



Australian Government

Department of Education, Employment and Workplace Relations

PMAOPS240B Store fluids in bulk

Revision Number: 1

PMAOPS240B Store fluids in bulk

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This competency covers the storage and transfer of fluids to and from tanks. In a typical scenario the plant technician will manage a series of liquid storage tanks for raw materials and finished product as part of the production process. The plant technician will arrange for the unloading of tanker trucks, transfer of liquids from the storage tanks to processing area, finished product to the appropriate tanks and also loading of tankers with finished product.
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Application of the Unit

Application of the unit	The plant technician will be able to: • identify the material and interpret any special handling or storage requirements, including dangerous or hazardous goods requirements, from the available information • ensure that the destination for the liquid is appropriately prepared, has enough capacity and is correctly piped • check that the liquids are being stored safely in tanks and that safety equipment and services are monitored • respond to emergency situations. This unit does not apply to the transfer and storage of bulk materials typically found within refinery storage areas or hydrocarbons processing areas. For these areas refer to <i>PMAOPS307B Transfer of product into land or sea based storage facility</i>. Generally the plant technician 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. At all times they would be liaising and cooperating with other members of the team. This unit does not require the operation of a central control panel.
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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. Prepare storage/ loading facilities.	2.1. Ensure that products are being stored in the tank area to procedures 2.2. Inspect storage facilities for leaks or damage 2.3. Check and test safety equipment and systems to verify their operational condition and status, and report all equipment faults 2.4. Confirm quantities and specifications of stored liquids in the tank area 2.5. Identify all equipment requiring maintenance 2.6. Take appropriate action
3. Transfer fluids to and from tanks	3.1. Confirm tank capacities and identification and quality of current contents, and determine if these are being maintained within the agreed product requirements prior to transfer 3.2. Ensure all areas involved in the transfer are safe to allow transfer of liquids to occur 3.3. Inspect all transfer equipment before transfer, including lines, hoses, pumps, fittings, instruments and controls 3.4. Confirm that transfer destination has sufficient capacity for the transfer 3.5. Take appropriate action 3.6. Transfer liquids safely to procedures 3.7. Conduct cleaning, purging or draining as required 3.8. Record transfer as required.
4. Isolate and de-isolate plant.	4.1. Isolate plant 4.2. Make safe for required work 4.3. Check plant is ready to be returned to service 4.4. Prepare plant for return to service.

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.

Required knowledge

Demonstration of competence in this unit must include knowledge of the following:

- all items on a schematic of the tank farm and the function/s of each
- testing techniques
- equipment isolation and purging
- use and operation of safety equipment, including breathing apparatus if required
- tank and product mixes
- flow rates and measures
- tank capacities and percentages
- static electricity principles.
- principles of operation of plant/equipment
- physics and chemistry relevant to the process unit
- 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 plant
- corrective action appropriate to the problem cause
- function and troubleshooting of major components and their problems.

Sound knowledge of storage and transfer techniques required for transport of oil, gas or water is expected.

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 or storage facility 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 and role plays.

This unit of competency requires a significant body of knowledge which will 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 to full performance
- obvious problems in related plant areas are recognised and an appropriate contribution made to their solution.

EVIDENCE GUIDE	
	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. Consider co-assessment with: • <i>PMAOPS201B Operate fluid flow equipment.</i> In a major hazard facility, it may be appropriate to assess this unit concurrently with: • <i>MSAPMOHS200A Work safely.</i>
Guidance information for assessment	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.

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	This unit of competency includes all such items of equipment and unit operations, which form part of the storage and loading system. For your facility this may include (select relevant items): • tanks • vessels • pumps • compressors • road or rail tanker loading facilities • gauges • fire protection and deluge systems • inert gas blanketing or purging systems (eg nitrogen) • gas detection systems and equipment • tank dipping and measurement equipment.
Products	Products may include any fluid material or product in the plant and stored in bulk.
Fluid	Any material which flows, and includes materials which: • are normally a liquid at ambient conditions • are normally a gas at ambient conditions • have been liquefied • have been vapourised • have been melted • are in a condition when they can flow.
Problems	Typical problems for your facility may include: • interruptions to loading through adverse weather conditions • selection of appropriate storage facility • control of temperature and pressure • variations in feed • vibration

RANGE STATEMENT	
	• tank capacities and space.
Start up shut down as required	Start up shut down as required includes: • start up and shut down to/from normal operating conditions • start up and shut down to/from isolated, cold, empty all other conditions experienced on the plant, ie from any condition to any condition experienced on the plant.
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 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
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Competency field

Competency field	
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Co-requisite units

Co-requisite units		
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