



Australian Government

PMAOPS230 Monitor, operate and maintain pipeline stations and equipment

Release: 1

PMAOPS230 Monitor, operate and maintain pipeline stations and equipment

Modification History

Release 1. Supersedes and is equivalent to PMAOPS230B Monitor, operate and maintain pipeline stations and equipment

Application

This unit of competency covers the skills and knowledge required to operate and maintain pipeline stations and equipment where the pipeline is covered by the *AS 2885 Pipelines - Gas and liquid petroleum* suite of standards. *AS 2885 Pipelines - Gas and liquid petroleum* (and its related standards) should be consulted for detail.

This unit of competency applies to operators who are required to start up and shut down the equipment, monitor its performance and the need for maintenance, identify problems and take appropriate action, and maintain records.

The unit of competency applies to pipeline stations, such as:

- maintenance bases
- compressor stations
- scraper stations
- inlet and delivery stations
- mainline block valve sites.

This unit of competency applies to an individual who may work alone although under the routine direction and supervision of a person who is competent to undertake the complete operation of the plant/plant area. They may work as part of a team or group and will work in liaison with other shift team members and the control room operator, as appropriate.

This unit of competency does not require the operation of a central control panel but may be applied to a pipeline control centre.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Pre-requisite Unit

Nil

Competency Field

Operations

Unit Sector

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe the performance needed to demonstrate achievement of the element.

- | | | | |
|---|---|-----|---|
| 1 | Prepare for work | 1.1 | Receive and give shift handover |
| | | 1.2 | Identify work requirements |
| | | 1.3 | Identify and control hazards |
| | | 1.4 | Coordinate with appropriate personnel |
| | | 1.5 | Check for recent work undertaken on pipeline |
| | | 1.6 | Note any outstanding/incomplete work |
| | | 1.7 | Check operational status of pipeline and its components |
| | | | |
| 2 | Plan and organise for activities | 2.1 | Obtain tools, equipment and testing devices needed to carry out the work and check for correct operation and safety |
| | | 2.2 | Check operational area to ensure that hazards are controlled |
| | | 2.3 | Conduct required safety checks and pre-start checks of the equipment |
| | | 2.4 | Determine status of the system through communication with relevant personnel prior to commencing start-up |
| | | | |
| 3 | Start up/shut down the system | 3.1 | Start up the system in accordance with procedures |
| | | 3.2 | Shut down in accordance with procedures and conditions |
| | | 3.3 | Apply emergency shutdown procedures when appropriate |
| | | 3.4 | Maintain records/reports to procedures |
| | | | |
| 4 | Monitor the | 4.1 | Monitor operating conditions of equipment through |

	system	condition monitoring systems, gauge levels, temperatures and flow indicators in order to determine performance of equipment and system
		4.2 Adjust systems for the most efficient operation
		4.3 Identify equipment faults through inspection and testing of the operational equipment
		4.4 Take appropriate action
		4.5 Communicate pipeline system information to relevant personnel
		4.6 Select and apply emergency response when required
5	Isolate and de-isolate pipeline or components	5.1 Isolate pipeline and components
		5.2 Make safe for required work
		5.3 Check pipeline/component is ready to be returned to service
		5.4 De-isolate pipeline/component
		5.5 Prepare plant for return to service
6	Record and report results	6.1 Document and record maintenance results to procedures
		6.2 Notify work completion to procedures
		6.3 Cancel where appropriate permit to work and sign-off at completion of repair

Foundation Skills

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

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

Range of Conditions

This field allows for different work environments and conditions that may affect performance. Essential operating conditions that may be present (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) are included.

Regulatory framework

The latest version of all legislation, regulations, industry codes of practice and Australian/international standards, or the version specified by the local regulatory authority, must be used, and include one or more of the following:

- legislative requirements, including work health and safety (WHS)
- industry codes of practice and guidelines
- environmental regulations and guidelines
- Australian and other standards
- licence and certification requirements

All operations to which this unit applies are subject to stringent health, safety and environment (HSE) requirements, which may be imposed through state/territory 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

Procedures

All operations must be performed in accordance with relevant procedures.

Procedures are written, verbal, visual, computer-based or in some other form, and include one or more of the following:

- emergency procedures
- work instructions
- standard operating procedures (SOPs)
- safe work method statements (SWMS)
- formulas/recipes
- batch sheets
- temporary instructions
- any similar instructions provided for the smooth running of the plant

Hazards

Hazards include one or more of the following:

- electricity
- gas
- gases and liquids under pressure

- structural hazards
- structural collapse
- equipment failures
- industrial (machinery, equipment and product)
- equipment or product mass
- noise, rotational equipment or vibration
- plant services (steam, condensate and cooling water)
- limited head spaces or overhangs
- working at heights, in restricted or confined spaces, or in environments subjected to heat, smoke, dusts, vapours or other atmospheric hazards
- flammability and explosivity
- hazardous products and materials
- unauthorised personnel
- sharp edges, protrusions or obstructions
- slippery surfaces, spills or leaks
- extreme weather
- other hazards that might arise

Routine problems

Routine problems must be resolved by applying known solutions.

