



Australian Government

Department of Education, Employment and Workplace Relations

PMAOPS224B Provide fluids for utilities and support

Revision Number: 1

PMAOPS224B Provide fluids for utilities and support

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit covers the generation, provision or 'making' of services for use by a plant. While this generally would apply to a remote or off shore plant, it may also be appropriate for other plants.
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Application of the Unit

Application of the unit	<p>In a typical scenario an operator uses and monitors a range of equipment which provides essential fluids for process support. These fluids may be used for instrumentation, cooling, stabilising, scrubbing and hazard reduction, fire suppression and other uses.</p> <p>The operator would:</p> <ul style="list-style-type: none">• identify and report operational problems• be aware of and contribute to a safe working environment• contribute to the safe production of utility and support fluids• operate, monitor and maintain equipment following relevant procedures. <p>Generally the operator would be part of a team during start up and shut down procedures and would be expected to be capable of demonstrating competence in all parts of this unit for the services relevant to their plant. At all times they would be liaising and cooperating with other members of the team.</p> <p>This unit does not require the operation of a central control panel.</p> <p>This unit does not cover the generation of steam using a fired boiler - see <i>UTPNEG162A Operate and monitor boiler steam/water cycle</i></p> <p>nor the use of these services as part of operating a process plant - see <i>PMAOPS204B Use utilities and services</i></p>
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Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Prerequisite units	
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Employability Skills Information

Employability skills	This unit contains employability skills.
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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.
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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. Start up equipment and/or processes.	2.1. Ensure equipment or process is ready to start and not tagged out or subject to work order 2.2. Check all valves, inlets and outlets are in correct positions for start-up 2.3. Check as appropriate for 'clear board' with all indicators 'in the green' 2.4. Inform other plant personnel as appropriate 2.5. Commence start-up to procedures and monitor fluid flows, temperatures and/or pressures 2.6. Confirm all fluids are flowing at correct volume, pressure and/or temperature.
3. Monitor utility and support fluid equipment.	3.1. Determine the required levels of demand for support or utility fluids from a knowledge of the plant/site's process control systems or equipment 3.2. Monitor process equipment and systems, including compressors, pumps, receivers and distribution systems, to meet and maintain the facility utility service requirements 3.3. Monitor and manually adjust flow or ensure correct operation of automatic control valves to control the flow of fluids into the plant/site's process systems and equipment 3.4. Monitor quality of fluids and ensure that they remain within specifications, eg quality and consistency 3.5. Complete routine checks and reports 3.6. Take appropriate action resulting from monitoring and checks.
4. Identify need for maintenance.	4.1. Monitor service records to assist with programmed maintenance scheduling 4.2. Monitor equipment for evidence of maintenance needs outside programmed maintenance 4.3. Advise other site personnel of the need to take equipment off-line for maintenance action 4.4. Identify back-up or auxiliary equipment (where provided) to facilitate maintenance of fluid supplies within the facility 4.5. Ensure equipment can be safely taken off line for maintenance
5. Isolate and	5.1. Isolate plant

ELEMENT	PERFORMANCE CRITERIA
de-isolate plant.	5.2.Make safe for required work 5.3.Check plant is ready to be returned to service 5.4.Prepare plant for return to service.
6. Respond to emergencies.	6.1.Identify critical out of specification performance of equipment and contact appropriate personnel 6.2.Respond to an emergent situation according to procedures 6.3.Shut down, under instruction, any equipment and associated equipment affected by the emergency situation 6.4.Implement any back-up procedures to ensure the ongoing supply of critical fluids to the remainder of the facility 6.5.Ensure all safety procedures are fully complied with.

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

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

Required skills

Competence includes the ability to isolate the causes of problems to an item of equipment within the production system and to be able to distinguish between causes of problems/alarm/fault indications such as:

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

Required knowledge

The knowledge referred to in the Evidence Guide for this unit includes:

- identify all items on a schematic of the system and describe the function of each
- principles of equipment operation
- physics relating to the particular process
- chemistry relating to the process
- process equipment operating parameters
- emergency back up systems
- process control systems and instrumentation
- the differences between high pressure and low pressure systems.
- 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
- correct methods of starting, stopping, operating and controlling process
- corrective action appropriate to the problem cause
- function and troubleshooting of major components and their problems
- types and causes of 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	
	<p>to full performance</p> <ul style="list-style-type: none"> • obvious problems in related plant areas are recognised and an appropriate contribution made to their solution. <p>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.</p>
Context of and specific resources for assessment	<p>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.</p>
Method of assessment	<p>In all plants it may be appropriate to assess this unit concurrently with relevant teamwork and communication units.</p> <p>In a major hazard facility, it may be appropriate to assess this unit concurrently with:</p> <ul style="list-style-type: none"> • <i>MSAPMOHS200A Work safely.</i>
Guidance information for assessment	<p>Assessment processes and techniques must be culturally appropriate and appropriate to the oracy, language and literacy capacity of the assessee and the work being performed.</p>

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 of 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.
Context	<p>This unit of competency includes all such items of equipment and unit operations which form part of the utilities/fluids supply system. For your plant this may include (select relevant items):</p> <ul style="list-style-type: none"> • plant water equipment • high and low pressure steam equipment • flushing oil systems • cryogenic plants • refrigerant systems • filtration equipment • purge systems.
Typical problems	<p>Typical problems for your plant may include:</p> <ul style="list-style-type: none"> • variation in fluid feed • vibration or surging • control of level, temperature, pressure and flow • blockages or leakage.
Appropriate action	<p>Appropriate action includes:</p> <ul style="list-style-type: none"> • 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	<p>Procedures may be written, verbal, computer-based or in some other form. They include:</p> <ul style="list-style-type: none"> • all work instructions • standard operating procedures • formulas/recipes • batch sheets

RANGE STATEMENT	
	<ul style="list-style-type: none"> • temporary instructions • any similar instructions provided for the smooth running of the plant. <p>For the purposes of this Training Package, 'procedures' also includes good operating practice as may be defined by industry codes of practice (eg Responsible Care) and government regulations.</p>
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
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Competency field

Competency field	
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Co-requisite units

Co-requisite units		
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