



Australian Government

PMAOPS334 Operate and troubleshoot gas absorption system

Release: 1

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Modification History

Release 1. Unit code and title changed. Application and Performance Criteria changed. Range of Conditions removed. Assessment Requirements changed. Supersedes and is equivalent to PMAOPS326 Operate gas absorption unit.

Application

This unit describes the skills and knowledge required to operate a gas absorption system comprising two or more components of plant or equipment operated together to produce product. Gas absorption units may be glycol dehydration, CO₂ absorption or similar fluid/fluid absorption units.

This unit applies to autonomous operators who are required to demonstrate a significant understanding of the process and the equipment operation in a plant with local control, or in liaison with the control-room operator in a plant with a centralised control panel.

This unit applies to an individual working alone or as part of a team or group, and working in liaison with other shift team members and the control-room operator, as appropriate. In the case of a large, complex plant, the operations technician would be part of a team during startup and shutdown procedures. The unit does not require the operation of a central control panel.

No licensing or certification requirements exist at the time of publication. Relevant legislation, industry standards and codes of practice within Australia must be applied.

Pre-requisite Unit

Nil

Competency Field

Operations

Elements and Performance Criteria

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<i>Elements describe the essential outcomes.</i>	<i>Performance criteria describe the performance needed to demonstrate achievement of the element.</i>

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1. Operate gas absorption system according to procedures	1.1 Receive and give shift handover 1.2 Communicate with personnel to identify and coordinate work requirements 1.3 Identify, control and report process system hazards 1.4 Check for recent work undertaken on gas absorption system and address outstanding and incomplete work 1.5 Check operational status of process system 1.6 Perform routine checks and complete logs and paperwork, taking action on unexpected readings 1.7 Adjust process system, including regeneration, according to agreed operational parameters
2. Identify and respond to abnormal situations during operation	2.1 Monitor gas absorber system frequently and critically throughout shift using own senses, and measured and indicated data 2.2 Monitor field data and instrumentation to ensure that product remains on specification 2.3 Identify impacts of changes upstream and downstream 2.4 Identify actual and developing situations that may require action 2.5 Take action to remedy abnormal situations according to operating procedures 2.6 Complete required documents outlining abnormal situation management and corrective action taken
3. Shut down and prepare gas absorption system for maintenance	3.1 Prepare process system to be shut down according to operating procedures 3.2 Complete pre-shutdown checks according to operating procedures 3.3 Shut down process system according to operating procedures 3.4 Identify, control and report shutdown hazards 3.5 Monitor shutdown and identify abnormal situations that may require action 3.6 Take action to remedy abnormal situations according to operating procedures 3.7 Shut down and changeover duty and standby equipment according to operating procedures 3.8 Isolate process system from energy sources

Elements	Performance Criteria
<i>Elements describe the essential outcomes.</i>	<i>Performance criteria describe the performance needed to demonstrate achievement of the element.</i>
4. Prepare and start up gas absorption system	4.1 De-isolate and prepare process system to be returned to standby or service 4.2 Complete pre-start checks according to operating procedures 4.3 Start up process system according to operating procedures 4.4 Identify, control and report startup hazards 4.5 Monitor startup and identify abnormal situations that may require action 4.6 Take action to remedy abnormal situations according to operating procedures

Foundation Skills

This section describes those language, literacy, numeracy and employment skills that are essential to performance.

- Learning skills to follow instructions, monitor process and select appropriate procedure.
- Reading skills to follow written procedures and documentation.
- Writing skills to complete workplace documentation.
- Oral communication skills to liaise and coordinate with team members and the control-room operator.
- Numeracy skills to monitor field data, instrumentation and process parameters.

Other foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Release 1. Supersedes and is equivalent to PMAOPS326 Operate gas absorption unit.

Links

Companion Volume implementation guides are found in VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=9fc2cf53-e570-4e9f-ad6a-b228ffdb6875>

Assessment Requirements for PMAOPS334 Operate and troubleshoot gas absorption system

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Performance Evidence

There must be evidence the candidate has completed the tasks outlined in the elements and performance criteria of this unit:

- at least 2 times, each in a separate work context and included regeneration of the absorbent.

Knowledge Evidence

There must be evidence the candidate has knowledge of:

- all items on a schematic of the gas absorption system, including:
 - gas absorber system items, functions and troubleshooting techniques
 - principles of operation, gas treatment and extraction
 - operating parameters and integrity limits, product specifications and tolerances including temperature, pressure, flow and pH
 - procedures for starting, stopping, operating, controlling and isolating system
 - emergency shutdown procedures
 - process control philosophies and strategies
 - interactions with processes
- physics and chemistry to the level of being able to provide an overview of the science of the gas absorption process
- gas absorption system abnormal situations and required action, including but not limited to:
 - variation or loss of feed
 - unstable control of pressure, temperature level and flows
 - control equipment failure
 - process plant trips
 - change in atmospheric conditions (rain, temperature, wind and lightning)
 - medium contamination (acidic – pH, solids, water content and hydrocarbon content)
 - poor regeneration (flow/heat/cooling)
 - poor quality from test results
 - analyser inaccuracy or malfunction
- hierarchy of control

- gas absorption and regeneration hazards:
 - possible causes
 - potential consequences
 - appropriate risk controls
 - reporting and escalation procedures.

Assessment Conditions

Skills must have been demonstrated in the workplace or in a simulated environment that reflects workplace conditions and contingencies. The following conditions must be met for this unit:

- use of suitable facilities, equipment and resources, including:
 - gas absorption system
 - operating procedures
- abnormal situations must be relevant to gas absorption system.

Assessors must satisfy the NVR/AQTF mandatory competency requirements for assessors.

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