas are recognised and an appropriate contribution made to their solution. These aspects may be best assessed using a range of scenarios/case studies/what-ifs as the stimulus with a walk-through forming part of the response. These assessment activities should include a range of problems, including new, unusual and improbable situations which may have been generated from the past incident history of the plant, incidents on similar plants around the world, hazard analysis activities and similar sources.
Context of and specific resources for assessment	Assessment will require access to an operating plant over an extended period of time, or a suitable method of gathering evidence of operating ability over a range of situations. A bank of scenarios/case studies/what-ifs will be required as will a bank of questions which will be used to probe the reasoning behind the observable actions.
Method of assessment	In all plants it may be appropriate to assess this unit concurrently with relevant teamwork and communication units. In a major hazard facility, it may be appropriate to assess this unit concurrently with: • *MSAPMOHS200A Work safely*.
Guidance information for assessment	Assessment processes and techniques must be culturally appropriate and appropriate to the communication ability, language and literacy capacity of the assessee and the work being performed.

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. Add any essential operating conditions that may be present with training and assessment depending on the work situation, needs if the candidate, accessibility of the item, and local industry and regional contexts.	
Codes of practice/ standards	Where reference is made to industry codes of practice, and/or Australian/international standards, the latest version must be used.
Service utilities	This unit of competency includes all service utilities which form part of the utility system. For your plant this may include (select relevant items): • steam - saturated, superheated • air - process, instrument, breathable • water - cooling, boiler feed, plant, waste • inert atmosphere - nitrogen, carbon dioxide • flushing oil.
Problems	Typical problems for your plant may include: • non-supply of products and elements • variation in product and element feed rates • variations in temperature, pressure and flow • blockages or leakage.
Appropriate action	Appropriate action includes: • determining problems needing action • determining possible fault causes • rectifying problem using appropriate solution within area of responsibility • following through items initiated until final resolution has occurred • reporting problems outside area of responsibility to designated person.
Procedures	Procedures may be written, verbal, computer-based or in some other form. They include: • all work instructions • standard operating procedures • formulas/recipes • batch sheets • temporary instructions • any similar instructions provided for the smooth running of the plant. For the purposes of this Training Package, 'procedures' also includes good

RANGE STATEMENT	
	operating practice as may be defined by industry codes of practice (eg Responsible Care) and government regulations.
Health, **safety and environment** (**HSE**)	All operations to which this unit applies are subject to stringent health, safety and environment requirements, which may be imposed through State or Federal legislation, and these must not be compromised at any time. Where there is an apparent conflict between Performance Criteria and HSE requirements, the HSE requirements take precedence.

Unit Sector(s)

Unit sector	Operational/technical

Competency field

Competency field	

Co-requisite units

Co-requisite units		