



Australian Government

PMAOPS410 Operate remote production facilities

Release: 1

PMAOPS410 Operate remote production facilities

Modification History

Release 1. Supersedes and is equivalent to PMAOPS410B Monitor remote production facilities

Application

This unit of competency covers the skills and knowledge required to operate and monitor remote process/plant, including production facilities and its associated ancillary equipment and services, from a remote, off-site control system using ground based, satellite or other communications systems. It applies to remote facilities, such as wellheads, separation facilities, utility systems, compressor/pumping stations, treatment stations and satellite processes.

This unit of competency applies to senior technicians or similar roles who are required to apply in depth knowledge of process and plant in order to operate, monitor and optimise the remote facility, perform tests and isolations, solve process problems and liaise with other plants and facilities.

This unit of competency would typically require the use of a control system, such as a distributed control systems (DCS) or supervisory control and data acquisition (SCADA).

It is not expected that there would be a 'field operator' available full time at the remote facility and arranging for one to attend could be part of the role.

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.

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|-----------------------------------|--|
| 1 Prepare for operation of | 1.1 Receive and give shift handover |
| | 1.2 Identify work requirements |

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|------------------------|------------------------------------|---|
| remote facility | 1.3 | Identify and control remote facility hazards |
| | 1.4 | Check for recent work undertaken on remote facility |
| | 1.5 | Note any outstanding/incomplete work |
| | 1.6 | Check operational status of remote facility |
| | 1.7 | Liaise with field operator and other personnel responsible for remote facility confirming expected attendance time and work to be performed |
| | | |
| 2 | Operate the remote facility | 2.1 Monitor the remote facility, its component plant items, utilities and environment frequently and critically throughout shift using measured/ indicated data |
| | | 2.2 Describe impacts of any environmental changes and changes upstream and downstream |
| | | 2.3 Recognise actual and developing situations which may require action |
| | | 2.4 Apply operational knowledge to resolve problems |
| | | 2.5 Take other actions on abnormal situations which cannot be resolved during the shift to ensure safety and the resolution of the situation |
| | | 2.6 Follow through items initiated until final resolution has occurred |
| | | |
| 3 | Recover and measure product | 3.1 Monitor quality and quantity of products and wastes generated |
| | | 3.2 Maximise recovery of product and transfer in accordance with procedures |
| | | 3.3 Ensure all waste is treated in accordance with procedures and waste disposed of is within environmental/licence limits |
| | | 3.4 Ensure measuring, sampling, testing and data logging is occurring to schedule |

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|---|---|--|
| 4 | Organise required onsite activities | <div>4.1 Identify job scope and timing of required on-site work from monitored data, job schedules and observations of remote facility operations</div> <div>4.2 Arrange for appropriate personnel to attend remote site within the required timeframe</div> <div>4.3 Liaise with personnel attending site from their departure for remote site, their activities on remote site and their return to base</div> <div>4.4 Check effectiveness of on-site work before personnel leave remote site</div> |
| | | |
| 5 | Isolate and de-isolate remote facility | <div>5.1 Arrange to have personnel on site in accordance with procedures</div> <div>5.2 Complete any required pre-start checks</div> <div>5.3 Start up/shut down remote facility according to the type and duty in liaison with other personnel</div> <div>5.4 Start up/shut down/changeover component plant items within unit according to their type and duty in liaison with other personnel</div> <div>5.5 Isolate entire remote facility and/or any component plant item</div> <div>5.6 Make safe for required work</div> <div>5.7 Check remote facility/plant item is ready to be returned to service</div> <div>5.8 De-isolate and prepare remote facility/plant item for return to service</div> |

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.

Hazards Hazards include one or more of the following:

- remoteness/single operator
- electricity
- 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
- working at heights, in restricted or confined spaces, or in environments subjected to heat, dusts or vapours
- 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

Procedures All operations must be performed in accordance with relevant procedures.

Procedures are written, verbal, visual, computer-based or in some other form, 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

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

- variations in feed
- contamination of product
- control of temperature and pressure
- variations in waste
- equipment malfunction
- vibration

Non-routine problems Non-routine problems are unexpected problems, or variations of previous problems and must be resolved by applying operational knowledge to develop new solutions, either individually or in collaboration with relevant experts, to:

- determine problems needing action
- determine possible fault causes
- develop solutions to problems which do not have a known solution
- follow through items initiated until final resolution has occurred
- report problems outside area of responsibility to designated person

Operational knowledge includes one or more of the following:

- procedures
- training
- technical information, such as journals and engineering specifications
- remembered experience
- relevant knowledge obtained from appropriate people

Remote production facility

This unit of competency includes all such items of equipment and unit operations which form part of the remote production facility, including as appropriate to the facility, one or more of the following:

- valves
- pumps
- prime movers
- compressors
- separators
- instrumentation
- storage tanks, ponds and dams
- filters
- wellheads
- hydraulic well control panels
- fire and gas safety systems

Unit Mapping Information

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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 PMAOPS410 Operate remote production facilities

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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:

- interpret and respond to panel messages and alarms
- obtain and interpret data from the control system to minimise variation and maximise performance
- predict impact of a change in one unit/area on other plant units/areas and take action
- apply process knowledge to monitor and predict the need for adjustments to system components
- identify early warning signs of equipment/processes needing attention or with potential problems and take action
- identify hazards and risks and apply risk control procedures.

Knowledge Evidence

Evidence must be provided that demonstrates knowledge of:

- all items on a schematic of the remote system and the function of each
- remote terminal unit, functions, operation and problems
- nature/condition of materials entering and leaving each stage of the process
- changes which have occurred in that stage and why they have occurred
- methods of changing production rates and the advantages and disadvantages of each
- effect of specific climatic and environmental factors
- process parameters and limits (e.g. temperature, pressure, flow and pH)
- principles of operation of plant/equipment
- physics and chemistry relevant to the process unit and the fluids involved
- local lease and well operations requirements and constraints
- corrective action appropriate to the problem cause
- function and troubleshooting of major components and their problems
- hierarchy of control
- 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 operations
 - will typically include a supervisor/third-party report 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 industrial type remote facilities allowing operation
 - may use industry-based simulation for all of the unit particularly 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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