



Australian Government

Department of Education, Employment and Workplace Relations

PMAOPS410B Monitor remote production facilities

Revision Number: 1

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Modification History

Not applicable.

Unit Descriptor

Unit descriptor	In a typical scenario, a technician in a central location looks after the operation of a remote production facility. This may be achieved by using ground based or satellite communications systems. The competency covers the operation and management of remote plants, treatment stations or satellite locations.
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Application of the Unit

Application of the unit	Typically these stations may include: • wellheads • separation facilities • utility systems • remote pumping and compression stations • remote plants • fire and gas safety systems and associated piping and instrumentation. The operations technician would: • identify and rectify operational problems • conduct well testing • conduct critical function testing. Control of a remote production facility may require operation and process monitoring via a remote control system. Generally the operations technician would operate independently and be expected to be capable of performing all parts of this unit. However they may be part of a team during critical inspections or maintenance operations. At all times they would be liaising and cooperating with other members of the team.
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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. Conduct product separation.	2.1. Centralise and prepare well products for initial multi-phase separation, storage and distribution as determined by the required production targets and objectives 2.2. Use multi-phase high and low pressure separation, utilising heat and chemical treatments, to effectively separate the product 2.3. Monitor the separation process via control room operation to ensure all product flows, pressures and temperatures are maintained within correct operating parameters 2.4. Operate and monitor all required utility services to assist in the separation process.
3. Recover and measure product.	3.1. Transfer treated waste water from the separation process for further treatment as required prior to re-injection or disposal 3.2. Ensure that all available product is recovered and all waste water is made safe for further use or disposal within environmental limits 3.3. Measure and sample produced gas as required 3.4. Measure collected product to determine the level of available stocks for further transfer and for accounting purposes 3.5. Take appropriate action.
4. Transfer product.	4.1. Check transfer process equipment required to ensure it is working within agreed operating parameters 4.2. Transfer product to a processing facility for further treatment and enhancement 4.3. Monitor transfers and take appropriate action 4.4. Log and record all product transfers and communicate as required 4.5. Distribute data collected to appropriate personnel.
5. Isolate and de-isolate plant.	5.1. 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.

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 compressor system and to be able to distinguish between causes of problems/alarm/fault indications such as:

- product contamination
- instrument failure/wrong reading
- electrical failure
- mechanical failure
- operational problems
- pressure losses and leakage.

Required knowledge

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

- all items on a schematic of the remote system and the function of each
- 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
- water testing and gas break through testing techniques
- storage and transfer techniques related to the transport of oil, gas or water.
- principles of operation of plant/equipment
- physics and chemistry relevant to the process unit and the fluids involved
- 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
- 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 operation of the remote facility and its integral 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

EVIDENCE GUIDE	
	- 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. 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	Consider co-assessment with other units relevant to the job.
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 remote facility. For your enterprise this may include (select relevant items): • valves • pumps • prime movers • compressors • separators • instrumentation • storage tanks, ponds and dams • filters • wellheads • hydraulic well control panels • fire and gas safety systems.
Typical problems	Typical problems for your plant may include: • contamination of product • control of temperature and pressure • variations in feed • vibration.
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:

RANGE STATEMENT

	• 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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