Routine problems are predictable and include one or more of the following:

- gas/product leaks
- incorrect valve positions
- electrical problems
- compressor or pump failure
- out of current inspection status
- gauge failure or hose rupture, leaks
- instruments out of calibration
- instruments and equipment requiring cleaning

Known solutions are drawn from one or more of the following:

- procedures
- training
- remembered experience

Non-routine problems must be reported according to according to relevant procedures.

Appropriate action

Appropriate action includes the following:

- 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

Operate Operate is to monitor, adjust/change the plant item/unit/system to meet specifications, by one or more of the following:

- manually in the plant
- using local controller in the plant
- using the process control system in the control room

Start up/shut down as required Start up/shut down as required includes the following:

- start up and shut down to/from normal operating conditions
- start up and shut down to/from isolated, cold or empty
- start up and shut down to/from other conditions/situations experienced on the pipeline

Pipeline station and equipment This unit of competency includes all items of equipment and unit operations which form part of the pipeline system, including, as relevant to a particular pipeline, one or more of the following:

- compressor systems and equipment, including monitoring systems, anti surge systems, safety systems and compressor control systems
- prime movers, including turbine engines, reciprocating engines and electric motors
- instrument and control systems
- valve systems

Unit Mapping Information

Release 1. Supersedes and is equivalent to PMAOPS230B Monitor, operate and maintain pipeline stations and equipment

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 PMAOPS230 Monitor, operate and maintain pipeline stations and equipment

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Performance Evidence

- Evidence required to demonstrate competence in this unit must be relevant to and satisfy the requirements of the elements and performance criteria, and include the ability to:
- apply pre-start, start-up and shutdown procedures
- use instrumentation and inspections to monitor operating conditions and test results
- operate equipment to meet specifications
- recognise early warning signs of equipment/processes needing attention or with potential problems
- determine the most likely cause of routine problems
- take appropriate action to ensure a timely return to full performance
- isolate and de-isolate equipment

identify hazards and apply hazard control procedures.

Knowledge Evidence

Evidence must be provided that demonstrates knowledge of:

- station instrumentation, condition monitoring and metering equipment
- principles of operation and purpose of gas analysis equipment, valves, actuators and flanges, vessels/filtration equipment and power supplies
- process parameters and limits, such as temperature and pressure, relevant alarms and actions
- layout of piping systems, sumps and drains
- routine problems, faults and their resolution
- 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 process
- hazards that may arise in the job/work environment, and:
 - their possible causes
 - potential consequences
 - appropriate risk controls.

Assessment Conditions

- The unit should be assessed holistically and the judgement of competence based on a holistic assessment of the evidence.
- The collection of performance evidence:
 - should occur over a range of situations which include typical disruptions to normal, smooth operation of an operating plant
 - will typically include a supervisor/third-party report or other evidence, focusing on consistent performance and problem recognition and solving. A supervisor/third-party report must be prepared by someone who has a direct, relevant, current relationship with the person being assessed and who is in a position to form a judgement on workplace performance relevant to the unit of competency
 - must include the use of an appropriate industrial item of equipment requiring demonstration of operation, start-up and shutdown procedures and responding to problems
 - may use industry-based simulation for part only of the unit where safety, lack of opportunity or significant cost is an issue.
- Assessment should occur in operational workplace situations. Where this is not possible, or where personal safety or environmental damage are limiting factors, assessment must occur in a sufficiently rigorous simulated environment reflecting realistic operational workplace conditions. This must cover all aspects of workplace performance, including environment, task skills, task management skills, contingency management skills and job role environment skills.
- Assessment in a simulated environment should use evidence collected from one or more of:
 - walk-throughs
 - pilot plant operation
 - demonstration of skills
 - industry-based case studies/scenarios
 - ‘what ifs’.
- Knowledge evidence may be collected concurrently with performance evidence (provided a record is kept) or through an independent process, such as workbooks, written assessments or interviews (provided a record is kept).
- Assessment processes and techniques must be appropriate to the language, literacy and numeracy requirements of the work being performed and the needs of the candidate.
- Conditions for assessment must include access to all tools, equipment, materials and documentation required, including relevant workplace procedures, product and manufacturing specifications associated with this unit.
- The regulatory framework will be reflected in workplace policies and procedures and is not required to be independently assessed.
- Foundation skills are integral to competent performance of the unit and should not be assessed separately.
- Assessors must satisfy the assessor competency requirements that are in place at the time of the assessment as set by the VET regulator.

- In addition, the assessor or anyone acting in subject matter expert role in assessment must demonstrate both technical competency and currency. If the assessor cannot demonstrate technical competency and currency they must assess with a subject matter expert who does meet these requirements.
- Technical competence can be demonstrated through one or more of:
 - relevant VET or other qualification/Statement of Attainment
 - appropriate workplace experience undertaking the type of work being assessed under routine and non-routine conditions
 - appropriate workplace experience supervising/evaluating the type of work being assessed under routine and non-routine conditions
- Currency can be demonstrated through one or more of:
 - being currently employed undertaking the type of work being assessed
 - being employed by the organisation undertaking the type of work being assessed and having maintained currency in accordance with that organisation's policies and procedures
 - having consulted/had contact with an organisation undertaking the type of work being assessed within the last twelve months, the consultation/contact being related to assessment
 - conducting on the job training/assessments of the type of work being assessed
 - being an active member of a relevant professional body and participating in activities relevant to the assessment of this type of work.

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